

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



r e l a t i o n s h i p s   w o r k

ANNUAL PROGRESS REPORT TO THE CALIFORNIA STATE LEGISLATURE  
ACHIEVEMENTS IN CONSERVATION, RECYCLING AND GROUNDWATER RECOVERY  
FEBRUARY 2006

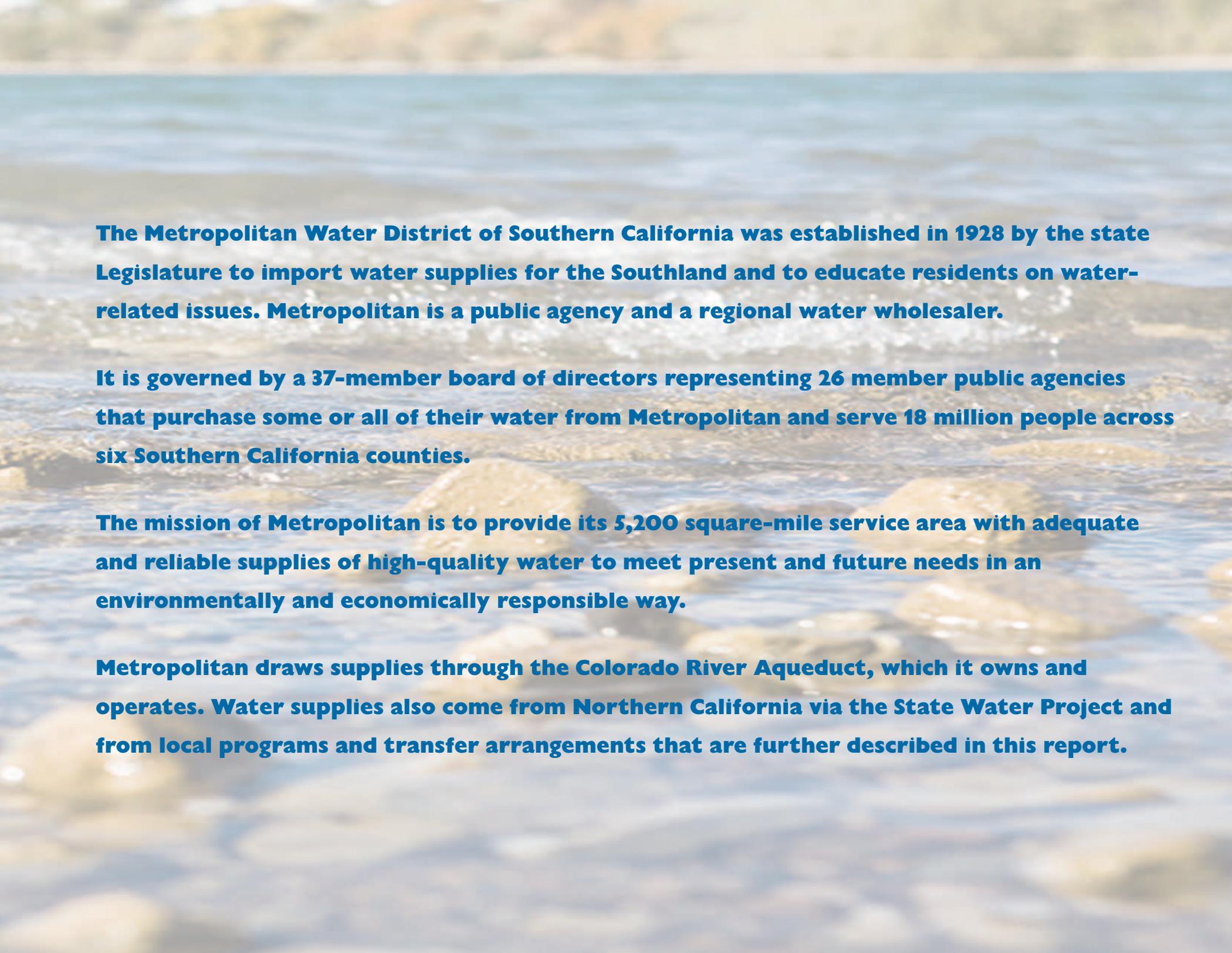


**In Memory**

**Dennis Underwood**

**1944-2005**

**CEO/General Manager**



**The Metropolitan Water District of Southern California was established in 1928 by the state Legislature to import water supplies for the Southland and to educate residents on water-related issues. Metropolitan is a public agency and a regional water wholesaler.**

**It is governed by a 37-member board of directors representing 26 member public agencies that purchase some or all of their water from Metropolitan and serve 18 million people across six Southern California counties.**

**The mission of Metropolitan is to provide its 5,200 square-mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.**

**Metropolitan draws supplies through the Colorado River Aqueduct, which it owns and operates. Water supplies also come from Northern California via the State Water Project and from local programs and transfer arrangements that are further described in this report.**

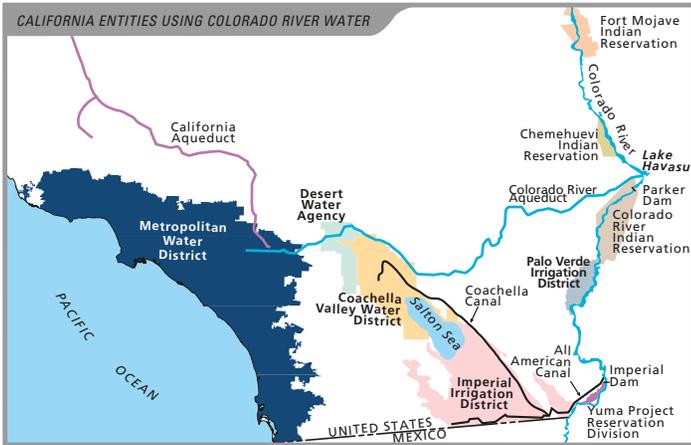
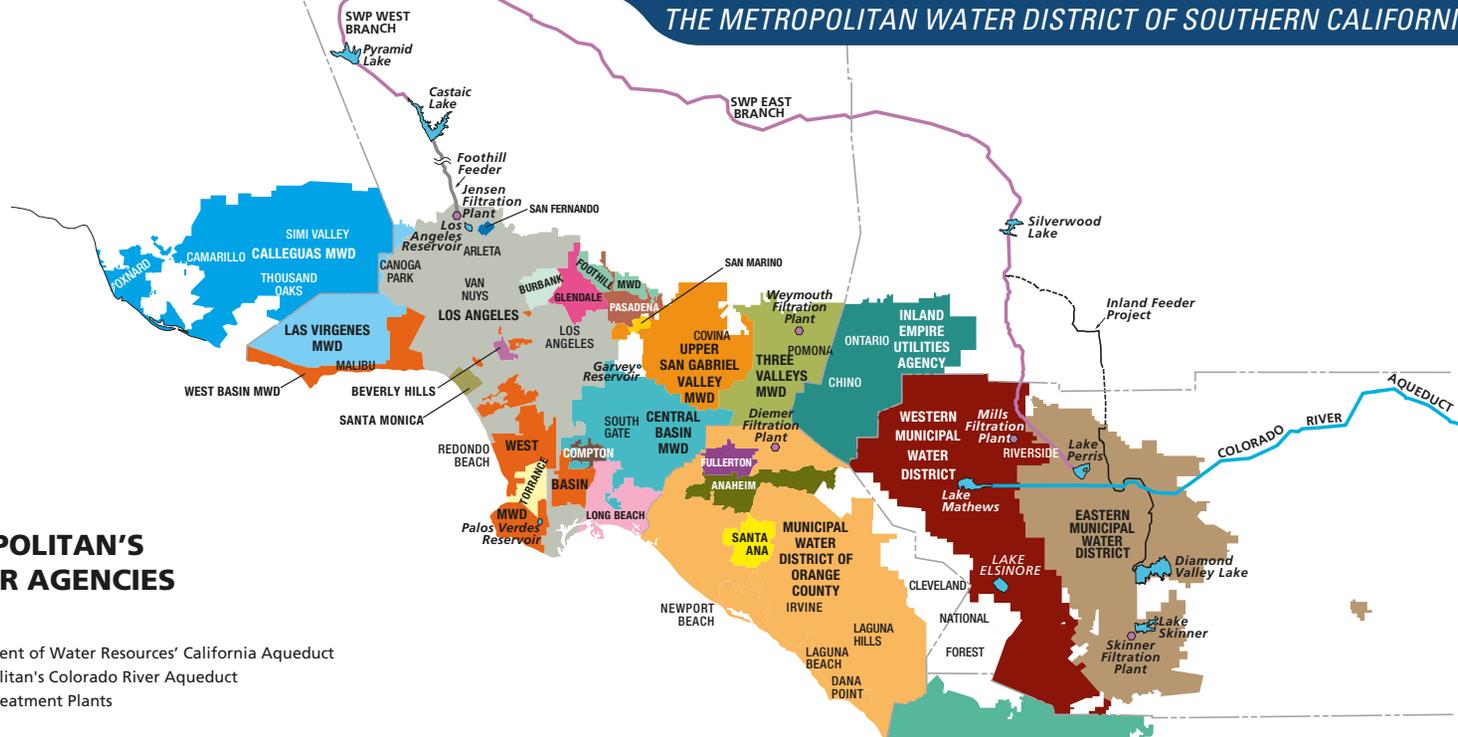
# THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



## METROPOLITAN'S MEMBER AGENCIES

### LEGEND

- Department of Water Resources' California Aqueduct
- Metropolitan's Colorado River Aqueduct
- Water Treatment Plants



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Shea Homes: “Watermill at Adeline’s Farm,” in Temecula is one of three developments that together feature 400 homes with California Friendly™ landscapes.

# Executive Summary

## Introduction

In 2005 Nature delivered a not-so-subtle reminder that it is important to be prepared, a point that had been driven home months earlier by the late CEO/General Manager Dennis Underwood shortly after taking the reins at the Metropolitan Water District.

Recalling his tenure at the Colorado River Board of California, Underwood noted that “we worked on issues collectively, recognizing that you can’t wait for a crisis to arise to begin planning. You need to have good effective relationships in place.”

Mr. Underwood recognized the importance that relationships have always played to Metropolitan - whether it’s persuading residents and businesses to reduce water use, or promoting recycling and ground-water recovery programs among its member agencies, or engaging in agricultural partnerships, or supporting balanced, environmentally sensitive water policies throughout the West.

Metropolitan is sustained by its relationships, elevated by the people and organizations that give and take something out of a relationship with Metropolitan. This year’s annual achievements report details the benefits that come from Metropolitan’s efforts to be prepared and remain buoyed by its diverse alliances.

The Integrated Resources Plan, considered the keystone policy planning document for Metropolitan supplies, was updated in 2004 and continues to provide policy direction for diversifying resources to sustain supply reliability.

With updated targets that include desalinated seawater, Metropolitan’s forecast calls for reliability through 2025 with a varied mix of local and imported resources. Metropolitan’s Regional Urban Water Man-

agement Plan (RUWMP) provides an even closer look at interconnections between agencies, resources and supply reliability.

## Building and Sustaining Relationships

Key relationships come into play in the scheme of reliability-the agency’s core focus. Water is a binding force within our region - and it comes in many forms. Much of it is tapped from local sources, but significant amounts are also imported, conserved and recycled. Some of it is recovered from contaminated ground-water basins and cleaned up. Another important future supply will be from desalinated seawater. With water as the link, Metropolitan and its member agencies have fostered a network of mutually beneficial relationships among homes and businesses with the common goal of creating a reliable, sustainable high-quality water supply.

## Conservation in the Community

The strength of relationships within the communities served by the Family of Southern California Water Agencies is measured by a number of achievements, especially in conservation.

One way success can be measured is in the number of high-efficiency residential clothes washers installed in a year (33,000), or in the amount of state and federal conservation grants awarded to Metropolitan (more than \$7 million) or in actual water savings (112,300 acre-feet in 2005) directly attributed to Metropolitan’s rebates.

Interest in conserving water continues to remain high. A popular measuring tool - the number of “hits” to a Web site or hotline, proves this point. On average, 700 - 1,000 people a day visit the [bewaterwise.com](http://bewaterwise.com) Web site (depending on the timing of Metropolitan’s advertising campaign), and about 40 people a month

chat with a native plant expert from Rancho Santa Ana Botanic Garden on a Metropolitan-funded hotline.

To strengthen its conservation connection with Southern California, Metropolitan’s \$1 million City Makeover Program entered its second year. With partial funding from the U.S. Bureau of Reclamation, the program provided 21 grants to cities and other public entities to transform landscaped areas into examples of water-saving efficiency, good looks and sustainability.

There are many other markers for achievement detailed in this report. Some are on nursery shelves in the form of new lines of native and drought tolerant plants. Others are recorded by a well-attended, in-store giveaway of weather-based irrigation controllers and by this year’s attendance of more than 5,000 in Metropolitan’s Protector del Agua Training which has graduated more than 36,000 participants since the program’s inception.

Small businesses benefited from the inauguration of the Regional Commercial, Industrial and Institutional Rebate Program (CII Program). The first year of a five-year, \$20 million contract with a vendor to provide rebates, management and marketing services for the CII Program brought the development of a Web-based rebate application and program information on [bewaterwise.com](http://bewaterwise.com).

Metropolitan’s landscape incentives programs continue to provide small business and larger commercial entities numerous ways to improve their irrigation efficiency, including the adoption of new smart controller technology.

# Executive Summary



Building Partners with Metropolitan: (left to right): Don Mull, president, California Green Builder; Robert Rivinius, CEO, California Building Industry Association; Richard Lambros, CEO, Building Industry Association of Southern California; Bobbi Becker, interim vice president, External Affairs MWD; Greg Ray, vice president, landscape architecture, Pardee Homes.

## Home Builders and Developers

Builders and developers played a big role in the promotion of water-wise lifestyle choices through participation in the California Friendly™ Home Program. This year, seven of the region's most prominent builders joined Metropolitan and its member agencies to showcase water-efficient landscape choices and water-saving appliances in both model homes and homes offered for sale. More than 400 new homes will feature California Friendly™ landscapes, and more than 100 California Friendly™ model homes will be open by December 2006.

Momentum from the California Friendly™ Home Program drew some noteworthy interest. The state-wide California Green Builder Program, sponsored by the California Building Industry Association, agreed to adopt Metropolitan's California Friendly™ model home standards. Homebuilders participating in the program install the latest water-saving devices and practices to save a minimum of 20,000 gallons per year per home.

## Investment in Local Reliability

Metropolitan's Local Resources Program (LRP), a partnership with Metropolitan's member and retail agencies for more than 23 years, has provided financial incentives amounting to more than \$186 million to develop recycled water and recover groundwater.

In 2005, Metropolitan contributed \$14 million to recycled water projects that produced 73,000 acre-feet in fiscal year 2005. Local agencies produced an additional 127,000 acre-feet of recycled water without financial assistance from Metropolitan. In 2005, Metropolitan executed agreements for 10 new Local Resource Program projects to develop an additional 57,000 acre-feet of recycled water production. In all,

# Executive Summary

Metropolitan has funding agreements for 59 member agency projects; 44 of which are currently in operation.

The influx of \$45 million from Proposition 13 continues to finance additional groundwater storage programs in Metropolitan's service area. Eight contracts with member agencies to store water in their groundwater basins will provide a total of 194,000 acre-feet for dry-year needs in Southern California. The total amount of storage capacity provided by Metropolitan's conjunctive use agreements is more than 400,000 acre-feet.

Metropolitan continues its partnerships to develop seawater desalination with five member agencies - the cities of Los Angeles and Long Beach, Municipal Water District of Orange County, San Diego County Water Authority and West Basin Municipal Water District. Collectively the projects are expected to produce about 142,000 acre-feet per year. Metropolitan has expanded its support of desalination efforts by entering into agreements with the member agencies to facilitate their seawater desalination research.

## Colorado River

While strengthening water reliability at home, Metropolitan drew on its network of relationships throughout the West as it remained actively engaged in the Colorado River Basin in 2005.

A long-term partnership with the federal government ended in a win for Southern California water supply safety when the decision was made this year to move a pile of uranium tailings near Moab, Utah that threatened downstream Colorado River water quality.

Another long-term project came to be in February 2005 after more than eight years of study and negotiation. Metropolitan became the first to sign onto a 50-year multi-species habitat conservation program for the Lower Colorado River, committing \$88.5 mil-

lion to protect river water and power operations from interruptions due to impacts on 27 species. Approved in accordance with the federal Endangered Species Act, the program is considered one of the nation's largest habitat conservation programs and represents the work of the U.S. Bureau of Reclamation and U.S. Fish and Wildlife Service among other federal agencies; water, power and wildlife agencies in Arizona, California and Nevada; Native American tribes as well as environmental and recreational interests.

Metropolitan worked with other states dependent on the Colorado River to advise the Department of the Interior in its development of shortage guidelines for the Lower Colorado River. The states sought solutions that would delay or prevent the imposition of future shortages under low storage and runoff conditions like those experienced in recent years. Also, new storage and transfer contracts called for under the 2003 Quantification Settlement Agreement continued to be executed, which will provide increasing amounts of water to Metropolitan each year.

Farming communities continued to work in partnership with Metropolitan in a model that typifies a symbiotic relationship: one that is mutually beneficial for both partners. A landmark 35-year agreement with the Palo Verde Irrigation District began implementation in January 2005. It will help to stabilize the Palo Verde economy and provide up to 111,000 acre-feet of water per year to Metropolitan's service area. This exchange is accomplished through a land management, crop rotation and water supply program, which leaves between 71 and 93 percent of farm acreage in production and frees water for urban storage or use.

Another successful agricultural partnership involves a water transfer program underway between Imperial Irrigation District and the San Diego County Water Authority. This 45-year agreement, which allows transfers through agricultural conservation efforts,

saw its first transfer in late 2003. After 2015, water transfers are expected to reach 200,000 acre-feet per year.

## State Partnership

Metropolitan's relationships with other agricultural interests, namely those in the San Joaquin and Sacramento valleys, have produced several significant transfer programs, which offer dry-year reserves in storage. Currently, 417,000 acre-feet of dry-year water supplies have been developed from these Central Valley storage and transfer programs.

In 2005, Metropolitan joined with other stakeholders to work towards an implementation plan for the CALFED Ecosystem Restoration Program and water supply and quality projects. This effort comes on the heels of the fall 2004 passage of the \$389 million CALFED authorization bill. CALFED is responsible for the restoration and improvement of the Bay-Delta, a delicate infrastructure that is a major source of water for Southern California.

Metropolitan and other interests supported development of the South Delta Improvements Program (SDIP) that allows for more flexible pumping capability for the State Water Project (SWP) and facilitates the ability to deliver water when it is environmentally safe to do so. The work group for this program is a broad-based coalition of cities, suburbs and farmers that are continuing the work of an equally diverse coalition of interests that supported the 2000 Record of Decision (ROD). The ROD set forth a 30-year plan to address ecosystem health and water supply reliability problems in the Bay-Delta.

Metropolitan also pledged its support for cooperative, multi-agency efforts to grapple with vital Bay-Delta issues, such as research that might lead to improvements in the Delta fishery, or a comprehensive plan for protecting Delta levees.

# Executive Summary



Ozone facilities at the Joseph P. Jensen Water Treatment Plant in the northern San Fernando Valley were the second to come on-line in a program that will replace the traditional disinfection treatment process at all five of Metropolitan's water treatment facilities with ozone treatment.

## The Water Quality Relationship

Advancements also continued on the water quality front in 2005, as Metropolitan employees worked closely with member agencies to ensure a seamless transition to a new water treatment system.

A \$750 million commitment to replace chlorine with ozone as the primary disinfectant for treating water went from plan to operation for the second of Metropolitan's five water treatment plants. Ozone is considered to be a more effective disinfectant and has also been found to improve water's taste and smell. The Joseph P. Jensen Water Treatment Plant followed on the heels of the Henry J. Mills Water Treatment Plant in completing the retrofit. Teams from both plants of operators, water quality experts, engineers, mechanics, electricians and controls system technicians met and trained together to facilitate a smooth transition.

## Conclusion

Metropolitan's quest to plan, grow and develop new relationships complements an integrated, diverse water reliability strategy. This approach recognizes that no one source of supply or partnership will sustain the region in the face of uncertainty. If we continue to make concerted efforts to connect, coordinate and prepare for natural disasters and other unforeseen events, we will be able to maintain water supply reliability.

# Executive Summary

<b>Metropolitan's 2005 Achievements Scorecard</b>	
<b>Metropolitan-Assisted Local Resources</b>	
<p><b>Active Conservation:</b>            112,300 AF FY 2005 Production            \$12 Million FY 2005 Conservation Credits Investment            \$21 Million Total FY 2005 Investment            827,145 AF Cumulative Production            \$234 Million Cumulative Investment</p>	<p>Active conservation is water saved directly as a result of conservation programs funded by Metropolitan and other water agencies, and includes device retrofits, process improvements, landscape efficiency improvements and other efficiency measures utilized in commercial, industrial and residential sectors. Additional water is conserved as a result of plumbing codes and other laws governing appliances and other products' efficiency standards.</p>
<p><b>Water Recycling:</b>            73,000 AF FY 2005 Production            \$14 Million FY 2005 Investment            746,000 AF Cumulative Production            \$138 Million Cumulative Investment</p>	<p>Metropolitan provides financial incentives to its member agencies to develop and operate new recycling projects through its Local Resources Program (LRP). Metropolitan's LRP began in 1982 (originally called the Local Projects Program).</p>
<p><b>Groundwater Recovery:</b>            41,000 AF FY 2005 Production            \$7 Million FY 2005 Investment            280,000 AF Cumulative Production            \$49 Million Cumulative Investment</p>	<p>Metropolitan also provides financial incentives to its member agencies to develop and operate new projects that make degraded groundwater potable through its LRP. Metropolitan began helping to fund these projects in 1991.</p>
<b>Metropolitan-Assisted Groundwater Programs</b>	
<p><b>Contractual Storage:</b>            \$37.5 Million Cumulative Investment Through 2005            \$64.3 Million Metropolitan Funds Earmarked for Programs            \$45 Million Prop. 13 Grant Funds Administered by Metropolitan</p>	<p>Proposition 13 refers to Chapter 9 of the Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act of 2000.</p>
<p><b>Water Rate Incentives:</b>            \$334 Million Cumulative Investment Through 2005</p>	<p>Water Rate Incentives represent the discount in water rates Metropolitan provides to its member agencies to encourage groundwater storage</p>
<p><b>Conjunctive Use Storage &amp; Replenishment</b>            December 2005 Delivery Storage: 303,150 AF</p>	<p>AF = acre-feet. An acre-foot is equal to 325,851 gallons, or enough water to supply the needs of two typical Southland families in and outside their homes for one year.</p>

# Conservation



“The Secret Garden at The Preserve,” by John Laing Homes, features the work of one of five builders that participated in the California Friendly Model Home Program in Lewis Group’s “The Preserve at Chino,” a master-planned community in the Inland Empire.

**M**etropolitan’s conservation programs are designed to reduce the demands on its imported water supplies. The guiding objectives are found in two documents. One is Metropolitan’s Integrated Resources Plan. The other is the California Urban Water Conservation Council’s Memorandum of Understanding Regarding Urban Water Conservation in California, to which Metropolitan is a signatory. The Council adopted minor technical amendments to the MOU in March 2005.

Metropolitan is committed to providing effective water conservation programs and services, having invested more than \$234 million in fixture retrofits and related activities in the past 10 years. To maintain program effectiveness, these efforts are shifting away from accelerating the replacement of older toilets with more water-efficient fixtures and focusing more on identifying and implementing new opportunities for reducing water demand such as “smart timer” irrigation controllers and cutting edge technologies in commercial kitchens. Nonetheless, having evaluated the revised targets in its 2004 Integrated Resources Plan Update, Metropolitan remains on track to meet the increased regional commitment to reduce demand for all water sources, especially imported supplies.

Metropolitan continues improving its demand management programs in a number of areas:

- Establishing a collaborative, 5-year conservation strategy with our member agencies to advance long-term goals
- Working on legislation to solidify existing efficiency gains and foster new opportunities
- Pursuing new partnerships to leverage existing and future conservation programs
- Evaluating new devices and technology for their potential to increase water-use efficiency

- Developing a new advertising campaign and other means to reach underserved markets
- Working with builders and others to design resource efficiency into new construction
- Seeking out opportunities for additional grant funding

We are engaged in ongoing programs with the homebuilding/development community, the state Energy Commission, retailers like Home Depot and Armstrong Garden Centers and our member public water agencies that serve the final end-use customers. We continue to explore common interest opportunities with sanitation districts, storm water agencies, energy utilities, and others.

## Strategic Initiatives

In 2005, Metropolitan saw significant advances in its award-winning water conservation programs. The core program saves water needed to ensure long-term regional supply reliability and to comply with California's best management practices for urban water conservation. Advances include:

1. **Strategic Plan:** An evolving five-year conservation plan to meet long-range IRP goals with effective near-term implementation steps.
2. **Core Conservation:** An appreciable increase in Metropolitan's conservation incentive from \$154 to \$195 per acre-foot saved to promote conservation retrofits and other efficiency actions; this also increased the incentive upper limit from one-half to the full cost of a retrofit device.
3. **Enhanced Conservation:** This new \$2 million per year competitive program pilot tests devices and approaches to improve public response. Incentives up to \$250 per acre-foot of water saved are available.

4. **Innovative Conservation:** An affirmation of this progressive approach in evaluating emerging water saving technologies. Grants of \$125,000 per year are made available to public and private innovators.
5. **Improved Data Management and Market Research:** Refinement of the existing end-user information to better identify needs, barriers and opportunities.
6. **New Legislation and Higher Efficiency Standards:** Voluntary and legislated product standards designed to achieve widespread efficiency measures. Metropolitan adopted product reliability standards for its toilet retrofit incentive programs to ensure sustained savings and customer satisfaction.
7. **California Friendly™:** Metropolitan's label that identifies reliable water saving homes, devices and practices is taking root with Southern California builders and landscapers.

For some fixtures or devices to remain eligible for Metropolitan funding, they must meet higher efficiency standards than are currently in place. Ultra-Low-Flow-Toilets (ULFTs) and High-Efficiency Clothes Washers (HECWs) must now be certified as meeting a supplemental performance specification.

New water-efficient devices, previously under review, were added to the list of approved devices receiving Metropolitan incentives. The new devices are:

- **High-Efficiency Toilets (HETs):** These fixtures, dual-flush or other designs use less than 1.3 gallons per flush, as opposed to the current standard of 1.6 gallons per flush.
- **High-Efficiency Urinals (HEUs):** These fixtures use less than 0.5 gallon per flush, as opposed to the current standard of 1.0 gallon per flush. This category also includes non-water-using fixtures.

- **pH Cooling Tower Conductivity Controllers:** This method of cooling tower operation has been shown to save significant amounts of water.
- **"Connectionless" Food Steamers:** Small and medium-sized restaurants can use this style steamer to save water and energy.

## Residential Programs

The most significant regional demand-side management success story has been the replacement of 2.5 million older toilets with more efficient ULFTs. A number of our member agencies are planning to ramp down their toilet retrofit incentive programs because there are very few older toilets left in need of replacement in their service areas. As toilet fixture efficiency continues to advance, Metropolitan will phase in higher performance standards and limit incentives to only the most efficient models available on the market.

In a 14-month period, Metropolitan expended \$2.5 million in grant funding to provide incentives for 33,000 new HECW purchases. The grant funds allowed Metropolitan's member agencies to offer an increased incentive amount. Starting July 1, 2005, Metropolitan rebates were limited to qualifying HECW models with a Water Factor of 6 or less. The term Water Factor (WF) refers to the gallons of water used per cubic foot of washer capacity. This is the same standard that is set to go into effect in 2010 in California.

In the spirit of increased efficiency, the Residential Survey program was redesigned for ease of format and administration.

# Conservation



Republic Master Chefs, a major commercial laundry in Los Angeles, installed nearly \$400,000 of new equipment and systems that will save up to 16.5 million gallons of water per year. The company participated in Metropolitan's Industrial Process Improvement Program which provides financial incentives for new water-saving improvements.

## Landscape Programs

Throughout Metropolitan's service area, the large majority of residential and commercial landscaping is watered early in the morning by sprinkler systems that are operated automatically by an irrigation controller, often one that is a clock with simple on/off time settings. By the time the homeowner goes outside or office staff arrive at work, the previously flooded streets and hardscape are now completely dry. Without telltale evidence, this significant and continuous waste of water goes unnoticed. Getting people to correct a problem they're unaware of makes marketing landscape efficiency programs a tough sell.

## Program Revisions

Metropolitan continues exploring ways to increase small business and large commercial site participation in landscape efficiency incentive programs. Marketing and outreach efforts continue to be developed to improve market penetration among potential beneficiaries of the landscape program.

To improve customer access to rebates for weather-based irrigation controllers ("Smart Controllers") they are now marketed and administered by the Region-wide Commercial, Industrial and Institutional Program vendor, simplifying program administration.

Other revised program elements include:

- Incentives based on a monthly irrigation water budget specified by the retail water provider
- Incentives based on the measured difference in outdoor water use subsequent to sprinkler system upgrades or new equipment installation
- Technical guidance provided to participants in either incentive program, and support via Metropolitan-sponsored Professional Protector del Agua training classes

## CIMIS Station Support

Metropolitan continues to fund the maintenance of nine California Irrigation Management Information Systems (CIMIS) stations. These weather stations provide real-time information to improve irrigation efficiency in more urbanized areas. Data from these specialized weather stations is used to calculate the watering index that Metropolitan posts on its Web site. The system can also be used for real-time weather input to Smart Controllers that automatically adjust the amount of applied water based on a variety of weather and plant material factors.

## Synthetic Turf Pilot

With the help of a grant from the U.S. Bureau of Reclamation, Metropolitan solicited proposals that sought to replace natural grass with a new generation of manufactured synthetic turfs. Twelve projects were accepted and received funding. One of Metropolitan's interests in this pilot is to analyze the long-term water savings potential and product lifespan compared to natural grass athletic fields.

## Commercial, Industrial and Institutional Programs

In the 1990s, Metropolitan analyzed on-site water use at over 900 businesses and institutions and found certain measures were recommended repetitively - toilet retrofits, irrigation efficiency tune-ups, adjusting cooling tower operations, and installation of simple controls that stop water flow when it is not needed.

To address this niche of water saving opportunities, Metropolitan developed a menu with incentive amounts for each of the recommended devices. A vendor was hired to establish an 800 number as a single point of contact for the public and to manage all regional inquiries, requests for applications, rebate processing, installation verification, and marketing.

## Regionwide Commercial, Industrial and Institutional Rebate Program

With a vendor, Metropolitan ran the Regionwide CII Program as a three-year pilot. Marketing the program as "Save Water, Save a Buck" - the pilot was very well received. In late 2004, Metropolitan entered into a five-year, \$20 million contract to continue to provide regional management and marketing services for the Regionwide CII Program. Administration was further streamlined by entering into 10-year agreements with our member agencies, providing continuity of program management.

As part of a larger marketing strategy, two key CII events occurred in 2005, 1) the development of a Web-based rebate application and program information page on [bewaterwise.com](http://bewaterwise.com), and 2) the first participant recognition and award event at Dodger Stadium. Additionally, the California Municipal Utilities Association honored the "Save Water, Save a Buck" program with the 2005 CMUA Award for Community Service/Resource Efficiency - Best Management Practices for a Large Utility. Prospective customers can learn about the program by calling 1-877-SAV A BUC (728-2282).

## Industrial Process Improvement Incentives

In 2004, this program was streamlined to make it more responsive to the needs of business participants. Metropolitan has renewed its outreach efforts to the industrial sector and has added two new industrial facilities participants, with more expected to follow. Two facilities remain active participants under the original program rules.

## Innovative Conservation Program

Metropolitan is often asked to review new water-efficiency products or ideas by both individuals and large manufacturers. Without a formal review process, these requests cannot be accommodated. To

stay current with the latest technology ideas in the marketplace, Metropolitan introduced the Innovative Conservation Program (ICP).

The first Request for Proposals was in 2001, with 10 projects receiving funding. This resulted in Metropolitan adding three new devices to its incentive programs. The second round of the ICP provided funding for another 10 projects with results expected in 2006. In December 2005, the board reauthorized this program for future funding.

## Innovative Supply Program

Like the ICP, the Innovative Supply Program (ISP) was created to review the myriad ideas that are suggested to Metropolitan. In 2004, Metropolitan selected 10 proposals for new water sources that hold potential benefits for Southern California. Two themes emerged in the project selections: better utilization of storm water runoff for groundwater recharge and new approaches for recycled water using on-site, localized treatment. The two-year project cycle is nearly complete and the results will be reported to the board in 2006.

## Revised Annexation Criteria

Member Agencies requesting to annex new land into Metropolitan's service area must comply with stringent new conditions for approval. The requirements mandate that member agencies address water stewardship throughout the annexing agencies' service area. The new requirements follow:

- All retail and wholesale water agencies within the member agency applying for annexation must be members in good standing of the California Urban Water Conservation Council (CUWCC).

# Conservation



At a one-day event sponsored by Metropolitan and the Los Angeles Department of Water and Power, qualifying residents were given the opportunity to swap their current sprinkler controllers for a new “smart” controller which uses a solar sensor to give landscapes just the right amount of water to maintain lush, healthy growing conditions and minimize the need for human intervention.

- The member agency has to be implementing all appropriate water utility Best Management Practices, as defined at the time by the CUWCC, throughout its entire service area, not just the proposed area under consideration for annexation.
- Annual reports by the member agency are required for the first six years after annexation.

## California Friendly™ Programs

In 2005, Metropolitan Water District and the Family of Southern California Water Agencies introduced a strategy in which particular conservation activities are branded “California Friendly™.”

This strategy aids in the promotion of water conservation by identifying products, programs and organizations, out of the many available in the marketplace, that use water wisely, thus contributing to our state’s improved ecology and standard of living. The California Friendly™ brand aims to make it second nature for Southern Californians to select products and services that will help the state through wise water usage and conservation.

## California Friendly™ Landscapes

With the U.S. Bureau of Reclamation and Eastern Municipal Water District as partners, and in collaboration with the Building Industry Association of Southern California and local authorities, Metropolitan established “green building” guidelines for landscapes in new homes. California Friendly™ landscapes are designed with regionally appropriate plants and state-of-the-art irrigation systems. Water use can be up to 50 percent less than conventionally designed landscapes. KB Home, Shea Homes and John Laing Homes adopted Metropolitan’s landscape program specifications in approximately 400 new single-family homes. For more information about these projects, visit <http://www.bewaterwise.com/homeo1.html>.

## California Friendly™ Model Homes

Shortly after the pilot landscape program was introduced, Metropolitan and its partners expanded the California Friendly™ concept to include efficiency standards for water-using devices inside the home. This program expansion applies to model homes in new development tracts throughout Metropolitan's service area. The model homes expose new home buyers to the latest water-efficient appliances and designs. A California Friendly™ Home is expected to use one-third less water than conventionally built homes.

## California Friendly™ New Construction

Discussions are under way with builders to make the latest water-efficient devices standard in all new home construction. Metropolitan's board previously authorized the use of financial incentives for dual-flush toilets, high-efficiency clothes washers and Smart Controllers in new homes. Because all of these devices exceed current building code standards, water savings will be realized as soon as the home is occupied.

The California Friendly™ program is also being expanded to include multi-family residential properties. Metropolitan received a Proposition 50 grant from the California Department of Water Resources to facilitate this expansion in 2006.

## Protector del Agua (PDA) Training

Metropolitan's residential Protector del Agua program continues to develop ways to reach a wider audience. The beginning of a process to convert the entire series to Web-based training courses began in 2005. This will allow wider access to information about basic landscape design, plant identification, irrigation, watering and fertilizing. Metropolitan has successfully obtained grants to facilitate this effort. In addition, the curriculum was updated and

instructor guidebooks developed. In a pilot effort to link training with technology, select residential class participants received free Smart Controllers for their homes.

The Professional PDA series continues to focus on landscape maintenance personnel and is taught in both English and Spanish. The series was condensed into four core classes and a plant class and is now being integrated into the recently revised landscape incentive program, with funding provided by Metropolitan or member agencies.

In 2005, participants in all PDA programs topped 5,000, bringing the total number of graduates since the program's inception to more than 36,000 through fiscal year 2005.

## Retail Partnerships

Metropolitan works with retailers to encourage the inclusion of California Friendly™ and native plants in their product mix. Landscape design and irrigation training is provided to retail staff and at in-store workshops for the public. Partnering opportunities include collaborative advertising programs, in-store giveaways, and distribution of conservation related materials provided by Metropolitan.

## City Makeover Program

The City Makeover Program is part of a larger effort by Metropolitan to foster the appreciation of California native and drought-tolerant plants and efficient irrigation techniques in public, commercial and residential landscapes.

Understanding that seeing is often believing, Metropolitan began offering grants in 2003 to encourage cities, public agencies and non-profit or community-based organizations to trade their traditional, water-thirsty landscapes for something more Califor-

nia Friendly™ in an effort to show homeowners that these types of landscapes can be beautiful and water efficient.

Here is a highlight of City Makeover activities for 2005

- Total budget: \$1 million, including \$100,000 from the U.S. Bureau of Reclamation
- 75 entries received
- A panel of experts including horticulturalists, water conservation specialists, landscape maintenance professionals and landscape architects judged each entry
- 21 City Makeover grants awarded

With this program, Metropolitan seeks to continue funding landscape projects that create environmental, educational and social value for the community through site selection, use of appropriate plant palette, sustainable landscape design, and efficient irrigation techniques. Inclusion of a public awareness and education component is critical and partnerships between governmental agencies and non-profit organizations are strongly encouraged.

## Marketing and Advertising

Education efforts under the California Friendly™ umbrella included the bewaterwise.com Web site, which attracted between 700 and 1,000 unique visitors per day. Innovations in 2005 included the launch of an online training course that provided a self-guided Web tutorial with the basics of design, soil, water usage and more. Bewaterwise.com has become a repository for all conservation-related information and Metropolitan programs. It serves as the centerpiece of the conservation outreach effort and is continually being updated and expanded to include the most current information for both residential and business customers.

# Conservation



Reintroducing California native and drought-tolerant plants as long-time, beautiful and water-thrifty residents, was the first step in an awareness program packaged under the umbrella of California Friendly™ which promotes water-wise choices in and around the home and businesses.

Metropolitan spent \$1.6 million for radio, online, print and billboard advertising between February and June 2005. The messages: Use California Friendly™ plants, and stop overwatering. This was coupled with a smaller campaign introducing the California Friendly™ home.

Advertisements appeared on 30 radio stations. Five billboards in the Inland Empire carried such slogans as “There’s no place like home, particularly a California Friendly™ one.” Five daily newspapers and real estate trade journals carried advertisements with taglines like: “Your car is fine. It’s your house and yard that need the tune-up.”

An Expert Hotline was launched to provide the public with one-on-one technical information about native plant care and maintenance. Funded by Metropolitan, native plant experts from Rancho Santa Ana Botanic Garden answered questions and provided resources for homeowners, landscape architects and maintenance professionals and others. In addition to developing educational materials for bewaterwise.com, these Metropolitan-funded experts handled 418 inquiries from the public, and made 63 public presentations on waterwise landscaping.

## Consumer Research

During fall 2005, Metropolitan also conducted consumer research among Southern California homeowners about water usage, awareness of outreach efforts and barriers to water use reduction. This included a phone survey of 500 Southern California homeowners with automatic sprinkler systems and personal interviews at garden centers.

## Education Programs

During 2005, Metropolitan and its member agencies reinforced their conservation message by making education materials, activities and events available to more than 83,360 K-12 students and 1,340 new program teachers throughout the service area. Key curriculum programs included All About Water (grades K-3), Admiral Splash (grade 4), Water Ways (grade 5), Water Times (grade 6), Water Quality (grades 7-12), Water Politics (grades 9-12) and Water Works (grades 6-12). Some of the year's highlights follow.

### Water Times

Metropolitan's newest curriculum supplement was honored with a 2005 PRISM "Award of Excellence" from the Public Relations Society of America (Los Angeles Chapter) as an outstanding public education program. This interdisciplinary newspaper format for the sixth-grade integrates water-related articles and stories from ancient Mesopotamia and science discoveries of Western Europe in the 1880s, among others. It also has a section entitled "Casa de Agua," a module that emphasizes water conservation choices and activities in and around the home, especially outdoors.

### World Water Forum

Metropolitan continued its dynamic Southern California World Water Forum College Grant program. This competitive grant program for community colleges and four-year colleges and universities awarded \$120,000 in grants for research and development of water-use efficiency technologies that can be implemented cost-effectively in water-stressed regions, locally or globally. Twelve teams from eight area institutions were awarded grants. Their projects will be completed in late January 2006. The selected schools and their projects are listed below:

- University of California, Riverside  
Algae Pond Treatment of Agricultural Run-Off
- University of Southern California  
New Showerhead Design with Touch Activated On/Off Switch
- University of Redlands  
Native Landscape Choices of Redlands
- University of California, Riverside  
Rooftop Rainwater Harvesting
- California State University, Long Beach  
Conservation of Irrigation Water by Onsite Recycling
- California State University, Long Beach  
Integrating Marginal Cost Water Pricing and BMP
- Loyola Marymount University  
Economical Dual Flush Retrofit Kit
- Pasadena City College  
Bio-Filtration of Household Greywater: An Ecological Approach
- California Polytechnic University, Pomona  
Water Efficient Landscapes
- University of Southern California  
Pollutant Removal and Economic Evaluation of Catch-Basin Devices
- Los Angeles City College  
Water Conservation Through Elementary Education
- University of Southern California  
Benefits of Water Well Rehabilitation

Metropolitan's Water Forum partners include the United Nations, the U.S. Bureau of Reclamation, the County Sanitation Districts of Los Angeles and other major federal, state, county and engineering groups.

## Solar Cup 2005

Metropolitan's highly successful Solar Cup 2005 solar boat competition program increased in size from 22 to 29 high school teams sponsored by 10 member agencies. The roster for 2006 has grown to 40 teams. Once again, student teams constructed solar-powered boats and then competed in endurance and sprint races at Metropolitan's Lake Skinner, showcasing environmentally-friendly technology that is crucial in addressing drinking water reservoir water quality issues. Each team is now required to create a visual display emphasizing how solar energy could be applied to local or global water issues, including conservation. In 2006, the focus will be entirely on water conservation technologies. The event attracted over 3,000 school, family and public attendees, along with extensive local newspaper coverage and national media exposure, including some key morning television news programs.

## Inspection Trips

In 2005, Metropolitan helped more than 2,670 community members learn about conservation, water recycling and sensible water management as they inspected parts of the Colorado River Aqueduct, the State Water Project, northern Sacramento River Valley water projects, agricultural centers and Diamond Valley Lake, among other locations. Beginning in 2005, a number of the Southern California-based trips provided visits to new home developments featuring California Friendly™ landscaping, emphasizing outdoor conservation along with indoor conservation technologies. These one- to three-day trips sponsored by individual members of Metropolitan's board of directors featured local water conservation projects, as well as water policy collaborations between other water and stakeholder agencies and Metropolitan. These trips with community, education, business, environmental and legislative leaders and decision-

# Conservation



Two of 50 winning artworks are pictured here in a public display of drawings selected in the annual “Water is Life” poster contest for public and private schools co-sponsored by Metropolitan’s member agencies and retail water agencies through the region. Pictured here are Allison Cheung, a third-grader from Fairmont Private School in Anaheim and Tiffany Shu, a third-grader from Nohl Canyon Elementary School in Orange.

makers are a critical tool for teaching service area constituencies about their individual responsibility in ensuring a reliable, sustainable water supply, and understanding how those local supplies can be impacted by events hundreds of miles away.

## Grant Funding

To enhance its efforts, Metropolitan applies for funding from federal agencies, statewide bond propositions, and collaborations with other utility programs whenever possible. See the Grant Funding table for information on the grants recently received in support of conservation programs.

## Legislation

Metropolitan takes an active role in proposing new legislation, reviewing draft bills and working with legislators to craft clear and effective laws. Previously, these efforts produced a more strict clothes washer efficiency standard set to take effect in California in 2007. Normally, federal standards would supersede state standards. Since the state’s standard exceeds the federal in this case, the California Energy Commission has submitted a request for a federal waiver to allow the state standard to remain. Metropolitan’s incentives support washers that meet either the state or federal standards.

A new California efficiency standard for pre-rinse spray valves will also take effect in 2007 requiring all units to operate at 1.6 gallons per minute. This was partly the result of the very successful direct-install Rinse & Save program that benefited restaurants in Metropolitan’s service area.

## Participation in AB 2717 Landscape Revision Task Force

In 1990, state Assembly Bill 325 established a state-wide model Landscape Ordinance, effective January 1, 1993. Consistent implementation and the hoped-for improvement in outdoor water-use efficiency did not meet expectations. As a result, AB 2717 (Laird) was passed in 2004, requiring that various stakeholders convene a task force to recommend improvements to the existing approach. A report on the task force's findings was delivered to the governor in December

2005. Metropolitan actively participated in the report development. Metropolitan staffed all four working units and held a seat on the main task force body.

Grant Funding Awarded to Metropolitan				
Grant Funding Source	Project	Amount	Project Description	Status
CA Prop 13 (2000)	HECW Rebates	\$2.5 Million	Increase incentive on over 33,000 residential HECWs, (savings approximately 173 M gals/yr).	Completed
"	"Smart Timer" irrigation controller distribution	\$1.8 Million	Install 5,500 controllers in homes and businesses. "Smart Timers" adjust the application of water according to current weather.	In progress
CA PUC (2004)w/ CUWCC	Pre-Rinse Spray Valve Direct Install Phase 2	\$2.2 Million	Teams canvass restaurants, installing devices on the spot. 17,000 installations in MWD's service area	Concluded December 2005
USBR (2003)	CA Friendly Model Homes	\$182,000	California Friendly™ model homes in new developments - landscaping only	In Progress
USBR (2004)	CA Friendly Model homes	\$80,000	California Friendly™ model homes - interior fixtures and landscaping	In Progress
"	Synthetic Turf Pilot	\$220,000	12 sites selected for pilot evaluation of ongoing upkeep	In Progress
"	World Water Forum Academic grants	\$50,000	Awarded 12 grants ranging from \$8.5 - \$10 thousand to 8 different colleges to test their water efficiency ideas	In Progress
USBR (2005)	Web-based Protector del Agua (PDA)	\$50,000	Rework 3 class curriculums into Web-based learning sessions: 1 residential, 2 professional	In Progress
"	Analyze Landscape irrigation market	\$50,000	Survey distribution and type of in-place irrigation systems	In Progress
"	City Makeover	\$50,000	Install efficient landscapes in high-traffic public areas	In Progress
Water for the West	Web-based Protector del Agua (PDA)	\$25,000	Rework 2 residential classes - California Friendly™ Plant selection and Plant Care - into Web-based sessions	In Progress
CA Prop 50 (2002)	Residential HECW rebates	\$1.66 Million	Increase the value of available rebates	In Progress
"	CA Friendly Communities	\$423,000	California Friendly™ landscaping for multi-family residences	In Progress
"	High-Efficiency Toilet (HET) rebates	\$1,000,000	Increased rebates for fixtures that flush < 1.3 gallons	In Progress
"	Web-based Protector del Agua (PDA)	\$77,500	Rework 3 classes - 2 professional, 1 residential - into Web-based sessions	In Progress

# Water Recycling and Groundwater Recovery



Part of the treatment process for recycled water is shown here at the West Basin Water Recycling Plant. Metropolitan has 59 agreements with its member agencies to produce recycled water.

**W**ater recycling, groundwater recovery, and seawater desalination are resources that add balance to the region's diverse portfolio of resource options. Much of the region's recycling is primarily developed by local water agencies, but a number of newer projects have been developed with incentives from Metropolitan's LRP.

## **Water Recycling: A Valuable Source of Supply**

Local water agencies have long appreciated the value of recycled water as a source of supply. Metropolitan has supported the development of this resource close to home for more than 24 years. The cumulative production of over 746,000 acre-feet of local recycled water has been developed by member agencies with Metropolitan's assistance. This supply was produced through a regional investment of \$138 million dollars to date. In fiscal year 2005, Metropolitan co-funded the production of approximately 73,000 acre-feet of recycled water for the region.

Metropolitan's current program funding design was adopted in 1998. Metropolitan periodically issues a Request for Proposals (RFP) to identify new projects that warrant MWD assistance. Member agencies submit their project proposals to Metropolitan, which then convenes a panel to review and rank the proposals. Only the most cost-effective recycled water and groundwater recovery project are selected for funding. Metropolitan's 2003 RFP led to eight new recycled water projects under contract in 2005, bringing the number of contracts signed under this RFP to ten.

Metropolitan has agreements with its member agencies and their subagencies for 59 water recycling projects; 44 were in operation in fiscal year 2005. Metropolitan's funding contribution was over \$14 million. Member agencies and other local agencies also

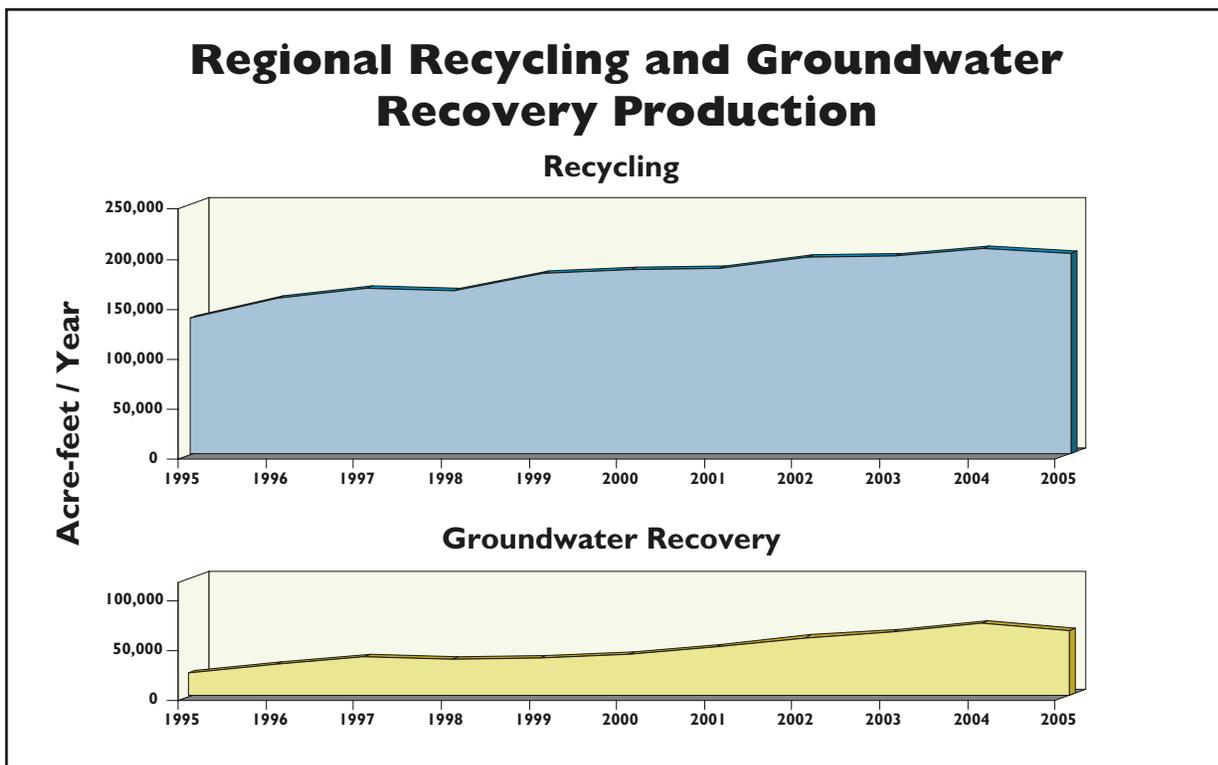
# Water Recycling and Groundwater Recovery

operated their projects without financial assistance from Metropolitan, producing an additional 127,000 acre-feet of recycled water.

## Groundwater Recovery: Enhancing Supply Diversity

In addition to water recycling, Metropolitan provides financial support for recovering groundwater that is not of potable quality but can be treated to meet the applicable standards for its intended purpose. In fiscal year 2005, Metropolitan contributed \$7 million for the recovery and treatment of 41,000 acre-feet from

18 member agency groundwater recovery projects. Cumulative Metropolitan contributions since the program's inception exceed \$49 million. Local water agency groundwater recovery projects not receiving financial assistance from Metropolitan produced another 25,000 acre-feet, bringing the regional total to 66,000 acre-feet for the year.



Recycling and Groundwater Recovery by the Numbers	
<b>1982</b>	Start of Metropolitan's Local Projects Program, now the Local Resources Program
<b>73,000</b>	Acre-feet of recycled water produced in FY 2005 with Metropolitan funding
<b>\$14 million</b>	Metropolitan's FY 2005 funding for recycled water projects
<b>\$138 million</b>	Metropolitan's 23-year investment in recycled water projects
<b>\$7 million</b>	Metropolitan's FY 2005 contribution to local groundwater recovery efforts
<b>\$49 million</b>	Metropolitan's cumulative groundwater recovery financial assistance to date
<b>66,000</b>	Acre-feet of poor quality groundwater recovered in the region in FY 2005

# Seawater Desalination



In a ceremony September 30, 2005 to launch the Long Beach Seawater Desalination Project, a group gathered representing the many different agencies involved in the groundbreaking project. Pictured left to right: Frank Clarke, Long Beach Water Commissioner; Lillian Kawasaki, Long Beach Water Commissioner; Michael Gabaldon, U.S. Bureau of Reclamation; Diem Vuong, Long Beach Desalination Consultant; John Morris, MWD; William Townsend, Long Beach Water Commissioner; Mary Nichols, Los Angeles Department of Water and Power Commissioner; Kevin Wattier, General Manager of Long Beach Water Department; Steve Conley, President of the Board, Long Beach Board of Water Commissioners; Helen Hansen, Long Beach Water Commissioner and MWD Director.

## Desalination by the Numbers

**Five**

*Number of proposals received*

**142,000**

*Number of acre-feet that could be produced by five proposed projects*

**\$250,000**

*Board contribution to be split among five member agency projects to conduct research leading to full project implementation including site assessment and feasibility studies*

**150,000**

*The current acre-foot goal for seawater desalination within Metropolitan's Local Resources planning target*

# Seawater Desalination

**M**etropolitan continues its support for the five member agencies that are developing their own seawater desalination projects - City of Los Angeles, City of Long Beach, Municipal Water District of Orange County, San Diego County Water Authority, and West Basin Municipal Water District. Collectively, these projects are projected to produce up to 142,000 acre-feet per year of high-quality water for local use. Metropolitan and the five member agencies have agreed on the finan-

cial incentive terms under which Metropolitan will support their projects when any or all of them begin production.

## Seawater Desalination Research

Metropolitan provides financial support for the five member agencies' seawater desalination research efforts. Metropolitan is also seeking federal funding to increase the financial commitment to the technology.

Completed LRP Project Contracts from 2003 RFP			
Project Title	Type	Location	Member Agency
City of Industry Regional Recycled Water Project	Recycled Water	City of Industry	Upper San Gabriel Valley MWD Three Valleys MWD
Direct Reuse Project Phase IIA	Recycled Water	Whittier Narrows	Upper San Gabriel Valley MWD
Groundwater Replenishment System Seawater Barrier Project	Recycled Water	Huntington Beach Fountain Valley	MWD Orange County
Hansen Area Water Recycling Project - Phase I	Recycled Water	Los Angeles - Hansen Area	Los Angeles DWP
IRWD Recycled Water System Upgrade Project	Recycled Water	Irvine	MWD Orange County
Pomona Well #37 Groundwater Treatment Project	Groundwater Recovery	Pomona	Three Valleys MWD
Decker Canyon Recycled Water Extension	Recycled Water	Calabasas	Las Virgenes MWD
Recycled Water Pipeline Reach 16 Project	Recycled Water	Hemet	Eastern MWD
Sepulveda Basin Water Recycling Project Phase IV	Recycled Water	Los Angeles - Sepulveda Basin	Los Angeles DWP
Tapo Canyon Water Treatment Plant	Groundwater Recovery	Simi Valley	Calleguas MWD

# Groundwater Conjunctive Use

Conjunctive use programs are an integral part of Metropolitan's resource planning strategy, the Integrated Resources Plan. Metropolitan's updated IRP targets development of 275,000 acre-feet of dry-year yield by 2010, and 300,000 acre-feet by 2020 for each of three consecutive dry years.

In 2000, Metropolitan's conjunctive use programs received a financial boost with funds from Proposition 13, which provided \$45 million to help finance projects in Metropolitan's service area.

## Existing and New Storage Agreements

In 1995, Metropolitan entered into an agreement with Calleguas Municipal Water District to develop facilities for storage and extraction in the North Las Posas Basin in Ventura County. This 210,000 acre-foot storage program is targeted for full operation in 2015.

In addition to the North Las Posas program, Metropolitan has utilized Proposition 13 funds to develop eight contractual groundwater storage programs with the following member agencies for use of their groundwater basins:

- Three Valleys Municipal Water District and the City of La Verne - Live Oak Basin
- Three Valleys Municipal Water District - Upper Claremont Heights Basin
- The City of Long Beach and Central Basin Municipal Water District - Central Basin
- The City of Long Beach - Central Basin
- Foothill Municipal Water District - Monkhill Sub-basin of the Raymond Basin
- Inland Empire Utilities Agency, Three Valleys MWD and the Watermaster - Chino Basin

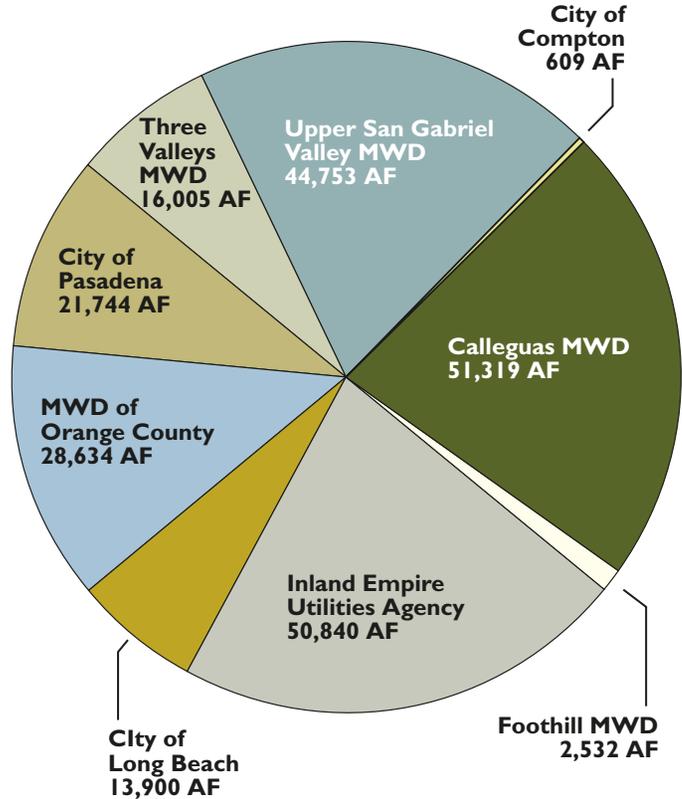
- Municipal Water District of Orange County and Orange County Water District - Orange County Basin
- The City of Compton - Central Basin

These eight agreements will provide a total of 194,000 acre-feet of storage for dry-year needs in Southern California. Some of these agreements also provide funding for treatment of contaminated groundwater, ensuring that stored water can be readily used. In the west San Gabriel Valley, Metropolitan is continuing to pursue a program in the Raymond Basin for up to 75,000 acre-feet of storage.

To date, Metropolitan has developed contractual conjunctive use programs with storage capacity for 404,000 acre-feet, enough to provide dry-year supplies of more than 112,000 acre-feet for each of three consecutive dry years. As of October 2005, more than 202,000 acre-feet of Metropolitan dry-year water had been stored in Southern California groundwater basins - 143,500 acre-feet in conjunctive use programs and the remainder in other storage accounts.

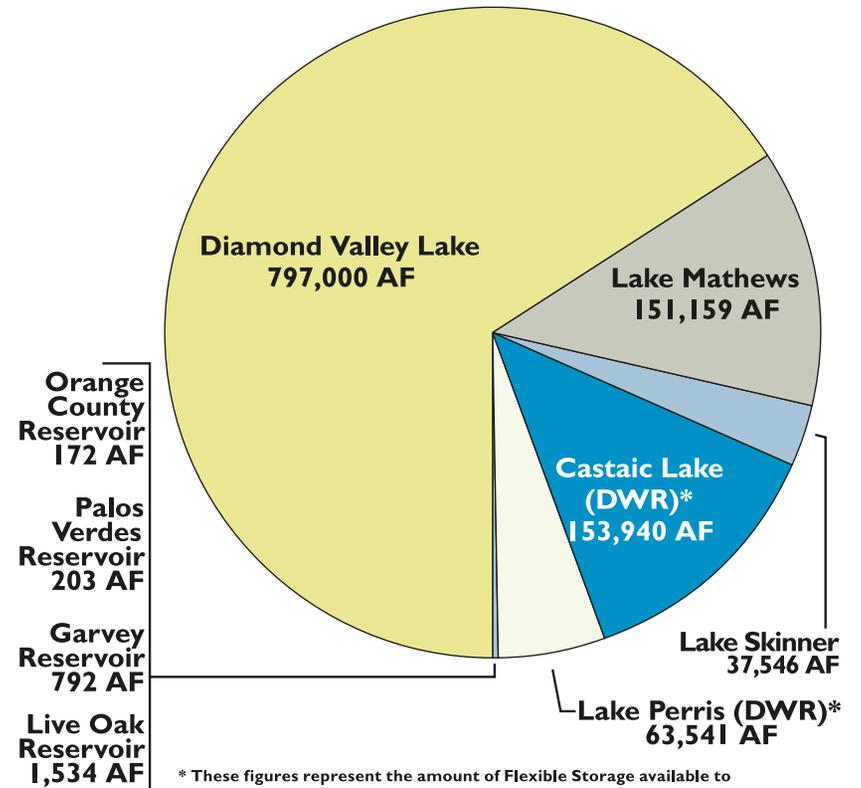
# In-region Metropolitan Storage

**Metropolitan Water Stored in Southern California Groundwater Basins**  
As Of December 2005



**NOTE:** Totals include conjunctive use and cyclic storage programs

**Metropolitan Water Stored in Metropolitan & DWR Reservoirs in Southern California**  
Total Storage : 1,205,887 AF  
(as of December 2005)



\* These figures represent the amount of Flexible Storage available to Metropolitan from these Department of Water Resources reservoirs, and are only a portion of each reservoir's total capacity. Previous reports included emergency storage.

# Colorado River Aqueduct Programs



Thanks to agricultural water conservation and transfer programs, as well as below-normal use by California's agriculture, Metropolitan's Colorado River supplies increased for the third year in a row.

**A**lthough significant rainfall eased conditions in the Colorado River Basin in 2005, the previous multi-year drought left system reservoir storage below 60 percent capacity. Metropolitan did not divert any surplus Colorado River supplies in 2005. Thanks to its agricultural water conservation and transfer programs, and below-normal use by California agriculture, Metropolitan's Colorado River supplies increased for the third year in a row. These programs were made possible by the execution of the Quantification Settlement Agreement in 2003.

## Quantification Settlement Agreement (QSA) Implementation

The year 2005 marked the second full year of implementation of the QSA, which was among several agreements executed in October 2003 by Metropolitan, the Imperial Irrigation District (IID), Coachella Valley Water District (CVWD) and the San Diego County Water Authority (SDCWA). The QSA quantified agricultural entitlements and established individual water budgets for IID and CVWD, facilitating transfers of Colorado River water from agriculture to Metropolitan's service area. The QSA facilitated a conservation-based water transfer from IID to SDCWA in 2003 that will eventually ramp up to 200,000 acre-feet per year. While the water is being purchased by SDCWA from IID, the transfer supplements regional water supplies, increasing water supply reliability for the whole region.

In addition to Metropolitan's basic apportionment of 550,000 acre-feet in 2005, Metropolitan received nearly 82,000 acre-feet of water from its longstanding conservation program with IID and 30,000 acre-feet of IID conserved water for exchange with SDCWA. In addition, Metropolitan also received about 140,000 acre-feet of water that was approved for use, but not needed by agricultural agencies in 2005.

# Colorado River Aqueduct Programs

In 2005, construction of the Coachella Canal Lining Project began, with a project completion date set for the end of 2006. Once the Coachella Canal is fully lined, a total of 26,000 acre-feet of water will be made available to SDCWA and for the San Luis Rey Indian water rights settlement parties in San Diego County. Similarly, the All-American Canal Lining Project will conserve 67,700 acre-feet for SDCWA and the San Luis Rey Indian water rights settlement. Construction is anticipated to be complete by December 2008. The water conserved from these projects will be delivered to its recipients through the Colorado River Aqueduct via an exchange agreement with Metropolitan.

## **Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program**

In August 2004, Metropolitan and the Palo Verde Irrigation District (PVID) executed a 35-year agreement to implement a Land Management, Crop Rotation and Water Supply Program. Under the agreement, participating land owners will not irrigate up to 29 percent of the valley's farm land at Metropolitan's request, thereby creating a water supply of up to 111,000 acre-feet per year for Metropolitan's service area.

Project implementation began in January 2005 with the fallowing of land under an interim program while long-term contracts with individual landowners were being processed. In addition to boosting Metropolitan's water reliability, the program is also designed to stabilize the Palo Verde Valley economy. Similar to the 1992-94 pilot Metropolitan/PVID program, the farmland can remain as prime agricultural acreage and will be neither "retired," nor converted to another use. Landowners received a one-time signup payment for each acre that is enrolled in the program, and an additional annual payment, subject to escalation, for

each acre not irrigated under the program in that year. Metropolitan has authorized more than \$95 million for the agreement, including an estimated \$6 million for local community improvement programs. The funds are to be administered by a non-profit foundation selected by Palo Verde Valley community representatives. The effectiveness of these programs will be reviewed every five years.

## **Development of Shortage Guidelines and Conjunctive Reservoir Management**

The Colorado River Basin states have been busy preparing for potential water shortages in the event that severe drought conditions return to the Colorado River Basin. Metropolitan participated with representatives from the Colorado River Basin states and other water agencies to draft a proposal of drought management measures to the Department of the Interior. The Secretary of the Interior kicked off the process to develop shortage guidelines in early 2005, with a stated goal of completing the process by the end of 2007. The Basin States proposal includes three points: (1) the Colorado River reservoirs should be operated to delay the onset of shortages as long as possible; (2) the Secretary should pursue system efficiency measures; and (3) Colorado River supply augmentation programs should be developed. Metropolitan has taken the lead in advancing many of the programs identified in the proposal, which eventually could conserve hundreds of thousands of acre-feet of water in the Colorado River system annually.

## **Upper Coachella Valley Groundwater Storage Program**

In cooperation with Desert Water Agency (DWA) and CVWD, Metropolitan has access to 600,000 acre-feet of groundwater storage space in the Upper Coachella Valley. Under the agreement with DWA and CVWD, Metropolitan delivers water to storage when Colorado River water is available and suspends deliveries as needed. In exchange, each year Metropolitan receives State Water Project water available under DWA's and CVWD's entitlements. In 2005, Metropolitan took advantage of adequate water supply conditions and delivered about 100,000 acre-feet of water for storage in the program, which will help provide Metropolitan increased water supplies in future dry years.

## **Storage Agreement with Southern Nevada Water Authority**

In 2004, Metropolitan's board approved a new storage agreement with the Southern Nevada Water Authority (SNWA) which provides increased flexibility in managing water supplies through the coordinated use of investments and assets. Under this agreement, which provides operational flexibility to both agencies, Metropolitan may divert additional supplies unused by Nevada in a given year with the SNWA's implementation of extraordinary conservation measures. These additional supplies would be returned upon request to Nevada in a future year. In 2004 and 2005, Metropolitan stored a total of about 20,000 acre-feet for Nevada.

# State Water Project Programs



Castaic Lake, the terminal reservoir of the State Water Project, is open to multi-use recreation and the water quality challenges that accompany unrestricted drinking water reservoirs.

**U**nder Metropolitan's contract with the Department of Water Resources, Metropolitan has access to approximately half of the water supply developed annually by the State Water Project. Wetter hydrologic conditions resulted in ample SWP supply in 2005. Metropolitan delivered about 1.5 million acre-feet for direct use and storage replenishment in its service area. In addition to the 200,000 acre-feet of water Metropolitan stored in SWP reservoirs from its 2005 water allocation, it stored or exchanged additional water supplies with partners outside its service area.

## Metropolitan's Participation in CALFED

Metropolitan and a broad coalition of state, federal and other water agencies continued working to provide long-lasting water quality and environmental improvements to the San Francisco Bay-Sacramento/San Joaquin Delta, the point of passage for more than two-thirds of California's drinking water. In 2005, this coalition of cities, farms, suburbs and environmentally-minded stakeholders strongly backed sound scientific research to solve emerging Delta fishery issues and promote environmentally sound, balanced solutions that would fulfill CALFED's objective of providing reliable, high-quality drinking water supplies.

This coordinated effort began in June 1995 when state and federal agencies with regulatory responsibility for the Bay-Delta system launched an historic partnership under the CALFED Bay-Delta Program to address these key issues. Metropolitan's expanding efforts in conservation and water recycling and other cornerstones of a diversified, reliable water strategy are designed to support a cooperative partnership with CALFED and other Bay-Delta stakeholders to develop balanced and cost-effective solutions.

# State Water Project Programs

Towards the end of 2004, Metropolitan began work with other stakeholders on a long-term CALFED financing plan based on shared responsibility among state and federal stakeholders, as well as those that would directly benefit from CALFED investments in environmental water supply and water quality improvements. In the same year, passage of the \$389 million CALFED authorization bill was the latest step in a series of funding installments that included \$1 billion from Proposition 204 in 1996; \$2 billion from Proposition 13 in 2000; and another \$2 billion from Proposition 50 in 2002.

In late 2005, Metropolitan participated with state/federal agencies and stakeholder interests in a facilitated effort to develop adequate annual funding for the CALFED Ecosystem Restoration Program and an assured implementation plan for core water supply and water quality projects.

## Additional 2005 SWP Milestones

In 2005, other important milestones for the SWP included continued development of the South Delta Improvements Program that would allow for more flexible pumping capability for Metropolitan at the SWP Banks Pumping Plant. This program could increase pumping capability from 2 to 5 percent, while advancing the ability to transfer water during environmentally benign periods, including supplies under the Sacramento Valley Phase 8 Water Management Agreement settlement.

2005 also marked a fifth successful year operating the Environmental Water Account, a program adding flexibility to the state's water delivery system by providing water at critical times to meet environmental needs without impacting the water supply needs of urban and agricultural users.

In future dry years, Metropolitan can tap into more than 200,000 acre-feet of "flexible storage" from SWP reservoirs in Southern California. Under that agreement, water would have to be placed back into storage within five years.

## State Water Project Storage, Transfer & Exchange Programs

Amendments made to the State Water Project water supply contract in the mid-1990s provided Metropolitan with greater flexibility to store water during environmentally friendly, wetter periods. Among the numerous benefits, the changes enhanced Metropolitan's abilities to develop storage programs outside of its service area. In 2005, Metropolitan stored approximately 60,000 acre-feet using groundwater storage programs with Semitropic Water Storage District, Kern-Delta Water District, and Mojave Water Agency and also 50,000 acre-feet in exchange through the Environmental Water Account. These actions greatly enhanced Southern California's water reliability and will reduce demands on the Bay-Delta during environmentally sensitive, drier periods. Metropolitan had over 650,000 acre-feet stored in existing storage programs in the San Joaquin Valley and San Bernardino Valley at the end of 2005.

## Water Transfers

Metropolitan collaborated with other State Water Project contractors and secured 112,495 acre-feet of water transfer options from Sacramento Valley sellers, but ultimately decided not to exercise these options as supplies became abundant from the wet winter. The experience gained in pursuing these water transfer partnerships will help to provide additional resource options to mitigate potential dry-year conditions in future years, consistent with Metropolitan's water resource strategy outlined in its 2004 Integrated Resources Plan Update.

## Semitropic Water Storage District

This program allows Metropolitan to store a portion of its available SWP water in the groundwater basin underlying the Semitropic Water Storage District in Kern County. The storage and withdrawal capacities of the program are shared with others; Metropolitan's share equals 35 percent. Over the next 33 years, the program will allow cyclic storage and withdrawal of 350,000 acre-feet. In 2005, Metropolitan stored more than 30,000 acre-feet under this program. The storage balance as of December 2005 was more than 345,000 acre-feet.

## Arvin-Edison Water Storage District

This program allows Metropolitan to store up to 350,000 acre-feet of its available SWP water in the groundwater basin in the Arvin-Edison service area located in Kern County. Over the next 25 to 30 years, Metropolitan could withdraw between 40,000 to 75,000 acre-feet per year during dry years through groundwater extraction and/or entitlement exchanges. This storage capability increases Metropolitan's water supply reliability. The storage balance as of December 2005 was 207,000 acre-feet.

## Kern-Delta Water District

During 2005, Metropolitan continued storing water supplies under its water management program agreement with the Kern-Delta Water District. Under the 25-year program approved in November 2002, Metropolitan will store up to 250,000 acre-feet of its available SWP supplies in the groundwater basin underlying Kern-Delta. During dry years, Kern-Delta could return to Metropolitan a minimum of 50,000 acre-feet per year of previously stored water through groundwater extraction and/or SWP exchanges. The storage balance as of December 2005 was nearly 80,000 acre-feet.

# State Water Project Programs



In some years, it may be advantageous for agricultural entities, such as rice growers in the Sacramento Valley, to temporarily transfer water to other water users like Metropolitan. The agricultural entities reap monetary benefits from the sale of their water and the water users benefit from enhanced supply reliability.

## San Bernardino Valley Municipal Water District

As part of a program with the San Bernardino Valley Municipal Water District, Metropolitan has stored 50,000 acre-feet for later delivery from the San Bernardino groundwater basin. Metropolitan also retains the ability to purchase additional supplies. Under the 2003 agreement, Metropolitan can buy water provided to San Bernardino Valley MWD as part of its annual State Water Project allocation. Depending on SWP conditions, approximately 20,000 to 80,000 acre-feet per year would be available for purchase. In 2005, Metropolitan purchased 20,000 acre-feet under this program. The storage balance as of December 2005 was 50,000 acre-feet.

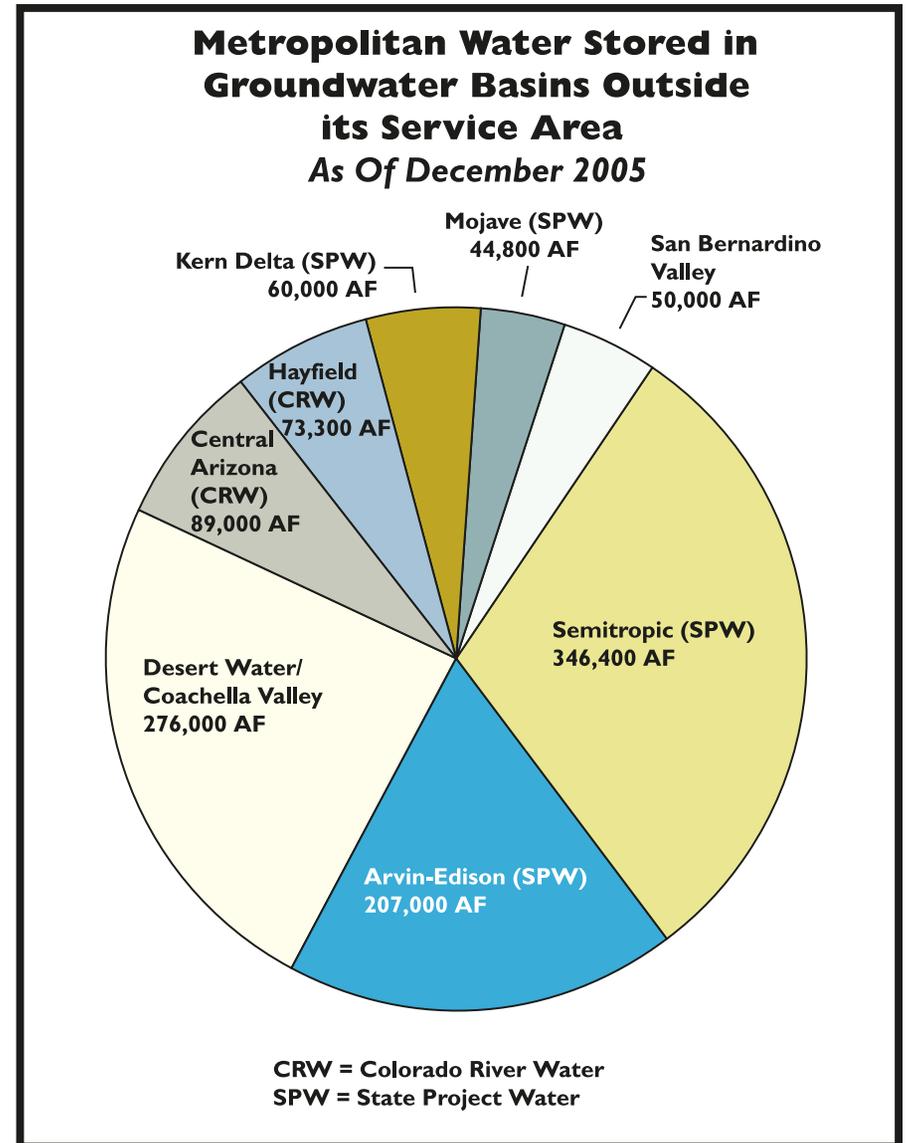
## Mojave Water Agency

In 2003, Metropolitan entered into a water exchange demonstration program agreement with the Mojave Water Agency. Metropolitan has been able to store a portion of its available SWP water supplies from 2003 and 2004. Up to a maximum of 75,000 acre-feet can be stored within the groundwater basin underlying the Mojave Valley. In years when Metropolitan requests the return of its stored water, Mojave, through exchange, will provide Metropolitan its SWP deliveries in the amount requested. The estimated maximum return in a multiple dry-year scenario is 25,000 acre-feet per year. In 2005, Metropolitan stored 20,000 acre-feet through this program. The storage balance as of December 2005 was nearly 45,000 acre-feet.

# State Water Project Programs

## Friant/Metropolitan Water Management Partnership

In 2000, Metropolitan entered into a water management partnership with the Friant Water Users Authority. The partnership is exploring pilot projects that could improve water supply reliability for Friant members and water quality for Metropolitan. The pilot projects would require Metropolitan to invest in a Friant member's water supply infrastructure. In return, the Friant member would commit to exchange a specified amount of their Sierra water supplies for a like amount of Metropolitan's State Water Project supplies. Metropolitan has received a \$20 million Proposition 13 grant to investigate this water management tool.



# Water Quality Initiatives



Over time, highly saline Colorado River water can leave significant salt deposits such as found here along the shore of the Salton Sea.

**M**etropolitan's planning efforts have recognized the importance of the quality of its water supplies. To the extent possible, Metropolitan responds to water quality concerns by concentrating on maintaining the quality of the source water and developing water management programs that protect and enhance water quality. Contaminants that cannot be sufficiently controlled through protection of source waters must be handled through water treatment processes or blending. These practices can increase costs and/or reduce operating flexibility. In addition, Metropolitan has developed enhanced security practices and policies in response to national security concerns.

## Salinity Action Plan

The Salinity Management Policy adopted by Metropolitan's board specified a salinity objective of 500 mg/L for blended imported water. It also identified the need for both local and imported water sources to be managed comprehensively to maintain the ability to use recycled water and groundwater. Several years ago, Metropolitan's board adopted an Action Plan that relies in part on blending SWP water with supplies from the Colorado River to achieve the targets. Metropolitan's treatment plants that receive both SWP and Colorado River water continue to operate under this objective, and using this approach, the salinity target should be met in seven out of 10 years. In the other three years, hydrologic conditions would result in increased salinity and reduced volume of SWP supplies. Metropolitan has alerted its local agencies that such conditions are inevitable, and that despite its best efforts, high salinity could be a concern at such times. Metropolitan has also urged its member agencies to structure the operation of their local projects and groundwater so they are prepared to mitigate the effect of higher salinity levels in imported waters. In addition, Metropolitan will concentrate on obtaining

# Water Quality Initiatives

better quality water in the spring/summer months (April through September) to maximize the use of recycled water in agriculture.

## The Desalination Research and Innovation Partnership (DRIP)

DRIP is a nine-year program (1997 - 2006) designed to help develop cost-effective advanced water treatment technologies for the desalination of Colorado River water, brackish groundwater, municipal wastewater, and agricultural drainage water. A consortium of California water agencies and other interested parties, DRIP has fostered significant research in the short-term for more efficient and cost-effective desalination technologies. The overall program is managed by Water Quality Section and Metropolitan's work with CRW desalination has been conducted at the La Verne pilot- (several gallons per minute) and demonstration-scale (5 million gallons per day) research platforms. The program has realized the following key successes:

1. Ozonation with biological filtration has been shown to perform equivalently to traditional, more costly reverse-osmosis (RO) pretreatment of microfiltration;
2. A large-diameter (18-inch) RO membrane has been successfully developed by Metropolitan; and,
3. A novel RO concentrate recovery process (mineral precipitation combined with secondary RO treatment) has realized RO recovery rates exceeding 95-percent (optimum RO recovery is typically 85-percent). Final testing of the above described processes are currently underway at the United States Bureau of Reclamation facility in Yuma, Ariz.

## Ozone Retrofit Activities

Source water quality improvements must be combined with cost-effective water treatment technologies to ensure safe drinking water at a reasonable cost. Metropolitan has five treatment plants: two that receive SWP water exclusively, and three that receive a blend of State Project and Colorado River water.

In December 2001, Metropolitan's board committed to installing ozone treatment systems at the two plants that treat SWP water only. This ozonation process avoids the production of regulated disinfection byproducts that would otherwise form in the chlorine treatment of SWP water. The Joseph P. Jensen Water Treatment Plant followed on the heels of the Henry J. Mills Water Treatment plant in completing the retrofit. Teams of operators, water quality experts, engineers, mechanics, electricians and controls system technicians met and trained together to facilitate a smooth transition.

The plants producing blended water meet federal guidelines for these byproducts through increased treatment and managing the blend of State Project and Colorado River water. On July 8, 2003, Metropolitan's board adopted plans to install ozonation at the blending plants by 2011 at a cost of approximately \$850 million. This improvement will lift any restrictions on the mix of water used at the plants.

## Southern California Regional Drinking Water Quality Planning Project

In 2005, Metropolitan completed a regional drinking water quality planning project in partnership with the Los Angeles Department of Water and Power, Long Beach Water Department, Inland Empire Utilities Agency, Cucamonga Valley Water District, San Diego County Water Authority, Sweetwater Authority,

Mojave Water Agency and the Mono Lake Committee. The project was funded by a grant from the CALFED Drinking Water Quality Program. The planning effort developed strategies for achieving CALFED drinking water quality goals considering the unique needs of the Southern California region. The project developed an analytical framework for evaluating the region's water quality challenges and the identification of key elements of an integrated strategy for Southern California to meet CALFED and other water quality goals. A final report for the project was submitted to CALFED in June 2005. Metropolitan continues working with this group of agencies to discuss next steps in the regional drinking water quality planning effort and how to involve additional water agency participants.

# Watershed Activities



Just as veteran Los Angeles news anchor Jerry Dunphy used to introduce his newscast with “from the mountains to the sea to all of Southern California,” we can see the vast variety of landscapes captured in a single frame. All of these different variations – captured between mountain ranges and the coastal plain, present water quality and environmental challenges for what is termed the “watershed.”

**M**etropolitan has long supported a wide variety of projects that benefit a broad array of watersheds, while also supporting Metropolitan’s water quality and supply reliability objectives. In 2005, Metropolitan continued to provide seed money for local community-based watershed education and protection activities throughout its service area through the Community Partnering Program (CPP). Metropolitan provided funding through its Innovative Supply Program (ISP) and similar efforts that support many education and outreach programs and address watershed protection, water quality, habitat restoration and water conservation issues at the community level.

Larger watersheds, such as the Bay-Delta watershed, have already seen environmental restoration efforts funded by Metropolitan, and will continue to benefit from Metropolitan’s active role in advancing water quality science and policy. Metropolitan has cooperated with other entities, such as the Santa Ana Watershed Project Authority, to promote watershed studies and other related activities through drinking water bonds and other legislative activity.

In 2005, Metropolitan tracked the efforts of the State Resources Agency and CalEPA to work with watershed stakeholders to consider options for framing a statewide watershed program. Metropolitan also continued to provide input to the implementation of the CALFED Bay-Delta Watershed Program.

## **Los Angeles and San Gabriel Rivers Watershed Council Water Augmentation Study**

Metropolitan is continuing its participation in a Water Augmentation Study initiated by the Los Angeles and San Gabriel Rivers Watershed Council that will assess whether the capture and infiltration of stormwater at localized sites throughout the water-

# Watershed Activities

sheds is a viable means of augmenting water supply without adversely affecting water quality. The project began in 2000 in collaboration with representatives from educational institutions, state, federal and local public agencies and will last 10 years. The study is in its fifth year and has recently completed the second phase of monitoring of six sites with different land uses, analyzing water quality of storm runoff, soil and groundwater.

In August 2005, the Los Angeles and San Gabriel Rivers Watershed Council published the results of nearly three years of monitoring in the Phase II Final Report. Data provided in this report from various land use types indicate that there is no statistically significant degradation of groundwater quality or soil from the infiltration of stormwater.

Computer modeling work is now underway at the U.S. Bureau of Reclamation and University of California, Riverside to assess where it may be appropriate to promote stormwater infiltration at a neighborhood scale and estimate the quantity and cost of water that may be gained through such implementation. Development of neighborhood-scale retrofit concept plans is underway. These plans will define specific criteria for selection of applicable neighborhoods and include a list of neighborhood projects that could be implemented to enhance infiltration.

## Bay-Delta Watershed

The Bay-Delta watershed is large and complex, and it includes the Delta, the Sacramento and San Joaquin valleys and the Sierra Nevadas. Metropolitan continued to work with other stakeholders in the Bay-Delta watershed to provide input to water quality monitoring programs and pursue watershed planning studies to address source water quality protection objectives.

Metropolitan, through its active participation in the California Urban Water Agencies, is working with the Central Valley Regional Water Quality Control Board and other stakeholders to develop a drinking water policy for surface waters in the Central Valley. The objective is to develop an improved regulatory framework for protecting source water quality in the Bay-Delta and its tributaries. Technical studies to support policy development continued in 2005. These studies included development of conceptual models describing key watershed sources of drinking water quality constituents of concern, and development of a source water quality monitoring program to address key information needs.

In 2005, Metropolitan also continued partnership studies with Sacramento River watershed interests to identify potential water quality improvement projects. Metropolitan continued participating in a partnership of Sacramento Valley agricultural interests and urban water agencies to address water quality concerns associated with the Colusa Basin Drain in the Sacramento River watershed.

## Colorado River Basin Salinity Control Program

The Colorado River Basin Salinity Control Program is being implemented to prevent increases in salinity of Colorado River water from 1972 levels. The U.S. Bureau of Reclamation (USBR), the U.S. Bureau of Land Management (BLM), and the National Resources Conservation Service (NRCS) provide funding to reduce salinity in the river and its tributaries.

Entities in the Colorado River Basin that purchase energy generated at hydroelectric power plants operated by USBR contribute funds to share in the cost of implementing these measures. Concrete lining or pipelining of earthen irrigation canals, use of sprinkler and drip irrigation systems, deep well injection

of saline water and plugging orphan wells discharging saline water are among the measures being implemented.

The Colorado River Basin Salinity Control Forum, on which Metropolitan's late CEO Dennis Underwood served as a gubernatorial appointee, estimates that absent the program, Colorado River salinity would be around 100 mg per liter higher.

# Southern California's Integrated Resources Plan



To support the needs of a vibrant multi-billion dollar economy, Metropolitan's Integrated Resources Plan recognizes the security of a diversified supply portfolio. The plan, a cornerstone for Southern California water managers, looks to conservation, recycling, desalination, storage, transfers and exchanges to maintain reliability.

**M**etropolitan's board adopted the Integrated Resources Plan Update in July 2004 after a series of outreach meetings that were held to receive input from member agencies and the public. The IRP Update showed that Southern California was exceeding the projections laid out in the original IRP, thanks to some of the more progressive water conservation programs and technology in the West. Also, the IRP Update recommended a supply buffer of 500,000 acre-feet, half of which is to come from local resources. This increased the local resources target to a total of 750,000 acre-feet, which accommodates the region's water recycling, groundwater recovery and seawater desalination goals. The IRP continues Metropolitan's balanced approach of ensuring diversity and reliability of local and imported supplies.

## 2005 IRP Implementation Report

This IRP Implementation Report fulfills a policy set by Metropolitan's board during the adoption of the IRP Update Report in July 2004, which requires regular updates on the status of actions and programs developed to meet water supply targets. Similar reports prior to the IRP Update were provided to Metropolitan's board in 1998, 2001 and 2002.

## Consistency with Published Reports

The data and analytical results included in this report are consistent with Metropolitan's 2005 Regional Urban Water Management Plan. Data on locally developed supplies and future projections were obtained through coordination with member agencies during the development of the RUWMP.

# Southern California's Integrated Resources Plan

## Implementation Report Framework

Resource target components (programs or groups of actions) were evaluated for their likelihood of producing a range of supplies for a single dry year. These values were then summed up for each resource and compared against their IRP targets for years 2010, 2020, and 2025. The resources were determined either to have met (or exceeded), or to be at risk of not meeting their respective targets. Where resources were determined to be at risk of not meeting the IRP targets, implementation challenges and potential strategies are discussed.

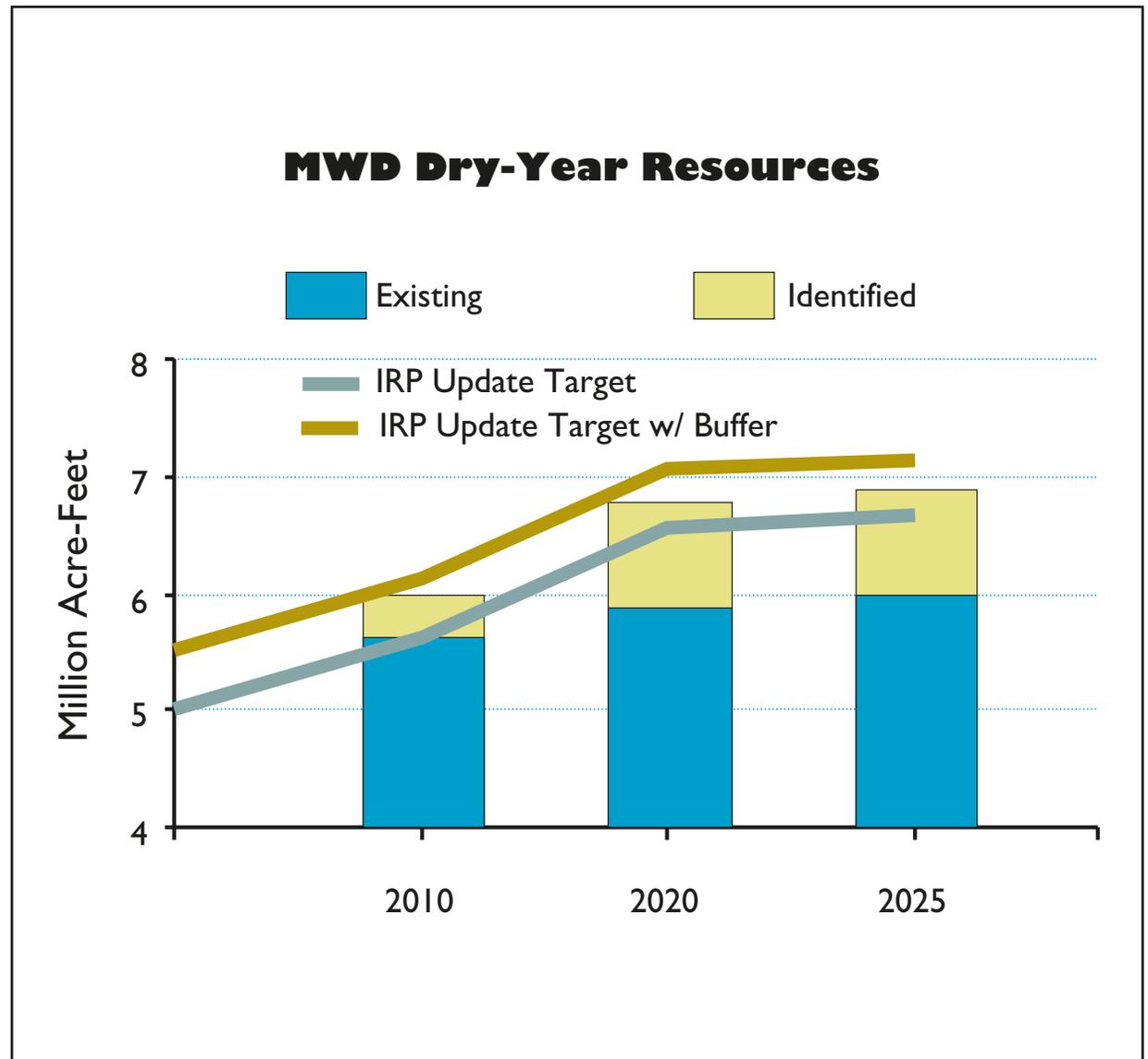
## Changed Conditions

Changed conditions since the IRP Update are responsible for the determination that some targets are at risk of not being met. In response to the various changes, Metropolitan staff will continue to identify potential new programs and strategies that can be implemented, when needed, to maintain Metropolitan's water supply reliability.

## Overall finding

The portfolio of existing and identified dry-year supplies slightly exceeded the sum of all the targets. These supplies are currently projected to meet the overall IRP needs set forth in the IRP Update through 2025. However, as already stated, some components of the resource targets have been deemed less certain, at risk, or not available for implementation. Even core, contracted supplies and existing programs are susceptible to changing influences, and therefore all resources will require continued monitoring and evaluation.

Where needed, future resource opportunities consistent with the IRP Update planning buffer will be identified, pursued and brought before Metropolitan's board for consideration.



# Community Partnering Program



The Goldeneers Canyon Education Corps is a year-long program on watershed education, water conservation and water pollution prevention that targets K-5 school children at Brooklyn Elementary School as future water ambassadors. Activities at this San Diego school include a native plant garden; stormwater pollution prevention classes; water quality testing; discussion of biodiversity; water geography; art projects using native plants; watershed cleanups; and California water history.

In 2005, the Community Partnering Program's focus continued to remain on educating Southern Californians about watershed awareness, conservation and California Friendly™ plant garden issues. A number of non-profits were awarded repeat sponsorships based on ongoing efforts in these areas.

The hallmark for the CPP projects and programs is that of "continued support." Awarded CPP recipients' activities include educational collaborations, policy forums or other public education programs. For fiscal year 2005/06, CPP sponsorship contributions are earmarked at \$650,000.

The following represents a few organizations that have received CPP sponsorships:

## **The Chronicles Group**

### *"Running Dry" documentary curriculum*

Provides sponsorship for kindergarten through college-level curriculum activities to follow viewing of TV documentary on global water shortages and solutions. Includes lessons and activities on environmental science and conservation, a service learning component and an interactive Web site called "Water for Kids."

## **Sacramento River Watershed**

### *Water conservation Public Service Announcements*

Provides sponsorship of public service announcements on water conservation, watershed and California native plants to more than one million Sacramento television viewers in a 16-county area.

# Community Partnering Program

## The Water Conservation Garden

### *California Friendly™ Gardening Festival*

This El-Cajon-based family event provides hands-on planting activities: kids dig into the gardening experience, while the parents check out low-flow sprinkler alternatives.

## Public Officials for Water & Environmental Reform

### *California water policy conference*

This 15th annual conference provides a forum to encourage discussion between Southern California's academic, engineering, and regulatory water resource leaders. A variety of stakeholders from throughout the state attend in search of fresh approaches to Western water issues.

## Friends of the United Nations

### *Southern California Preparatory Conference*

This co-sponsorship supports a water resources education forum for college professors and students alike to address challenges and solutions to Southland water supply issues. Held at the University of Southern California, this conference also creates enthusiasm for U.S. participation and leadership in the global water conference scheduled for March 2006 in Mexico City.

## City of Beverly Hills

### *Demonstration Garden*

Co-sponsors California native plant signage for a firewise / waterwise demonstration garden in historic Greystone Park. Displaying a rainbow of colors to chose from, these plants hold the fire line as well as hold down the water bill.

## Science & Technology Education Partnership

### *Student science conference*

Co-sponsors a one-day Inland Empire conference with hands-on science experiments that bring the fields of math and science to life. Attracts more than 1,000 students to careers such as a water resources engineer, a water quality scientist or a hydrologist.

## Eco-Life Foundation

### *Environmental watershed education program*

New water resources activities and curriculum target 600 fifth- and sixth-grade students from 20 different schools throughout the inland areas of the San Diego Bay watershed. Eco-Life works with students from underserved communities as well as the Boys & Girl Club of San Diego and YMCA branches.

## Friend of Harbors, Beaches & Parks

### *Resource conservation conference*

Orange County government and community leaders, water resources administrators and various environmental education experts gather to discuss, among other issues, sustainable sources of clean water.

## San Gabriel Valley Council of Governments

### *Leadership 21 Program*

Supports the program's module on water resources, water quality and regional supply. Lead by faculty from the University of Southern California's School of Policy, Planning and Development.

## Yuima Municipal Water District

### *California Friendly™ garden*

Sponsors upgraded California Friendly™ native plant signage, posters and brochures, as well as the development of related website information for the San Diego County community.

## Cucamonga Valley Water District

### *Student environmental festival*

This repeat awardee provides a day-long program for more than 1,000 fifth-grade students in the Rancho Cucamonga area. Highlights include "Water Conservation Jeopardy," an edible aquifer, plant and garden demonstrations, pollution solutions, and "World of Water" discussions.

## San Diego River Park-Lakeside Conservancy

### *"Reach Out" project*

This repeat awardee provides the community of Lakeside with educational activities that present San Diego River watershed, restoration and water quality issues.

# City Makeover Program



Pictured is the Sam & Alfreda Maloof Foundation in Rancho Cucamonga, one of several grant recipients in Metropolitan's City Makeover Program. In its second year, the grant program fosters appreciation for California Friendly and drought tolerant plants and encourages efficient irrigation techniques in public, commercial and residential landscapes.

**T**he City Makeover Program is part of a larger effort by Metropolitan to foster the appreciation of California native and drought-tolerant plants and efficient irrigation techniques in public, commercial and residential landscapes. The following projects have been selected for inclusion in this program.

## **Rancho Santa Ana Botanical Garden Container Garden \$75,000**

*Claremont*

Establishes an 8,050 square-foot California Natives container garden with accompanying information about how to create and maintain attractive water-and-space-efficient native plant container gardens.

## **Paradise Creek Educational Park \$75,000**

*National City*

Restores a degraded urban creek on a half-acre site by providing a wetland pond vegetated with salt march plants, coastal sage upland habitat, and interpretive signage to educate the public about the watershed and environmental issues.

## **Aquarium of the Pacific Watershed Garden \$75,000**

*Long Beach*

Using reclaimed water and low-water irrigation techniques, a new watershed garden will represent ecologic and hydrologic zones occurring along the coastal slopes and at the mouth of the Los Angeles and San Gabriel river watersheds. The project will include an environmental education classroom using innovative "green" design principles.

# City Makeover Program

## **Pierce College Botanical Garden \$75,000**

### *Woodland Hills*

The Pierce College Life Sciences faculty designed the Pierce College Botanic Garden as a teaching tool to demonstrate how plants from the seven major world-wide Mediterranean climate zones have adapted to conditions similar to those in Southern California.

## **Garden at the Kumeyayy-Ipai Interpretive Center \$75,000**

### *Poway*

The garden project is part of a bigger plan to improve the five-acre Kumeyaay-Ipai Interpretive Center, which is historically significant as an ancient Kumeyayy Native American village with features such as boulders with deep grinding holes once used to process acorns.

## **The Best of California \$75,000**

### *Orange*

Creates a heritage landscape in a 2 1/2-acre corner of the Santiago Canyon College campus, replacing a Christmas tree farm and featuring native California plants, as well as California Friendly™ trees planted at strategic points for use by arboriculture students.

## **Barnsdall Park Great Lawn Landscape Restoration \$75,000**

### *Los Angeles*

Replaces the “great lawn” area of Barnsdall Park in Hollywood with an expansive hybrid Bermuda lawn bordered by native shrubs and plants that will be both beautiful and functional, and will offer park visitors a practical landscaping alternative to thirsty cool season turf found throughout Southern California.

## **Rose Haven Heritage Garden Project \$75,000**

### *Temecula*

The project will incorporate native plantings, water efficient non-native areas, herb garden, habitat garden and wildflower meadow to create a heritage rose garden with companion plantings.

## **Land Use Learning Center \$60,000**

### *Riverside*

The three-acre garden at the Riverside-Corona Resource Conservation District center demonstrates sustainable methods that conserve natural resources in the three main land uses of Southern California: Native Habitats, Urban areas, and Agricultural lands.

## **Fullerton Arboretum Visitor's Center \$45,000**

### *Fullerton*

The Arboretum's new visitor's center pays homage to the area's connection to the citrus industry, and resembles the architecture of an early 1900s citrus packinghouse. The landscaping will also reflect that heritage, with a mix of citrus and regionally native plants that demonstrate their architectural and seasonal value in the home garden.

## **South Oxnard Public Library Garden \$20,000**

### *Oxnard*

This demonstration garden features native plants and shrubs designed to enhance public awareness of Southern California's arid ecosystem and the need for water conservation at all times, even in years of above-average rainfall. The project includes collection and use of rainwater for irrigation and permeable paving to reduce runoff and increase water infiltration.

## **Altadena/Pasadena Oak Woodland Pocket Park \$20,000**

### *Altadena*

Altadena Foothills Conservancy will create an oak woodland pocket park in an 8,000 square foot area connecting upland habitat with lower urban areas using native and water-wise plantings as well as recycled and found material to create a California sublime landscape.

## **Showcase of Native Gardens at Madrona Marsh \$20,000**

### *Torrance*

The project will transform a grass landscape adjacent to the Madrona Marsh Nature Center into a native plant garden using locally native plants that have been present in the area since the 1800s, explaining these historic relationships to visitors.

## **Native Plant Demonstration Garden at Shipley Nature Center \$20,000**

### *Huntington Beach*

A new garden at the Shipley Nature Preserve will showcase water harvesting techniques and various habitats: butterfly, hummingbird, coastal sage scrub, wildflower meadow, oak woodland, and riparian woodland, as well as a bog/swale to capture rainwater for wildlife.

# City Makeover Program

## **Marine Monument at Park Semper Fi \$20,000**

### *San Clemente*

A bronze statue of a U.S. Marine will be put in Park Semper Fi as a permanent tribute and to raise awareness of the city's historical ties to the Marines at Camp Pendleton. The gardens surrounding the monument will be planted with California natives, many from the endangered coastal sage scrub and chaparral plant communities indigenous to San Clemente and Camp Pendleton.

## **Native Plant Demonstration Garden at Covina Library \$20,000**

### *Covina*

The Covina Public Library will create a 3,300 square foot water-wise demonstration and strolling garden surrounding its building, replacing lawn and capturing run-off for use in the garden.

## **Urban Forestry Resource Center \$19,210**

### *San Diego*

People for Trees will rehabilitate an old storage yard and building for use as an Urban Forestry Resource Center that includes a demonstration garden, education center and small nursery where the group can conduct workshops, tours and training sessions. A small arboretum will demonstrate benefits of trees in urban environment: cooling shade, storm water run-off, erosion control, wildlife habitat, CO<sub>2</sub> uptake and saving water by reducing evapotranspiration rates under their canopies.

## **Library Gardens \$18,000**

### *Bellflower*

The Redevelopment Agency transformed a concrete public parking area and out-of-context single-family dwelling next to City Hall to create an intimate gathering place near downtown Bellflower for small community gatherings and educational lectures. The garden will include seating and winding paths, a meditation labyrinth and California native plants.

## **Hollydale Elementary School Demonstration Garden \$6,000**

### *South Gate*

The garden will be located on land owned by Southern California Edison but loaned to Hollydale School for a demonstration garden that teaches children about water conservation, strategic irrigation systems and the use of controllers. The garden is being developed in conjunction with the school's curriculum and will include drought resistant plants as well as fruits and vegetables, in order to augment classroom learning.

## **City of Santa Monica \$25,000**

The city held residential and professional workshops at the 2003 City Makeover project Garden/garden during the main Southern California planting seasons, expanding its current native plant educational program with additional information, including plant palettes for Santa Monica, efficient irrigation systems, composting and integrated pest management. The professional workshop qualified contractors to be listed as city-certified landscape specialists.

## **City of San Clemente \$6,000**

The city will offer four gardening workshops to be held at (past City Makeover grant recipient) Casa Romantica site.

# Public Hearing Comments Excerpts

The following excerpts are from the Public Hearing held on December 12, 2005, to review Metropolitan's RUWMP for adequacy in achieving an increased emphasis on cost-effective conservation, water recycling, and groundwater recharge as required by section 130.5 of the MWD Act.

## LAUSD (Submitted written testimony)

"As one of the biggest water consumers in Los Angeles, LAUSD has long been one of the beneficiaries of Metropolitan Water District of Southern California's conservation programs. Earlier this summer, LAUSD was recognized as one of the Water Conservation Champion(s) of 2005, in recognition of "Exemplary Service and Meritorious Achievement in Water Conservation." In fiscal year 2004 to 2005, LAUSD has conserved approximately 10 million gallons of water through the installation of 387 ultra-low flush toilets/urinals and the purchase and use of 61 waterbrooms. LAUSD recommends that the Board of the Metropolitan Water District of Southern California continue to expand its successful Urban Water Management Plan. LAUSD wishes to continue its partnership with MWD."

*Kenneth Davis, Energy and Utilities Manager,  
Los Angeles Unified School District*

## Motel 6, Hemet, CA

"We are pleased to be part of the conservation effort, and also enjoy the financial benefits of programs like these.

We have no way to calculate how much water is saved in 104 rooms with many uses, but I am sure it is substantial. Thank you.

The rebate program should continue as efforts to motivate more businesses to become involved (are) important.

As a suggestion to improve your program, it would be beneficial to verify that the installation companies do a more diligent check of the quality of the installation. It does not bode well for these types of programs when [installation repairs are later required because of sloppy work].

*Dave Staats, General Manger, Motel 6 - Hemet, CA.*

## Shea Homes

"We are participating in a landscaping program at our community in French Valley in Southwest Riverside County. [Here we have 110 homes participating] in the California Friendly program. That's been a great success for us. It's a nice test because we've made a commitment in all of our communities starting in April of this year, to provide a satellite [irrigation] controller, and we're using a HydroPoint WeatherTRAK controller. We'll be doing [this installation] across the board in all of our communities. And in this particular community we are combining that with the California Friendly palette [of native and drought tolerant plants]. So, in a few months we're going to have an opportunity to really measure the difference that just the controller alone gives us versus the additional layer of the plant palette.

I think the biggest thing for us in the challenge going forward is education. It's education for our landscape contractors, our homeowners, and ultimately ourselves because we've made an investment, and Metropolitan has made an investment, and my personal concern is that it is carried forward... The other side is the plant palette. We don't want people replacing the plant palette we've given them. They can go to Home Depot and get something that maybe they're more used to looking at, so we are trying to put together an education program for them, so that we ensure what we've put in place for them is retained.

I would just like to encourage these pilot programs – we like to think that we are forward-thinking and we really could not have done it without the pilot program and now we've made a commitment across the board and we will do the California Friendly palette on some communities and will do the WeatherTRAK controller on all of them. But, I think without the pilot program we may not have, so we really appreciate the support of Metropolitan."

*Bob Yoder, VP, Community Development, Shea Homes:  
Los Angeles & San Gabriel Watershed Council*

"The watershed council's mission is to facilitate a comprehensive multi-purpose stake-holder driven consensus process to preserve, restore and, enhance the many beneficial uses, economic, social, environmental, and biological, of the LA and San Gabriel Rivers and their watershed ecosystems. We do this through education, research, planning, and mediation. By supporting the watershed council, its mission and vision, and its projects, Metropolitan is embodying its commitment to conservation, recycling and groundwater recharge.

Let me summarize briefly the current projects that we are working on, and which Met has been supporting:

- 1) The water augmentation study – it's confirmed that urban storm runoff water can be infiltrated to our aquifers as a net benefit for water quality and supply thus turning storm water runoff from a liability to an asset. In the future we are planning neighborhood level retrofit to increase infiltration of storm water to ground water. In addition, our landscape ethic project is promoting the return of native and drought tolerant, or California Friendly plants as a way to dramatically reduce water consumption for landscape irrigation. Planting guidelines have been assembled and adopted, landscapers are being educated. We have a seminar coming up in February. We're contem-

# Public Hearing Comments Excerpts

plating a seed bank so that landscapers can have a ready source of locally native plants. We have a plant profiler, a tool on our website that you can use to see what plants will look like as they grow larger over time. Lastly, in partnership with Heal the Bay we are implementing a community based Compton Creek Watershed Management plan which is an on the ground process working with the local community to incorporate these goals and philosophies into projects in the community. In addition, we offer cartography and GIS support to other organizations operating in Los Angeles County.

In summary, Metropolitan's support of the watershed council advances its goals in conservation, recycling, groundwater recharge. Thank you for this opportunity to address you and I look forward to continuing collaboration with Metropolitan for our mutual benefit. Thank you

*Nancy Steele, Executive Director,  
Los Angeles & San Gabriel Watershed Council*

## *Loyola Marymount University*

"I can't thank you enough for your water conservation programs because we are always looking for ways of reducing our costs – because money taken for utilities is money taken away from education. We've grown by 1,500 beds on campus since 2005. That is a 50 percent increase in the number of students on campus. We've not increased our water consumption at all in this past five years. That's really a testament to the programs that you have put in place. I also want to thank the administrators that you have in place. They are excellent – very competent individuals.

The kinds of things we have done is very vanilla, but its shower heads, its faucet aerators, we got rid of the old washer machines, we changed our water treatment program and our cooling towers. We have been using recycled water on campus. We have updated our

landscaping (irrigation) control. We have also been adopting some drought resistant plants. Now in our new construction projects, we have been going after things like 1-gallon toilets, ½ gallon urinals – things like this really make a difference.

I highly encourage you to continue to support these things. In closing, we are looking forward to the final connection to the recycled water line that will feed Playa del Rey. We are having some problems with odor and the stagnant water so as soon as that is opened up that's going to help us and we'd like to cover the whole campus; we are only about 50 percent right now. Also, [we would support some joint efforts with Metropolitan and the U.S. Green Building Council]. Thank you very much. It's been a pleasure working with your administrators.

*Gerald T. Robinson, Manager of Energy Management,  
Loyola Marymount University*

## *Southern California Golf Association*

"A quick background on the golf industry and recycled water use based on some internal audits, found that 20% of golf courses currently use recycled water and that translated down to the local area when we looked at MWD's local service area. There are about 321 golf courses in the MWD service area; 70 currently use recycled water – the other 241 use another source. This translates to about 100,00 AF potential savings if this type of program could ever work.

The golf industry recognizes recycled water as the future. We recognize drinking water isn't going to be available to us forever. It also does provide a type of drought-proof insulation. The current problem with recycled water is distribution and we felt that the onsite concept was one way to resolve that problem if it could be economically feasible...

We found that turf is an excellent biofilter and there has been university research that shows pesticide nutrient removal. I think there could be a big use for golf courses in the disposal of wastewater as a more environmentally friendly method than ocean disposal. We need research in this area, though. Our industry is currently exploring this.

We also found in our study (of potential costs of on-site water recycling at the Coronado Municipal Golf Course) that (while potential water costs are still high relative to current supplies,) reclaiming an acre-foot in Coronado would require approximately 50% of the power it takes to import an acre-foot from the Colorado River or the State Water Project. There is an unknown quantity as far as saving energy and saving future infrastructure for the rest of the region.

We do need to consider water quality with recycled water and landscape uses. There was recently a study in Scottsdale that found about 40% of the final TDS [Total Dissolved Solids] of effluent water came out of regenerative water softeners. So, they were getting about 400 ppm of the 1000 ppm of their end product which was contributed by the water softeners and if we can control that going into the waste stream it would certainly make our lives easier on the other end of it.

I must say that the golf, turf and landscape industries do want this water, though – especially, if it is good quality. We would think that some enlightened thinking and looking at what we call a Facility Capacity Credit in our report, could resolve some of the economic issues if we look at how much water we could create here, what it could be resold for, sewer and water meter hook up charges, some of that water could be diverted into the infrastructure needed to do this. We all might benefit from it.

*Mike Huck, Irrigation & Turfgrass Services*

# Public Hearing Comments Excerpts

## *Egmond Associates Ltd.:*

Essentially our technology is a filtered well with removable filters. Our technology research gave 3 main findings:

First, we can, using this technology, provide clean water.

Second, there is substantial clean water that we can generate. Now how much can we generate? You currently lose every year enough water for about 700,000 homes. We believe that we can recover that water.

Third, there is a substantial policy-understanding impediment that works against our complete solution to your water issues. A main impediment of that is the inadvertent and even needed historical elevation of proprietary interests. It's not a criticism of those who actually do their work, but it is an impediment to what you are trying to achieve. A few examples are: the only time I have talked to drinking water engineers is when our lines crossed during construction; fire departments routinely wash their equipment using the argument that they have the right to water even though their own city pollution engineer asked them to use their sediment facilities; one said, my job is to protect against flooding, that's it...You've got all these separate proprietary interests and each one is very important...but there is no integration.

So, what can you do? I think you can advocate that there is only good water. The advocacy term that I would emphasize is "water." It's not storm water, groundwater... you have to advocate the water portion. I'm suggesting as well, you advocate that water is the prime object of your water interests. You should encourage a Prop. 50 thinking: Prop 50 is starting to think in this kind of direction – everybody has to work together. This is a summary of our work. We show that there is a technology that can provide inexpensive local new water, we believe that

there is, based on runoff currently, enough water for 700,000 homes that you are flushing into the ocean, but (which) could be harvested. We've provided you with a few tools and we are encouraging you to adopt a Prop. 50 approach, which encourages integration of revenues.

*John Van Egmond, Egmond Associates Ltd.:*

## *The Toro Company*

Most of the people in California and the U.S. don't know what an ET controller is. I want to praise you on your successful efforts, especially for San Bernardino and Riverside Counties, for the California Friendly™ model home program. Our company also participated with some of these builders. But, getting the word out to the irrigation and landscape designers is most important. It's not enough just to say, "You want it and you need it and you'll see some of the benefits out of it." You really have to tell people: "You want it!" You really have to step up to the table and mandate it. Keep local community officials technically up to date. I haven't seen in this industry a meeting of all the major companies coming together with water districts, such as you, and putting together a technology road map for what your needs are going to be. You should understand what we do, and we should understand what your needs and goals are going to be. Create value propositions for your customers of what really this is: it's more than just saving water for them. Clearly demonstrate the need for a builder/developer to further promote water conservation. Have builders install weather based ET controllers.

[In response to the question,] "Why can't somebody make a \$50 ET controller and buy it from Home Depot"? We'd love to do that but the market demand isn't there. For companies like us it's easier to build a product for 100's of thousands vs. 50 pieces. If you build 100,000 your cost per quantity is going to be

better and you get better price variance for your components. One other thing manufacturers can do to promote public awareness is to participate in the Center for Irrigation Technology, which is by California State, Fresno. It's recognized by your agency and several water agencies throughout the U.S., they do independent testing on controllers. Everybody says they have an ET controller that saves water - to me, in God we trust, all others bring data - we need to see facts. We're the only company who submitted products to the Center for Irrigation Technology that passed 100% in each required test.

Companies like us need to work more closely with water agencies to promote water conservation fairs and events - I don't think we do enough of those, and the number should be increased dramatically. Creation of information product technology articles in newspapers, television and magazines - you folks know what an ET controller is, but the majority of the people out there - 99% of them, have no idea what it is - but when they hear about it, they like the idea. But we've got to communicate it to them.

*Rob Starr, Strategic Technologies, The Toro Company*

## *Members of the public*

I've been following this process since the first year of SB 60, and I would hope that I would be invited in the future as well as the former convener of the CUWCC,... someone that has supported the MWD conservation programs and works with them representing various non-profit & public interest groups. This meeting would be interesting if it was a workshop rather than a public hearing where more people can participate - Met's done that in the past. I have actually learned quite a bit from the discussion today - some new items and people you don't generally see in the conservation circle...The challenge here is how does this interact with the UWMP - the SB 60 report

# Public Hearing Comments Excerpts

and the IRP, it's hard for the public to figure out where they fit in. In the discussion of watershed management, through the Southern California Watershed Alliance, we are part of a statewide group that's doing a series of regional hearings, and we hope that Met will support that as well, and we talk about how watershed management is kind of the oversight of many of the issues we're talking about here - that these are just pieces of the puzzle. And lastly, I continue to advocate that conservation get a full \$250 /acre-foot for their conservation programs...We're at a real crossroads now - we've done the basic conservation on residential, as you have recognized we now have exterior work to do and more commercial and industrial and I hope you include the community-based organizations that have been the delivery mechanism that make these programs work.

*Connor Everts, P.O.W.E.R.*

I think the IRP process is the place to do the integration (of these programs). As we look ahead 25-30 years, the percent of water supplied to So Cal from the Colorado River and the State Water Project will decline. The big increase is going to be from these kinds of programs because that's where you get your best risk [avoidance], you get a lot of protection against catastrophes that may affect these other imported sources. You have already done a lot with your current IRP, I understand you will be updating the IRP, and this report should be an important part of the IRP discussion. Also, [DWR's] Bulletin 160 State Water Plan...has increased the amount of water that is available from conservation up to 3.1 million acre-feet per year out towards 25-30 years, so conservation is becoming even more cost effective based on state data.

*Frances Spivy Weber, Mono Lake Committee*

## *Metropolitan Directors*

Several of Metropolitan's Board of Directors also volunteered comments:

"This kind of annual report could evolve into a clear recognition of watershed management issues and the way that increasingly integrated management schemes are important in terms of water quality through the continuum to water supply. There is an opportunity for us to evolve this report into a more integrated or comprehensive story about what Metropolitan is doing and ways that it might remind us of opportunities we are not yet meeting that we can address.

*Director Daniel E. Griset, City of Santa Ana*

I would suggest that we get more involved in public landscaping because that is an example that people see every day. Until we get to the point where we don't see water running down the street where nobody can use it - we've been very effective inside the home and we're making progress in the homeowners' yard - but to me the most important thing is to set the example out in public.

*Director Randy A. Record,  
Eastern Municipal Water District*

I wanted to thank all of the speakers that came today. A lot of Metropolitan's success in conservation is due to the partnerships like the ones we heard about today. Each speaker offered valuable insights as to how to craft effective conservation programs that really work and meet the goals for the future.

*Director Timothy F. Brick, City of Pasadena*

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Photographs by MWD staff except as noted.

Inside front cover spread, pages iv, 6, 12, 16, 22, 24, 30, 32, 36: Sally Aristei

Page 8: Ralph Cangialosi

Page 34: photos by Pam Hayhurst

## This is a list of common acronyms and terms used in this report.

**Acre-foot:** The amount of water that would cover one acre one foot deep with water. One acre-foot is equal to about 325,851 gallons.

**Bay-Delta:** The San Francisco Bay - Sacramento/San Joaquin Delta is formed from the confluence of the Sacramento River, the San Joaquin River and tidal flows from San Francisco Bay, which then coalesce into a 700-mile maze of sloughs and waterways surrounding more than 60 islands protected by flood control levees. More than two-thirds of the state's population depends on the water that passes through the Bay-Delta, which is the crossroads to California's two largest water systems — the State Water Project and the Central Valley Project. These projects help supply water to both farmers and cities throughout the state. In total, more than 7,000 public agencies obtain their water from the Bay-Delta tributaries or the Bay-Delta itself. The Bay-Delta is also California's most important fishery and wildlife habitat, and has been the subject of extensive restoration efforts.

**Bewaterwise.com:** An internet Web site sponsored by the Family of Southern California Water Agencies that has extensive information about how to use water more efficiently. The Web site address is <http://www.bewaterwise.com>.

**BMP:** Best Management Practices - As used in this report, the 14 water management practices contained in the California Urban Water Conservation Council Memorandum of Understanding.

**CALFED:** Stands for the CALFED Bay-Delta Program, an entity made up of federal and California state agencies whose mission is to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta System.

**CALFED Bay-Delta Authority:** The California Bay-Delta Authority oversees the implementation of the CALFED Bay-Delta Program for the 25 state and federal agencies working cooperatively to improve the quality and reliability of California's water supplies while restoring the Bay-Delta ecosystem.

### California's Colorado River

**Water Use Plan:** A plan developed by California agencies that provides a framework by which Colorado River water management programs, projects, and other activities are being coordinated and implemented cooperatively. The plan specifies how California is reducing its use of Colorado River water to live within its basic apportionment of Colorado River water plus any surplus water when unavailable.

**California Friendly™:** A campaign that encourages Southern California residents to make their homes California Friendly™ by using native and drought-tolerant plants, smart irrigation systems and water-wise appliances meeting certain standards. Metropolitan also is working with homebuilders and the building industry on projects and programs that will spotlight state-of-the-art California Friendly™ features in current and future developments.

**Central Valley:** The Central Valley is California's dominant agricultural region and forms the principle drainage of the western Sierras and other surrounding mountain ranges. Two of California's largest rivers, the Sacramento and the San Joaquin, flow through the Central Valley. The Central Valley is also criss-crossed by much of the state's water conveyance system.

**CIMIS:** The California Irrigation Management Information System (CIMIS) program in the Office of Water Use Efficiency (OWUE), California Department of Water Resources (DWR) consists of a network of

over 120 automated weather stations used by farmers and other irrigators to adjust watering needs.

**City Makeover Program:** A competitive grant program providing funding for new native and drought-tolerant themed landscapes in prominent public locations within Metropolitan's service area. It is part of a larger outreach program to foster appreciation of California native and drought tolerant plants, efficient irrigation and appropriate site design in public, commercial and residential landscapes.

**Community Partnering Program:** Metropolitan's Community Partnering Program provides funding for water-related, educational outreach on regional water resources issues, such as conservation, watershed or water quality, educational material for California friendly™ garden projects.

**Conjunctive Use:** Storing imported water in a local aquifer, in conjunction with groundwater, for later retrieval and use.

**CRA (Colorado River Aqueduct):** Colorado River Aqueduct, built between 1933 and 1941 and owned and operated by the Metropolitan Water District of Southern California.

**Desalination:** Taking the salt out of seawater or brackish, salty water. This is an energy-intensive process that uses high-pressure reverse-osmosis to push the salty water through a filter membrane, producing clean, potable water to help meet retail demands.

**Groundwater Recovery:** Groundwater that is unsuitable for use due to high levels of chemicals or salts either naturally occurring or the result of contamination, is extracted and treated, making it usable for a variety of applications.

**HECW:** High efficiency clothes washers - washing machines that use a minimal amount of water and that are included in Metropolitan's incentive programs.

# Glossary

**IRP:** Integrated Resources Plan. The district's plan to ensure reliable water delivery to its customer member agencies despite population growth, dry spells and droughts. The IRP resources mix includes water storage, conservation, best management practices (BMPs), recycling, desalination, and groundwater recovery, among others.

**Imported (water) supplies:** Water supplies imported into Metropolitan's service area from outside Southern California. Imported water supplies the Colorado River Aqueduct, the State Water Project and Los Angeles Aqueduct.

**Local (water) supplies:** Local water supplies include water resources produced and delivered by member agencies and retail agencies within Metropolitan's service area. Local supplies include groundwater, surface water, recycled water, groundwater recovery, and desalination. Since the Los Angeles Aqueduct delivers supplies to the City of Los Angeles exclusively, it is sometimes classified as a local supply from Metropolitan's perspective.

**Lower Basin States:** These are three of the seven states that are included in the Colorado River Compact that take water from the lower Colorado River Basin. These states are California, Arizona and Nevada.

**LRP:** Local Resource Program. Metropolitan's funding mechanism for local recycling, groundwater recovery, and desalination projects. Projects are selected based on a competitive bidding process.

**MSHCP:** Multi-Species Habitat Conservation Plan.

**Ozone:** A gas derived from oxygen that is bubbled through water during the treatment processes to kill microorganisms.

**Potable / non-potable:** Drinkable water. Nonpotable means nondrinkable.

**PDA (Protector Del Agua):** Metropolitan's irrigation management education course originally directed towards landscape maintenance personnel, and now expanded to include homeowners and on-line access.

**Proposition 13:** 2000 water bond which authorized the State of California to sell \$1.97 billion in general obligation bonds to support safe drinking, water quality, flood protection and water reliability projects throughout the state.

**Proposition 50:** A 2002 water bond authorizing the State of California to sell \$3.4 billion worth of bonds to support safe drinking water, water security, water efficiency and protection of coastal watersheds and wetlands.

**Proposition 204:** A 1996 water bond authorizing the state of California to sell \$995 million in bonds to address Bay-Delta issues, statewide water supply and conservation, wastewater treatment and flood control and prevention.

**QSA:** Quantification Settlement Agreement. An agreement among MWD, CVWD and IID which settles long-standing disputes regarding the priority, use and transfer of Colorado River water within California. The QSA is a key provision of the California Plan.

**RUWMP:** Regional Urban Water Management Plan. State law requires that every urban water retailer and wholesaler prepare and adopt a water management plan every five years. A dictionary of MWD programs, projects and terminology.

**Sacramento Valley Phase 8 Water Management Agreement:** This refers to an agreement arising out of the State Water Resources Control Board hearings to quantify Sacramento Valley Water Users' contributions to water flow entering the Sacramento-San Joaquin Delta.

**Salinity:** The measure of the salt content of water. High salinity often results in scaling or white deposits that accumulate on coffee pots, water heaters and plumbing fixtures resulting from dissolved mineral salts in the water. Also known as total dissolved solids or TDS.

**SDIP:** South Delta Improvement Plan. Part of the CALFED Bay-Delta Program, the SDIP includes a number of actions designed to promote water quality, environmental benefits and water supply flexibility.

**Seawater barrier:** Seawater barriers protect coastal groundwater basins from seawater intrusion, typically by injecting fresh water into wells along the coast. The injected fresh water acts like a wall, blocking seawater that would otherwise seep into groundwater basins as a result of pumping.

**Supply Buffer:** Part of Metropolitan's IRP, the Supply Buffer allows for development of additional local supplies as needed to meet regional demands.

**ULFT:** Ultra-Low-Flow Toilet. ULFT's typically use 1.6 gallons per flush.

**WBIC:** Weather-Based Irrigation Controllers (also called "Smart Controllers") that adapt to current weather conditions, increasing efficiency of irrigation systems.

**Water replenishment:** Water replenishment typically refers to using either surface water or recycled wastewater to increase groundwater storage for later use. Metropolitan offers a discount for water sold for groundwater replenishment purposes. Replenishment can be accomplished through percolation, direct injection, or through in-lieu means.

**Watershed:** Geographical portion of the Earth's surface from which water drains or runs off to a single place like a river; also called a drainage area.

# Sections 130.5 and 130.7 of the Metropolitan Water District Act

## Added by Statutes of 1999, Chapter 415 (SB 60 (Hayden))

130.5. (a) The Legislature finds and declares all of the following:

(1) The Metropolitan Water District of Southern California reports that conservation provides 7 percent of its “water resource mix” for 1998, and conservation is projected to provide 13 percent of its total water resources by 2020.

Conservation, water recycling, and groundwater recovery combined, provide 12 percent of the district’s total water resources for 1998 and those water resources are projected to increase to 25 percent of the district’s total water resources by 2020.

(2) It is the intent of the Legislature that the Metropolitan Water District of Southern California expand water conservation, water recycling, and groundwater recovery efforts.

(b) The Metropolitan Water District of Southern California shall place increased emphasis on sustainable, environmentally sound, and cost-effective water conservation, recycling, and groundwater storage and replenishment measures.

(c) The Metropolitan Water District of Southern California shall hold an annual public hearing, which may be held during a regularly scheduled meeting of the Board of Directors of the Metropolitan Water District of Southern California, during which the district shall review its urban water management plan, adopted pursuant to Part 2.6 (commencing with Section 10610) of Division 6 of the Water Code, for adequacy in achieving an increased emphasis on cost-effective conservation, recycling, and groundwater recharge in accordance with this section.

The Board of Directors of the Metropolitan Water District of Southern California may modify any ongoing program as necessary to meet that requirement, consistent with the district’s urban water management plan.

(d) The district shall invite to the hearings knowledgeable persons from the fields of water conservation and sustainability, and shall consider factors of availability, water quality, regional self-sufficiency, benefits for species and environment, the totality of life-cycle costs, including avoided costs, and short- and long-term employment and economic benefits.

(e) On or before February 1, 2001, and on or before each February 1 thereafter, the Metropolitan Water District of Southern California shall prepare and submit to the Legislature a report on its progress in achieving the goals of increased emphasis on cost-effective conservation, recycling, and groundwater recharge in accordance with this section, and any recommendations for actions with regard to policy or budget matters to facilitate the achievement of those goals.

(f) Nothing in this section shall diminish the authority of the Metropolitan Water District of Southern California pursuant to Section 25 or any other provision of this act, or otherwise affect the purposes of the Metropolitan Water District of Southern California as described in existing law.

130.7. (a) The Metropolitan Water District of Southern California, in cooperation with the following entities, shall participate in considering programs of groundwater recharge and replenishment, watershed management, habitat restoration, and environmentally compatible community development utilizing the resource potential of the Los Angeles River, the San Gabriel River, or other southern California rivers, including storm water runoff from these rivers:

(1) Member public agencies whose boundaries include any part of the Los Angeles River, the San Gabriel River, or any other river in southern California.

(2) The Water Replenishment District of Southern California.

(3) Local public water purveyors and other appropriate groundwater entities.

(4) The County of Los Angeles.

(5) The United States Army Corps of Engineers.

(b) Nothing in this section affects the powers and purposes of the Water Replenishment District of Southern California or any other groundwater management entity, the County of Los Angeles, local public water purveyors, or the United States Army Corps of Engineers.

# Member Agencies



Joined Metropolitan  
December 6, 1928



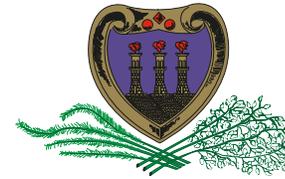
Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 6, 1928



City of San Marino  
Joined Metropolitan  
December 6, 1928



City of  
**Santa Monica**<sup>SM</sup>  
Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
February 27, 1931



**San Diego County  
Water Authority**

Joined Metropolitan  
December 17, 1946

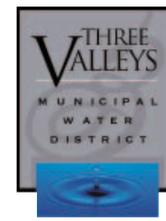


**West Basin  
Municipal Water District**

Joined Metropolitan  
July 23, 1948



Joined Metropolitan  
October 16, 1950



Joined Metropolitan  
November 15, 1950



Joined Metropolitan  
November 26, 1951



**Inland Empire**  
UTILITIES AGENCY

Joined Metropolitan  
November 26, 1951



Joined Metropolitan  
January 15, 1953



Joined Metropolitan  
November 12, 1954



**Central Basin  
Municipal Water District**

Joined Metropolitan  
November 12, 1954



Joined Metropolitan  
December 1, 1960



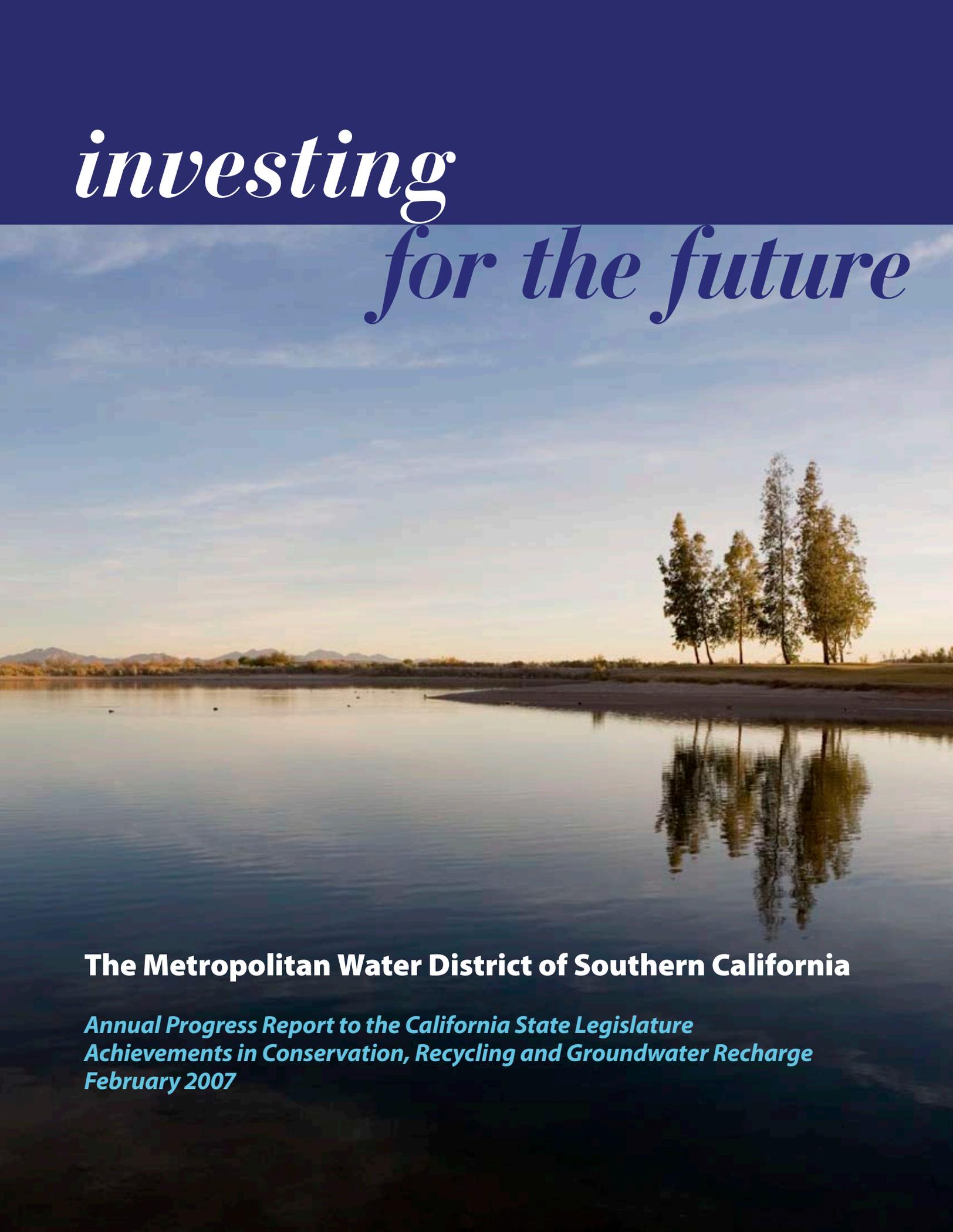
Joined Metropolitan  
December 14, 1960



Joined Metropolitan  
March 27, 1963



Joined Metropolitan  
November 12, 1971



*investing*  
*for the future*

**The Metropolitan Water District of Southern California**

*Annual Progress Report to the California State Legislature  
Achievements in Conservation, Recycling and Groundwater Recharge  
February 2007*



Robert B. Diemer Water Treatment Plant

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*For more information about this report contact Kathy Cole,  
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# *executive* *summary*





If the state of California had a theme for 2006, it might have been the “Year of Investment.” In November, California voters passed a comprehensive package of measures to add reliability to the state’s water systems, highways and schools. This underlined Californian’s growing understanding and appreciation for the need to replace, repair and renovate the state’s infrastructure.

2006 was also a “Year of Investment” for The Metropolitan Water District of Southern California. For Metropolitan, this is hardly unique. It also defines 2005, 2004 and every year going back to 1928 when the agency was first formed. That is because making investments in water supply reliability has been, and continues to be, one of Metropolitan’s primary responsibility. Metropolitan’s financial structure does more than provide affordable, reliable service for a diverse population. It also generates money for future investments that will help keep water rates reasonable, and provide an environmentally friendly and economically sound and sustainable water supply.

2006 marked a renewed commitment by Metropolitan to invest in the structural integrity of its water distribution and treatment systems with a \$1.8 billion capital investment program, along with Metropolitan’s tradition of supporting and nurturing local efforts in conservation, recycling and groundwater recharge.

The benefit from capital improvement projects, like those completed in 2005/06 and those budgeted in 2006/07, is evident. Old systems get repaired and work more efficiently. New systems are put into place that take water reliability and quality to a higher level. Structures go up, tunnels are made through mountains, and new waterways are created.

What may be more difficult to visualize are benefits of long-term investments like conservation and recycling, though they are just as significant. Some of these investments involve relatively easy lifestyle changes and produce real water savings. For each day in one household, the benefit may be measured in baby steps – a few dozen gallons here, a few hundred gallons there. But when one adds up the efforts of millions of homes and businesses over a period of months or years, there is a measurable detour from the status quo. Building on the legacy of its visionary founders, Metropolitan continues to invest in programs and projects that incrementally take us to a better place and toward a better use of our water.

## Conservation

The water supply targets for Southern California through 2025 include 1.1 million acre-feet for conservation. This goal is to be met by building upon existing conservation programs and continuing to reap the savings generated from residential and business compliance with plumbing code changes and other laws. Since 1990, Metropolitan has invested about \$251 million across the entire spectrum of its conservation programs, saving about 943,000 acre-feet of water.

Metropolitan has proven to be a leader in the support of both new technologies as well as the implementation of innovative conservation programs, earning national recognition. A five-year Conservation Strategy Plan, adopted in 2005 at the request of Metropolitan’s member agencies, supports the pursuit of new partnership opportunities with wastewater treatment agencies, energy providers and watershed manage-

**The Metropolitan Water District of Southern California** was established in 1928 by the state Legislature to import water supplies for the Southland and to educate residents on water-related issues. Metropolitan is a public agency and a regional water wholesaler.

It is governed by a 37-member board of directors representing 26 member public agencies that purchase some or all of their water from Metropolitan and serve 18 million people across six Southern California counties.

**The mission of Metropolitan is to provide its 5,200 square-mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.**

Metropolitan draws supplies through the Colorado River Aqueduct, which it owns and operates. Water supplies also come from Northern California via the State Water Project and from local programs and transfer arrangements. About half of Southern California’s water supply comes from local sources, and these local supplies include increasing conservation, water recycling and recovered groundwater, which are further described in this report.

ment groups to join in conservation programs with mutual benefit. The plan also sets forth a list of milestones, which include:

- Installing 17,500 device retrofits per year as part of a revamped regional Commercial, Industrial and Institutional Program;
- Testing the merits of synthetic turf;
- Assessing the value of emerging “smart” weather-based irrigation controllers;
- Improving existing large landscape programs with new incentives to promote irrigation efficiency; and
- Upgrading water-use efficiency guidelines for lands annexed to Metropolitan’s service area.

Metropolitan has extended its support of water-saving appliances for homes and businesses and provided increased rebates for high-efficiency clothes washers, toilets and waterless urinals. There has been a significant jump in participation in Metropolitan’s incentive-based programs since its board of directors approved higher rebate amounts in December 2005.

The effort to update appliances with more water-efficient models has also benefited from increased grant funding. Evidence of this success can be seen in the replacement program for newer high-efficiency toilets, which counts more than 14,000 to date, as well as residential clothes washers at over 175,000 retrofits to date, and the distribution of nearly 5,000 “smart” irrigation controllers.

Similar success has been measured in the commercial/industrial and institutional sector that saw nearly a 33 percent increase in the number of devices retrofitted in the second half of fiscal year 2005/06. In total, more than 80,000 devices have been retrofitted since the inception of the original pilot Commercial, Industrial, and Institutional (CII) program in 1999. There are currently several different items rebated through the CII program, ranging in incentive value from \$30 for an upgrade from an ultra-low-flush toilet to a high-efficiency toilet, to \$3,120 for installation of an x-ray film processor recirculating system.

Many of Metropolitan’s conservation activities fall under the California Friendly® Program, which was launched in 2002. In 2006, a major branding effort was undertaken to extend the California Friendly umbrella to even more products, organizations and programs that commonly make

The Home Depot has partnered with Metropolitan in promoting the California Friendly brand.



efficient use of water. The California Friendly logo was affixed to homes as well as drought-tolerant nursery plants. A pilot program will certify new single-family and multi-family homes as California Friendly, provided they meet standards for water efficiency inside and out. Following on the heels of this certification program are plans to develop a California Friendly Program for cities, schools, gardeners and businesses.

To date, Metropolitan has invested more than \$6 million in advertising and educational materials to promote its California Friendly programs and concepts. In 2006, \$2.5 million was spent on an advertising campaign to promote rebates on “smart” irrigation controllers, high efficiency toilets and clothes washers.

The California Friendly Landscape Program continues to explore ways to increase small business and large commercial site participation in incentive programs, with a target of 85,000 acre-feet of savings by 2025. Partnerships with The Home Depot and 57 independent garden retailers have led to increased availability and visibility of California Friendly plants and in-store workshops, promotions and giveaways.

A growing awareness by home buyers and remodelers of the inherent value of water-efficient landscapes and devices supports the growth of California Friendly homes. The list of participating builders that have added California Friendly model homes and homes for purchase to their developments continues to grow, and currently includes industry leaders such as Centex Homes, John Laing Homes, KB Home, K. Hovnanian, Lennar, Lewis Planned Communities, Pardee Homes, Shea Homes and Standard Pacific Homes.

Another support mechanism for creative thinking is found in Metropolitan’s Enhanced Conservation Program. Established in 2005 to encourage new and creative approaches to urban water conservation, the program recently selected 15 proposals to fund with \$1.3 million in incentives. The selected projects – which range from the development of an entire California Friendly city to an outdoor conservation retrofit model program for schools – hope to achieve a collective savings of 8,500 acre-feet of water per year at an average cost of \$150 per acre-foot.

### **Community Outreach**

In its seventh year and with a budget of \$650,000 for fiscal year 2006/07, the Community Partnering Program will support workshops, exhibits, publications and conservation messages that will benefit thousands of adults, elementary and high school students.

California Friendly plants can easily be identified by tags with the brand logo.



The City Makeover Program, another outreach tool, is part of a larger effort by Metropolitan to foster appreciation for California Friendly plants and efficient irrigation techniques in highly visible areas. In cooperation with the Federal Bureau of Reclamation, Metropolitan awarded nearly \$900,000 to 20 projects for the 2005-07 grant cycle. Five of the projects are completed; the remaining 15 will be completed by June 2007.

### **Water Recycling, Groundwater Recovery and Seawater Desalination**

Water recycling, groundwater recovery, and seawater desalination are integral and growing assets in the region's diverse resource portfolio and help bring greater water supply reliability to Southern California. Local water agencies have largely led the development of existing water recycling and groundwater recovery projects in the region. New projects are being developed with financial incentives provided through Metropolitan's Local Resources Program (LRP), a performance-based program that provides incentives to expand water recycling and recovery of degraded groundwater. A similar approach will be used to provide incentives for seawater desalination production.

The Local Resources Program continues to show steady growth – producing 127,700 acre-feet of supplies in fiscal year 2005/06 – a 15 percent increase over 2004/05. Combined with the efforts of local agencies, the total amount of recycled and recovered water grew to 282,500 acre-feet.

During 2005/06, LRP dollars helped launch programs to recycle water in the Los Angeles Harbor area, and to create a recycled water barrier against seawater intrusion in Central Basin Municipal Water District's Alamitos Barrier. The program is also being used to expand recycled water systems in Orange County and the Inland Empire.

The most recent process that began with a Request for Proposals in 2003 has now identified 10 projects that over the next quarter-century will use \$140 million of incentives to recycle and recover 58,000 acre-feet of water a year, freeing enough potable water to support more than 115,000 households.

In seawater desalination, Metropolitan remains an active partner as local agencies attempt to realize the challenging but promising transition from small-scale demonstration projects to larger-scale efforts. Metropolitan has entered into agreements with the city of Long Beach, West Basin Municipal Water District, and the Municipal Water District of Orange County to develop seawater desalination projects.

Metropolitan's California Friendly program offers incentives for businesses to install low-water-using devices like high-efficiency clothes washers and toilets. In 2005 alone, Metropolitan issued about 300,000 rebates for devices that are now saving nearly 3 billion gallons of water a year in Southern California.



### **Innovative Supply Program**

To fulfill a dual need for staying a step ahead of the conservation curve and to offer a single point of contact for evaluating new supply options and ideas, Metropolitan established the Innovative Supply Program. Grants totaling \$250,000 have been awarded to pursue new ideas for enhancing regional water supplies. Many of these projects fall into two common areas: expanded use of small-scale water recycling projects and the increased capture of stormwater runoff for groundwater recharge.

### **Colorado River Aqueduct Programs**

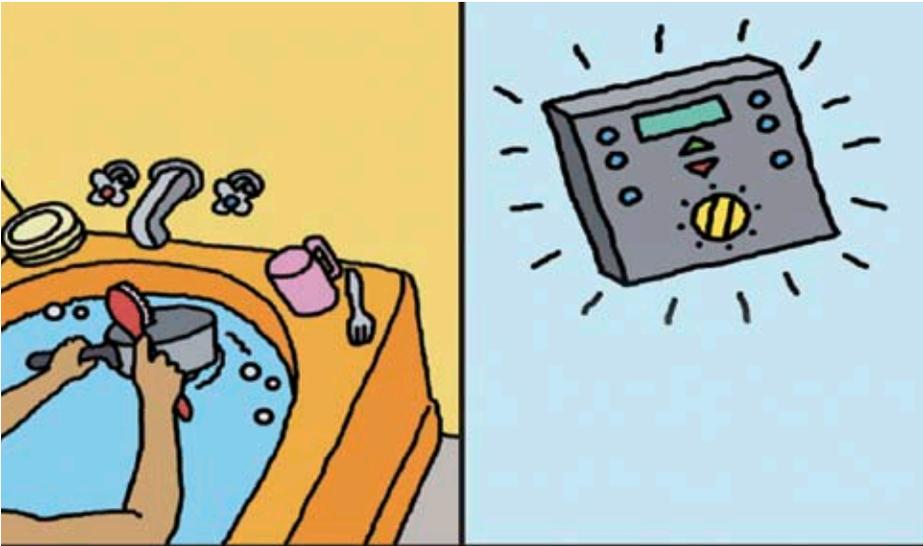
Even amid the seventh year of an historic drought, 2006 proved to be a breakthrough year on the Colorado River. Metropolitan participated in a seven-state agreement to better manage the Colorado River that recognized California's senior water right position during times of shortages. The district also reached three important pacts with the Federal Bureau of Reclamation. Among the key results, Metropolitan will be able to store water in Lake Mead that has been saved through conservation programs such as Metropolitan's mutually beneficial land fallowing program with the Palo Verde Irrigation District.

In November, Metropolitan also expanded existing exchange agreements with the Coachella Valley Water District and the Desert Water Agency that will see Metropolitan's groundwater storage program in the Upper Coachella Valley grow by one-third – creating a potential 800,000 acre-foot underground reservoir by 2010.

California's agricultural community continued its conservation partnerships with Metropolitan in 2006. The PVID program was fully operating in 2006, with 92 landowner agreements that can produce up to 110,000 acre-feet per year. A long-standing program with the Imperial Irrigation District produced 82,000 acre-feet of water, and IID's transfer program with the San Diego County Water Authority produced 40,000 acre-feet of water in 2006 (and will produce 200,000 acre-feet after 2020).

In November 2006, the first water flowed into a new concrete-lined Coachella Canal, which will conserve 26,000 acre-feet each year, with most

The outdoor conservation media campaign included ads in magazines such as *Better Homes & Gardens*, *California Landscaping*, *Newsweek*, *Sunset* and *Time*.



**Don't wash dishes while you bathe.**

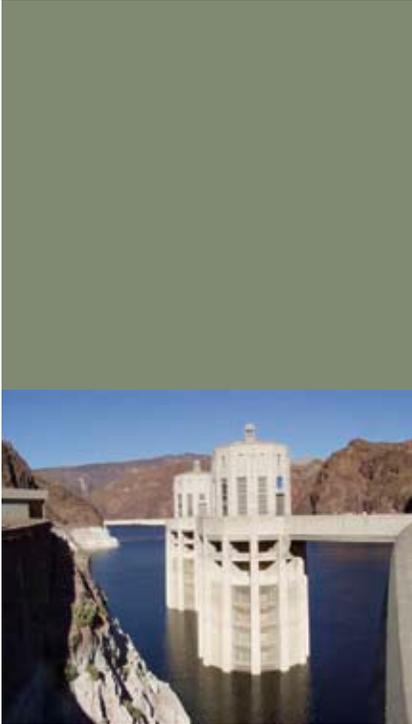
**Do get a weather-sensing smart controller for your sprinklers.**

You don't have to go to extremes to save water. In fact, it's easy. And the more water you save, the smaller your water bill.

Start with a Smart Controller for your sprinkler system. It adjusts itself automatically based on weather conditions and your type of landscape. Get one and let the savings begin.

For loads of California Friendly tips on saving water and money, check out [beaterwise.com](http://beaterwise.com).

**beaterwise.com**  
The Metropolitan Water District and the Family of Southern California Water Agencies



Lake Mead and Hoover Dam

to be delivered to the San Diego County Water Authority. An even larger project involving the lining of the All-American Canal is under review in the federal courts. At the time of writing this report, the Ninth Circuit Court of Appeals has enjoined work on this project until it issues its ruling on an appeal relating to project construction. Legislation enacted by Congress and signed by the President on Dec. 20, 2006, directs that the project be implemented immediately notwithstanding any other laws. The federal government has filed a motion asking the Ninth Circuit to lift its injunction against construction of the project.

Other major efforts included a seven-state proposal to manage the operation of Lake Mead and Lake Powell to minimize shortages to both the Upper and Lower Basins of the Colorado River. Metropolitan also worked to successfully reduce perchlorate contamination and salinity on the Colorado, and obtained a federal commitment to move the uranium mine tailings near Moab, Utah which had threatened the quality of Colorado River water and, potentially, public health.

### **State Water Project Programs**

Metropolitan received abundant supplies from the State Water Project resulting from a very wet year, and used that water to fill storage accounts as a buffer against future dry periods. Metropolitan provided more than 300,000 acre-feet of water at reduced rates so member agencies could replenish their groundwater basins. Metropolitan's "conserve and store" strategy has also allowed reservoirs at Lake Castaic and Diamond Valley Lake to be kept at high levels, even as Metropolitan built up reserves outside its service area – adding thousands of acre-feet to its Kern-Delta and Arvin-Edison Groundwater Storage Programs, and requesting up to 230,000 acre-feet of "carryover" storage water in San Luis Reservoir.

Like any prudent, long-term investment strategy, Metropolitan's practice of saving for dry years has created a diverse portfolio with some healthy account balances. In Kern County alone, the amount of Metropolitan water being banked with the Semitropic and Arvin-Edison water storage districts has hit 343,000 and 211,000 acre-feet, respectively, plus about 36,000 acre-feet with the Kern-Delta Water District. And that doesn't count nearly 95,000 acre-feet of water being stored with the Mojave Water Agency and the San Bernardino Valley Municipal Water District.

Metropolitan also continues to build relationships with the Friant Water Users Authority and the Kern County Water Agency, and while Metropolitan did not pursue water transfers in 2006 because of the abundance of supplies, it continues to work with potential water sellers to explore opportunities to negotiate and implement water transfers in future years.

### **Water Quality**

In addition to the 300,000 tests it performs each year to safeguard the region's water supply, Metropolitan continued its \$856 million program of upgrades at its five water

treatment plants, most notable of which is conversion from chlorine to ozone as a primary disinfectant. Along with its member agencies, Metropolitan is gearing up for a July 2007 start date for fluoridation of Metropolitan-treated supplies.

Metropolitan also continued its ongoing initiatives with the Salinity Action Plan, the Desalination Research and Innovation Partnership and the Southern California Regional Drinking Water Quality Planning Project, which share the common goal of improving water quality for the region with a coordinated effort.

### **Watershed and Regional Projects**

In 2006, a partnership between Metropolitan and the Los Angeles and San Gabriel Rivers Watershed Council was honored by the California Stormwater Quality Association as Stormwater Research Project of the Year among regional projects. Armed with four years of monitoring data and computer modeling showing that stormwater infiltration would not adversely impact groundwater quality if best management practices are followed, the partners are now putting together a conceptual plan that would retrofit an entire neighborhood with a comprehensive water management program.

Metropolitan also participated in the development of the Greater Los Angeles County Integrated Regional Water Management Plan that was adopted in December 2006. The plan includes more than 1,500 wide-ranging projects with the potential to serve multiple jurisdictions and provide multiple benefits.

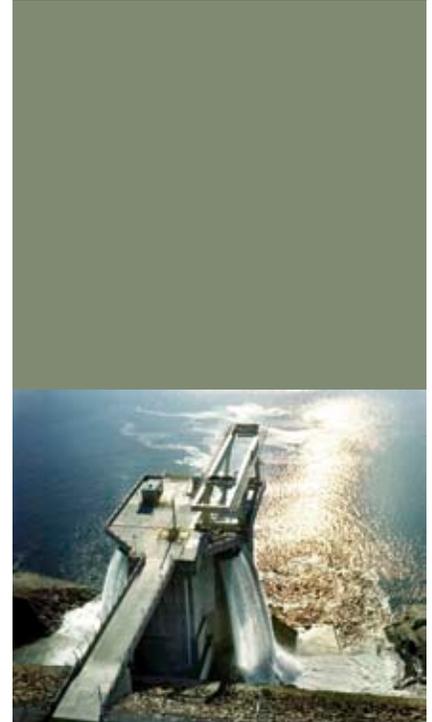
### **Southern California's Integrated Water Resources Plan**

In 2006, Metropolitan issued a second progress report on its Integrated Water Resources Plan (IRP), which was updated in 2004. The original IRP, a seminal document adopted in 1996, led to a shift toward a more diversified mix of local and imported supplies.

At this point in time, when viewed altogether, Metropolitan has currently developed programs and identified projects that will meet cumulative IRP targets through 2025. However, when viewed by category, some development components of the resource targets may be at higher risk, or previously identified options simply may not be available for implementation. Metropolitan and the member agencies will continue to refine and revise the resource targets as new information and technologies become available. Overall, the report shows that diversification works.

### **Conclusion**

With each year, Metropolitan and its member agencies continue to manage the region's water supplies to meet greater urban and environmental needs. It is a balance sought by an agency that sees its role not just as a purveyor of water, but as a resource manager. How well that resource is managed has repercussions that extend far beyond the bottom line of business. The rest of this report describes how Metropolitan is working to secure water supplies for many years to come.



Diamond Valley Lake

# *achievements scorecard*



Weekend events, coordinated in partnership with member agencies, were held to distribute free "smart" controllers.

<b>Achievements Scorecard</b>	
<b>Metropolitan-Assisted Local Resources</b>	
<b>Active Conservation<sup>1</sup></b>	
FY 2005/06 New Conservation Credits Production	6,290 acre-feet
FY 2005/06 New + Existing Conservation Credits Production	116,000 acre-feet
Cumulative Conservation Credits Production	943,000 acre-feet
FY 2005/06 New Conservation Credits Investment	\$10.6 million
Cumulative Conservation Credits Investment	\$181 million
Total FY 2005/06 Conservation Investment <sup>2</sup>	\$17 million
Total Cumulative Conservation Investment <sup>2</sup>	\$251 million
<b>Water Recycling<sup>3</sup></b>	
FY 2005/06 Production	77,334 acre-feet
FY 2005/06 Investment	\$15.2 million
Cumulative Production	823,227 acre-feet
Cumulative Investment	\$153.5 million
<b>Groundwater Recovery<sup>3</sup></b>	
FY 2005/06 Production	50,427 acre-feet
FY 2005/06 Investment	\$9.4 million
Cumulative Production	332,882 acre-feet
Cumulative Investment	\$60.2 million
<b>Metropolitan-Assisted Groundwater Programs</b>	
<b>Contractual Storage</b>	
Cumulative Investment Through 2006	\$48.8 million
Metropolitan Funds Earmarked for Programs	\$67.6 million
Prop. 13 Grant Funds Administered by Metropolitan <sup>4</sup>	\$45 million
<b>Water Rate Incentives<sup>5</sup></b>	
Cumulative Investment Through 2006	\$356 million
<b>Conjunctive Use Storage &amp; Replenishment</b>	
December 2006 Conjunctive Use Program Balance	278,820 acre-feet
Total 2006 Replenishment Certified To Date	224,037 acre-feet

1 Active conservation is water saved directly as a result of conservation programs funded by Metropolitan and other water agencies, and includes device retrofits, process improvements, landscape efficiency improvements and other efficiency measures utilized in commercial, industrial and residential sectors. Additional water is conserved as a result of plumbing codes and other laws governing appliances and other products' efficiency standards.

2 Total conservation includes the Conservation Credits program plus education and advertising campaigns to promote conservation.

3 Metropolitan has provided financial incentives to its member agencies to develop new water recycling projects and groundwater recovery projects (that make degraded groundwater potable) through its Local Resources Program (LRP); figures reflect deliveries and payments reported through June 2006.

4 Proposition 13 refers to Chapter 9 of the Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act of 2000.

5 Water Rate Incentives represent the discount in water rates Metropolitan provides to its member agencies to encourage groundwater storage. Conjunctive Use Program Balance includes Supplemental Storage Program deliveries.

# *conservation*

A vibrant drought-tolerant variety of day lily marks the entrance to a new Shea model home with a California Friendly landscape design.



Conservation is a basic element of Metropolitan's long-term water management strategy. It is both a response to expected regional population increases and the answer to uncertainties and complications that are tied to imported supplies. New water supply targets for Southern California through 2025 include 1.1 million acre-feet for conservation.

Metropolitan's service area is currently conserving 700,000 acre-feet annually, of which about 116,000 acre-feet can be identified as a direct result of Metropolitan's incentive-based programs. The 1.1 million acre-feet goal is to be met from existing conservation programs providing 250,000 acre-feet of annual savings, 550,000 acre-feet per year from compliance with plumbing codes and other laws, and 300,000 acre-feet from active program-based conservation (also referred to as incentive-based programs).

Metropolitan is a proven leader in supporting new technologies and the implementation of some of the most innovative conservation programs in the nation. Since 1990, Metropolitan has invested about \$251 million in its conservation programs, saving about 943,000 acre-feet of water.

## **Metropolitan's Five-Year Strategy for Accomplishing Conservation**

At the request of member agencies, Metropolitan developed a plan in 2005 to guide implementation of conservation programs over a five-year period, from 2005 - 2009.

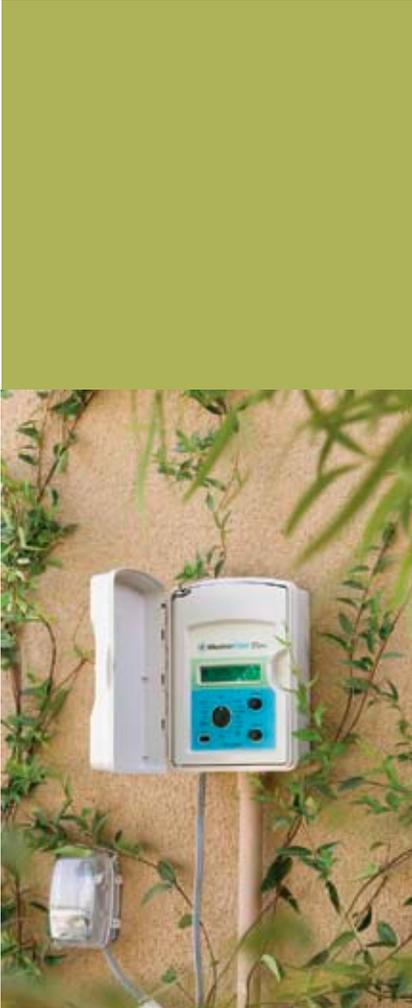
The plan provides several key developments:

1. A blueprint that describes the life cycle (from initiation through saturation) for an incentive program to retrofit water-saving devices;
2. Review of Metropolitan's existing incentive approach; and
3. A transition plan for the existing residential toilet replacement program to new manufacturing standards and technologies.

The five-year Conservation Strategy Plan also supports the pursuit of new partnership opportunities with wastewater treatment agencies, energy providers and watershed management entities.

Recent advances are listed below, and, in some cases, described in greater detail later in this report.

- Establishing a long-term regional Commercial, Industrial and Institutional program aimed at retrofitting 17,500 devices per year.
- Increasing the efficiency requirement for clothes washer incentives to achieve savings of 9,000 gallons per device per year.
- Improving the existing large landscape program with new options to receive incentives for irrigation efficiency.
- Showcasing water-efficient devices and landscapes in model homes.
- Testing the merits of synthetic turf.



Metropolitan and its member agencies saw a tripling of rebates processed for smart controllers for the first half of 2006.

- Revising Metropolitan’s landscape irrigation efficiency training programs to better inform residents and landscape professionals about new technologies and approaches.
- Assessing the value of emerging weather-based irrigation controllers.
- Upgrading water use efficiency guidelines for lands annexed to Metropolitan’s service area.
- Simplifying administrative steps and aggressively marketing incentive programs targeting industrial improvements to achieve water savings.
- Providing creative marketing and promotions that encourage replacement of turf grass with water-efficient California Friendly landscapes.
- Participating in a statewide task force to assess upgrading municipal ordinances for landscape water use efficiency.
- Promoting Metropolitan’s *bewaterwise.com* Web site, which helps homeowners create and maintain California Friendly landscapes by providing a variety of tools and information, including a reference database of about 1,000 plant species.
- Renewing grant opportunities for Metropolitan’s City Makeover and Community Partnering Programs.

### ***Incentive-Based Programs***

Metropolitan’s incentive-based programs are complemented by public education and outreach activities, many of them part of the California Friendly marketing effort.

### **Residential Indoor and Outdoor Activities**

Move over low-flow, here comes high-efficiency. With a change in focus and a swap of acronyms, HET for ULFT, Metropolitan extended support of water-saving appliances for homes and businesses and provided increased rebates for high-efficiency clothes washers, toilets and waterless urinals. After the Metropolitan Board of Directors increased the water conservation incentive from \$154 to \$195 per acre-feet in December 2005, Metropolitan saw an increase in member agency distribution of rebates across its service area in the second half of the fiscal year.

The residential indoor program target for water savings is about 135,000 acre-feet by 2025, a 47,000 acre-foot increase from today’s levels.

### ***High-Efficiency Toilets***

As part of Metropolitan’s December 2005 board action, Metropolitan approved a \$165 incentive for High-Efficiency Toilets (HET), which use even less water than Ultra-Low-Flow Toilets (ULFTs). Metropolitan is encouraging the use of HETs to drive the use of higher-efficiency devices. Metropolitan has provided incentives for about 14,000 HETs to date.

### **High-Efficiency Clothes Washers**

Metropolitan has retrofitted more than 175,000 residential clothes washers since the incentive program began in 1995. As a direct result of grant funding and an increased incentive, high-efficiency clothes washers are currently being installed at a rate of about 30,000 retrofits per year.

### **“Smart” Irrigation Controller Rebate**

This year also saw a concerted effort to reach residential customers with water-saving technology tips. “Smart” irrigation controllers, many of which use a combination of weather and historical data to automatically adjust irrigation schedules, have been a particular focus of Metropolitan and its member agencies. Together, these agencies have explored different ways to provide the general public with irrigation controllers, each of which is estimated to save about 13,500 gallons a year for their 10-year estimated life.

Nearly 5,000 controllers have been retrofitted since the inception of the program, with Metropolitan and its member agencies logging a tripling of rebates between January and June 2006.

Successful strategies for getting the controllers into the hands of consumers include direct distribution to homeowners who attend Metropolitan’s landscape irrigation efficiency training and free exchange programs. Consumers can obtain new “smart” irrigation controllers by exchanging their old ones. These exchanges are hosted by member agencies and sponsored using Proposition 13 grant funds.

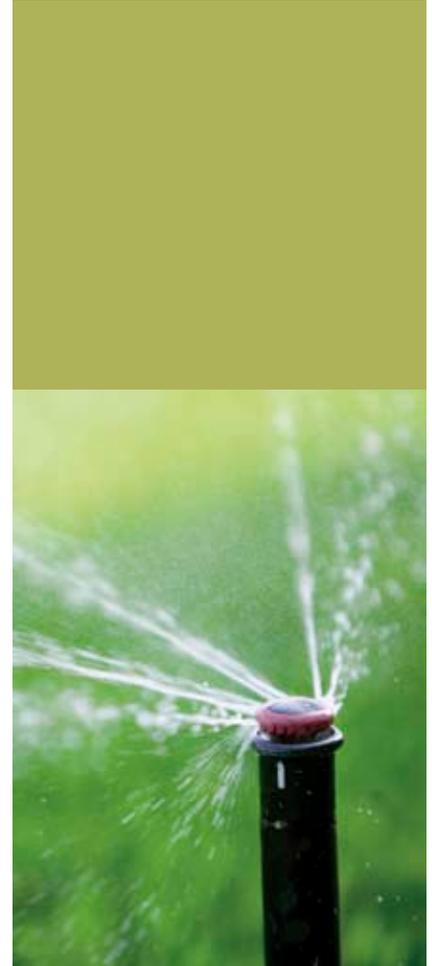
### **Protector del Agua Irrigation Efficiency Training**

Metropolitan successfully completed a \$25,000 *Water for the West* grant project that brought online two residential Protector Del Agua (PDA) courses which provide Web tutorials for landscape irrigation training. In addition, Metropolitan received the federal Bureau of Reclamation and state Proposition 50 grants to complete development of Web-based landscape irrigation efficiency training that targets residential and landscape professionals.

The PDA program continues to successfully link irrigation efficiency training with distribution of free “smart” controllers as a vehicle for residential participants to install these devices in their homes. Over the past year, Metropolitan partnered with its member agencies and held distribution events throughout the service area, exchanging about 300 units with more efficient, state of the art devices.

Metropolitan also partnered with Central Basin MWD and Cerritos College, offering a class to test the public “willingness-to-pay” response by requiring registered participants to share a portion of the class fees. Twenty-five registered students shared in paying a portion of the class, and took advantage of the “smart” irrigation controller exchange.

To date, more than 1,800 classes were provided in the PDA Program with participants exceeding 4,700, increasing the total number of graduates to more than 40,000 since program inception.



With up to 70 percent of the region’s water used outside the home, Metropolitan’s conservation message had to address landscaping water needs.



A pilot program spurs the installation of synthetic turf on previously irrigated municipal and public lands.

### **Synthetic Turf Program**

Metropolitan continues to seek turf alternatives to conventional warm season grasses. One alternative will be demonstrated in a garden planned for the Water Education Center in Hemet, and will show the results of long-term turf grass research by UC Riverside, funded by Metropolitan in the 1980s and early 1990s. The garden will have a hybrid warm season turf that holds its green color longer into the fall than conventional warm season turf grasses, while using about 20 percent less water.

Metropolitan and the federal Bureau of Reclamation are also continuing to move forward with the \$261 million pilot Synthetic Turf Program that provides financial incentives on a competitive basis to evaluate the benefits of installing synthetic turf on previously irrigated, municipal and public lands. A few of the program's major goals are to investigate and quantify actual water savings, reduce the use of fertilizers, pesticides and insecticides introduced into the urban runoff stream, and better understand public acceptance of synthetic turf.

The program has been under way since June 2005 and is currently in its final phases. Comprehensive reviews will be conducted for each project and compiled into a report. Metropolitan has received seven of 10 final reports for the following projects:

- Irvine Ranch Water District's Central Orange County Turf Replacement Project;
- City of Glendale's Sports Complex Soccer Fields Project;
- Eastern MWD's West Valley High School Stadium Field Renovation;
- San Diego County Water Authority / City of Vista: Townsite Park Soccer Field;
- West Basin MWD's Fred Kelly Stadium Renovation; and
- Upper San Gabriel Valley MWD's La Puente and Gabrielino High School Athletic Field Projects.

### **Commercial/Industrial/Institutional Program**

In the 1990s, Metropolitan analyzed on-site water use at more than 900 businesses and institutions and consistently recommended certain water-savings measures. Although varying by business, recommendations included toilet retrofits, irrigation efficiency tune-ups, adjusted cooling tower operations and installation of simple controls that stop water flow when it is not necessary. To address this niche of water saving opportunities, Metropolitan developed its current CII program that includes two components.

1. Rebates – fixed rebates for common fixture retrofits or installations.
2. Process Improvements – customized financial incentives for water-use process improvements on a pay-for-performance basis, which is typically applied to manufacturing and industrial applications.

Following a pilot program in 1999, Metropolitan and its member agencies instituted a business model based on a regionally administered program to provide customers with one-stop incentive shopping services.

<b>CII Program Device Rebates</b>	
<i>Device</i>	<i>Incentive</i>
Ultra-Low-Flush Toilet (gravity and flush valve)	\$135
High-Efficiency Toilet (HET)	\$165
Upgrade from ULFT to HET	\$30
Zero-Water Urinal	\$400
High-Efficiency Urinal	\$200
High-Efficiency Urinal Upgrade	\$60
Pre-Rinse Spray Valve	\$60
High-Efficiency Clothes Washer	\$130
Waterbroom	\$150
Connectionless Food Steamer (per compartment)	\$485
Cooling Tower Controller	\$625
Cooling Tower pH Conductivity Controller	\$1,900
X-Ray Film Processor Recirculating System	\$3,120
Steam Sterilizer	\$1,900
Rotating Irrigation Nozzles	\$4
Weather-Based Irrigation Controllers (per acre)	\$630

In the second half of fiscal year 2005/06, the number of devices retrofitted increased by 33 percent compared to the number of devices retrofitted in the first half of the fiscal year. In total, more than 25,000 devices have been retrofitted since January 2005 when the new program started, and more than 80,000 devices have been retrofitted since inception of the original pilot program. Metropolitan is exploring the development of new partnerships with energy utilities to increase program participation through co-funding and other mutually beneficial projects.

<b>CII Performance (January - June 2006)</b>	
Applications Processed	906
Devices Retrofitted	10,410
Metropolitan Cost	\$1,986,330
Member Agency Cost Share	\$445,060
Water Saved (over life of the device)	9,600 acre-feet



A new agreement with Kimberly-Clark Corporation projects an estimated water savings of 550 acre-feet per year.

## Industrial Process Improvement Program

Metropolitan's Industrial Process Improvement Program provides incentives to industrial customers to improve water efficiency. Incentives have been offered since 1997 and the program was streamlined in 2004 to make it more responsive to the needs of business participants.

Recent developments include Metropolitan board-approved funding of \$500,000 for an agreement with Kimberly-Clark Corporation in the city of Fullerton. Kimberly-Clark will invest about \$1.8 million for water-efficient processes that include a reverse osmosis system and collection tanks to recover water for reuse in the paper tissue-making processes, saving an estimated 550 acre-feet per year. Also, two new agreements for water-efficient projects were executed with AmeriPride Uniform Services in the city of Vernon and Nu-Tec Powder Coating in Anaheim that will collectively save about 64 acre-feet annually.

## Enhanced Conservation Program

In December 2005, Metropolitan's board approved the Enhanced Conservation Program, which takes Metropolitan's established conservation incentive program one step further to encourage new and creative approaches to urban water conservation. The competitive, request-for-proposal process elicited 22 responses, of which 15 were selected for implementation by a seven-member, multi-interest evaluation panel. The 15 projects, slated to receive \$1.3 million of conservation credit incentives, will save an estimated 8,500 acre-feet of water at an average cost per acre-foot of \$150. Project managers will have four years to complete and report their results.

Commercial buildings using large cooling towers can benefit from water-saving incentives and new technologies.



<b>Enhanced Conservation Projects Selected</b>		
<b>Member Agency</b>	<b>Project Title</b>	<b>Est. Savings (acre-feet)</b>
Central Basin Municipal Water District	Bell Gardens: California Friendly City	430
Eastern Municipal Water District	California Friendly Communities: Landscape Incentive Program for New Communities	74
Inland Empire Utilities Agency	Water Softener Salinity Reduction Program	390
Long Beach Water Department	Municipality's Introduction to Ultra-Low-Water-Using Landscapes for Street Medians	238
Los Angeles Department of Water and Power	Community Based Organization Waterbroom Distribution Program	767
Municipal Water District of Orange County	Water Budget Billing System Development for Community-Wide Water Efficiency	2,000
Municipal Water District of Orange County	Restaurant Retrofit Package Program	157
Municipal Water District of Orange County	ET Public Data via Web Services Project Phase II	473
Municipal Water District of Orange County/Three Valleys Municipal Water District/Upper San Gabriel Valley Municipal Water District/West Basin Municipal Water District	Salon Saver Sprayer Replacement Program	230
San Diego County Water Authority	Landscape Auditor Interns	1,181
San Diego County Water Authority	Rincon del Diablo MWD Residential Water Budget Pilot Program	625
West Basin Municipal Water District	Comprehensive Landscape Program	525
Western Municipal Water District	School Outdoor Conservation Retrofit Model Program	129
Western Municipal Water District	Rancho California Water District Two-Way Communication, Internet-Based, Smart Controller Installation Program	860
Western Municipal Water District	High-Efficiency Toilet Direct Installation Program for Southwestern Riverside County	426
<b>Total</b>		<b>8,505</b>

Research conducted by Metropolitan found that a barrier to saving water for most homeowners was not knowing how much water their plants need. Bewaterwise.com can answer that question and many more.

## California Friendly® Programs

In 2006, Metropolitan and its member agencies launched a major branding effort to make it easier for consumers to identify which products, organizations and programs out of the many available to them, make efficient use of water. The California Friendly brand aims to make it second nature for Californians to select products and services that will help the state through wise water usage and conservation.

Research conducted by Metropolitan in fall 2005 found that the biggest barrier to saving water for most homeowners is not knowing how much water plants need. About 81 percent of respondents said they would purchase more drought-tolerant plants if they were clearly labeled as such.

In response, the California Friendly brand was affixed to drought-tolerant plants as well as to programs and homes. There are plans to expand the branding effort so that products, builders, businesses, gardeners and cities can carry the California Friendly

designation. Components of the California Friendly program are described below.

### California Friendly Outdoor Conservation Outreach Program

Beginning in fall 2002, the Board has authorized advertising, education and public outreach campaigns to educate homeowners and businesses on the need to conserve water. To date, Metropolitan has spent about \$6 million in advertising and educational materials to spread the word of water conservation throughout its six-county service area.

### California Friendly Marketing and Advertising

Education efforts under the California Friendly umbrella include the *bewaterwise.com* Web site, which attracted about 175,000 visitors in 2006.

Metropolitan spent \$2.5 million for radio, television, online, and print advertising in 2006. A spring campaign focused on promoting rebates on “smart” sprinkler controllers, high-efficiency toilets and high-efficiency clothes washers. A fall campaign asked homeowners to reduce their usage (time or frequency) and plant California Friendly varieties.

The screenshot shows the homepage of **bewaterwise.com**, which is part of the Family of Southern California Water Agencies' California Friendly Garden Guide. The site features a navigation bar with links to Home, Garden Spot, Rebates, Events, Contacts, and Sitemap. A prominent section titled "SMARTY PLANTS" includes a grid of colorful flower images and links to "The Garden Spot", "Find a Retailer", and "Plant Search".

Key sections on the page include:

- The Garden Spot:** Offers on-line resources like gardening classes, garden designs, and a searchable plant database. Includes a "Click Here >>" link.
- The Watering Index:** Shows the current watering index is 50%. Includes links for "About the Watering Index", "Santa Barbara County Residents", "Coachella Valley Residents", and "Create your own custom watering schedule >>".
- Focus on Home:**
  - Rebates from \$30 - \$630:** Save hundreds of dollars while upgrading your home or business with the latest water-saving technologies and strategies.
  - Water Saving Tips:** It's easier than you think to save water. Find out how with these quick tips.
  - Get the Book:** Copies of the new "Care & Maintenance of Southern California Native Plant Gardens" book are available through the California Native Plant Society 916-447-2677, Rancho Santa Ana Botanic Garden 909-625-8767 or Theodore Payne Foundation (818) 768-1802.
- Focus on Business:**
  - Rebates from \$30 - \$3,120:** The Save A Buck Program offers rebates to save your organization money.
  - California Friendly Homes:** Incentives for builders - landscapers.
  - Industrial Process Improvement Program:** Incentives for industrial water saving improvements.
  - Large Landscape Program:** Step up to the latest water-saving devices and strategies for sites of one acre or more.
- Focus on Non-Profits:**
  - The City Makeover Program:** The application period is now closed. Please click here for information on the program.
  - Grants & Sponsorships:** Metropolitan Water District is offering grants and scholarships to public agencies, non-profits, businesses for water conservation-related activities.

### Consumer Research

During 2006, Metropolitan conducted four consumer research suveys. Two tracked consumer attitudes and awareness regarding water conservation messaging and behaviors, and two focus group studies examined consumer buying habits and perceptions of low-water-using plants.

### California Friendly Landscape Program

Metropolitan continues to explore ways to increase small business and large commercial site participation in landscape water-efficiency incentive programs. Marketing and outreach efforts continue to be refined to improve market penetration among potential beneficiaries of landscape incentives. The landscape program target is approximately 85,000 acre-feet by 2025.

The California Friendly Landscape program has received one of the water industry's highest honors for environmental stewardship. In December, the Association of California Water Agencies presented the 2006 Theodore Roosevelt Environmental Award for Excellence to Eastern Municipal Water District for its role as the local implementing agency for the first phase of this program.

### California Friendly Plants

In fall 2006, Metropolitan assembled a panel of experts to approve the official California Friendly plant list. This list of nearly 300 plants encompasses water-wise, low-maintenance and beautiful plants that are either California natives or from similar Mediterranean climates.

Metropolitan then partnered with The Home Depot and 70 independent garden retailers to feature the plants in stores during the fall planting season. Participating retailers acquired

A promotional graphic for the California Friendly Plant Program. At the top, a blue banner contains the text "Great color, easy care, and they save water" in white serif font. Below this is a grid of 18 small images showing various colorful flowers in shades of purple, yellow, red, and pink. In the bottom right corner, there is a circular logo with a yellow flower in the center, surrounded by the words "CALIFORNIA FRIENDLY" in a blue arc. Below the logo, the word "plant" is written in white on a green background, flanked by two white dots. At the bottom of the graphic, a green banner contains the text "Available at participating retailers" in white. Below that, in a smaller font, it says "Brought to you by the Metropolitan Water District of Southern California and the Family of Southern California Water Agencies". At the very bottom right, the website "bewaterwise.com" is displayed in white on a dark green background.

more plant stocks, grouped them together and used colorful, informational displays provided by Metropolitan. Partnering opportunities include collaborative advertising programs, in-store giveaways, and distribution of conservation-related materials provided by Metropolitan. An advertising campaign promoted the effort throughout Metropolitan's six-county service area.

### **California Friendly Home Program**

Partnerships with local, regional and national homebuilders, with support from the California Building Industry Association and Federal Bureau of Reclamation, have resulted in growing awareness by home buyers and remodelers of water-efficient landscapes and devices, and many new homes being built to California Friendly specifications.

Incentives are currently offered to builders to offset the costs of equipping model and production homes with water-efficient fixtures and landscapes that exceed current codes. In fact, homes built with California Friendly specifications are designed to use 30 percent less water than conventional homes. Homeowners and local community leaders' responses to the first generation of these developments has been positive, and is helping to promote new offerings for multi-family projects such as high-rise residential towers and condos.

Evidence of success comes in many forms. One notable success is the addition of two new Southern California homebuilders that are adding model and production homes with landscape designs that meet California Friendly specifications. The list of readily recognized names in the building industry that are adopting the California Friendly mantra includes:

- Centex Homes
- John Laing Homes
- KB Home
- K. Hovnanian
- Lennar
- Lewis Planned Communities
- Pardee Homes
- Shea Homes
- Standard Pacific Homes

### **California Friendly Home Certification**

A pilot program is being designed to certify new single-family and multi-family homes as California Friendly if they meet standards for water efficiency inside and outside the home.

The participation of homebuilders in the California Friendly Model Home program includes some of the nation's largest and most prominent companies, including John Laing Homes pictured here.



<b>Financial Incentives Available to Homebuilders*</b>		
<b>Single-Family Detached Projects</b>		
Water-Efficiency Measure	Model Homes	Production Units
California Friendly Landscape (2,000 sq. ft. maximum)	\$.80/sq. ft.	N/A
"Smart" Irrigation Controllers	\$200	\$80
Rotating Nozzles for Pop-up Spray Heads	\$4	\$4
High-Efficiency Toilets (3 unit maximum)	\$100	\$30
High-Efficiency Clothes Washer (Water Factor 6.0 or better)	\$400	\$75
<b>Multi-Family Projects &amp; Homeowner Association Areas</b>		
Water-Efficiency Measure	Model Homes	Common HOA Areas
California Friendly Landscape (10,000 sq. ft. maximum)	\$.80/sq. ft.	N/A
"Smart" Irrigation Controllers (Irrigated Area Only)	\$630/acre	\$630/acre
Rotating Nozzles for Pop-up Spray Heads	\$4	\$4
High-Efficiency Toilets (3 unit maximum)	\$100	\$30
High-Efficiency Clothes Washer (Water Factor 6.0 or better)	\$400	\$130
<i>*Up to actual hardware cost</i>		

## Education Programs

During 2006, Metropolitan and its member agencies reinforced the conservation message and met education content standards and testing criteria by making education materials, activities and events available to more than 96,000 K-12 students and 11,259 new program teachers throughout the service area. Key curriculum programs included All About Water (grades K-3), Admiral Splash (grade 4), Water Ways (grade 5), Water Times (grade 6), Water Quality (grades 7-12), Water Politics (grades 9-12) and Water Works (grades 6-12).

Pasadena City College was one of 10 recipients of grants to develop water saving technologies that could be used in water-stressed regions locally and abroad.



### **Education Programs' Strategic Plan**

In August 2006, Metropolitan's board approved the Education Programs' Strategic Plan. It will ensure Metropolitan continues to develop and support top quality curriculum, classroom materials and programs that are regional in scope and serve to protect water resources and infrastructure, in support of Metropolitan's mission. The plan was developed in response to three ongoing education outreach challenges for Metropolitan and our member agencies:

1. Growth in Metropolitan's service area, and the corresponding increased number of schools, particularly in the Inland Empire;
2. The need to meet content standards and testing criteria for teachers and administrators in K-12 schools, in addition to expanding to college-level collaborations;
3. The need to address increasing duplication of services in water and environmental education programs.

### **World Water Forum**

Metropolitan completed the first cycle of its innovative Southern California World Water Forum college grant program. This competitive grant program for community colleges and four-year colleges and universities awarded \$120,000 for research and development of water-use efficiency technologies that can be implemented cost-effectively in water-stressed regions, locally or globally. By May 2006, 11 teams from eight area institutions had completed and presented their projects. The selected schools and projects are listed.

Assessment by program participants and the advisory committee found that the grant program had exceeded expectations, leading to a second cycle to begin in January 2007. Funding will be increased to \$150,000 and new and previously funded projects will vie for grant funds under revised criteria.

Metropolitan's World Water Forum partners include the federal Bureau of Reclamation, the Sanitation District of Los Angeles County, the United Nations and other major federal, state, county and engineering groups, including the American Society of Civil Engineers.

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<b>Colleges &amp; Universities Awarded Grants</b>	<b>Focus Of Water-Use Efficiency Technology R&amp;D</b>
University of Southern California	New Showerhead Design with Touch Activated On/Off Switch
University of Southern California	Pollutant Removal and Economic Evaluation of Catch-Basin Devices
University of Southern California	Benefits of Water Well Rehabilitation
University of Redlands	Native Landscape Choices of Redlands
University of California, Riverside	Rooftop Rainwater Harvesting
California State University, Long Beach	Conservation of Irrigation Water by Onsite Recycling
California State University, Long Beach	Integrating Marginal Cost Water Pricing and BMP
Loyola Marymount University	Economical Dual-Flush Retrofit Kit
Pasadena City College	Bio-Filtration of Household Graywater: An Ecological Approach
California State Polytechnic University, Pomona	Water-Efficient Landscapes
Los Angeles City College	Water Conservation Through Elementary Education

### **Solar Cup 2006**

Metropolitan's highly successful fifth annual Solar Cup 2006 solar boat competition program increased in size from 29 to 34 high school teams, and was sponsored by 11 of Metropolitan's member agencies. Student teams constructed solar-powered boats and then competed in endurance and sprint races at Metropolitan's Lake Skinner, showcasing environmentally friendly technology that may prove crucial in addressing drinking water quality issues. The visual display element required teams to feature water conservation technologies using solar power.

In 2006, the focus was on researching and creating presentations on important water issues. The event attracted more than 3,500 school, family and public attendees, along with extensive local newspaper coverage and national media exposure, including key morning television news programs. Representatives from Sydney, Australia visited to observe and explore the possibility of creating a similar competition Down Under.

### **Inspection Trips**

In 2006, Metropolitan helped more than 2,450 community members learn about conservation, water recycling and sensible water management as they inspected parts of the Colorado River Aqueduct, Diamond Valley Lake, the State Water Project, northern Sacramento River Valley water projects, and agricultural centers. A number of the Southern California-based trips provided visits to California Friendly home developments.

These one- to three-day trips sponsored by members of Metropolitan's board featured local water conservation projects, as well as water policy collaborations among other water and stakeholder agencies and Metropolitan. The participation of community, education, business, environmental and legislative leaders and decision-makers is critical for teaching Metropolitan's constituents about their responsibility in ensuring a reliable, sustainable water supply.

### **Community Partnering Program**

In its seven-year history, the Community Partnering Program (CPP) has provided more than \$3.5 million toward grass roots efforts in an ever-evolving mission to educate the public about saving and using water wisely. During 2006, the CPP focused on watershed education, conservation and California Friendly native plant garden issues in Southern California. Consisting of nonprofit community organizations, public agencies, professional associa-

Teams from 34 Southland high schools competed in the 2006 Solar Cup competition.



tions and educational institutions, CPP recipients were awarded funds for activities that included educational collaboration, policy forums and a wide range of water resources education programs. With a budget of \$650,000 available for fiscal year 2006/07, CPP sponsorship contributions will reach thousands of adults along with elementary and high school students. The sponsorships will fund workshops, development of online college classes, water resources curricula and exhibits, California Friendly plant guides and signage, plus conservation messages in print and electronic versions. More than 600 nonprofit groups support Metropolitan's mission to provide the region with reliable, high-quality water supplies, and offer fresh approaches to Southern Californians to effect immediate, lasting change in water use.

***The following represents a few organizations that have received CPP sponsorships:***

**California Resource Connections**

***Think River!***

Supports the development of an Azusa-based youth watershed education hands-on program for teachers and youth (grades 4-6) regarding local water supply/use, water quality, geology, plants and wildlife, and other watershed science topics relevant to the Santa Ana and San Gabriel rivers. The overall program includes teacher workshops and youth watershed conferences. A weekend watershed education program introduces the general public to local watershed issues.

**Chino Youth Museum**

***Interactive "Waterworks" Exhibit***

Co-sponsors the re-engineering of a popular hands-on "Waterworks" exhibit designed for elementary schoolchildren. Children will learn about pumps, valves and the flow of water from reservoirs to homes and businesses.

**Southern California Chinese-American Environmental Protection Association**

***"We Know and We Care" Water Awareness Campaign***

This water awareness outreach campaign tackles indoor and outdoor water conservation issues through a strategic media campaign targeting Mandarin and Cantonese speaking residents in Metropolitan's service area.

**City of Oceanside**

***Project SWELL – Stewardship: Water Education for Lifelong Leadership***

Supports the creation of watershed model exhibits for San Diego Coastkeeper's Project SWELL – Stewardship: Water Education for Lifelong Leadership – into the Oceanside Unified School District. The initial plan is to reach 1,700 fifth-graders in 18 Oceanside USD schools.

**Inland Empire Utilities Agency**

***Water Fair***

This Montclair community water resources fair focuses on at-home conservation practices for elementary school children with age-related activities and crafts. Funds will be used for signage and promotional material for the fair. The agency partners with 10 neighboring water districts to create a regional event for local school districts.

**City of Oxnard*****Children's Water Science Exploratorium***

Sponsors the reprinting and updating of electronic and print material for the fourth annual event for 3,600 elementary schoolchildren in Oxnard's three school districts. It teaches about the water cycle, groundwater and surface water protection, wetlands preservation, recycling, pollution prevention, water treatment, distribution, conservation and local environmental issues. The city partners with Citicorp and a local high school youth group, whose students serve as educational activity assistants.

**Ocean Institute*****Watershed Learning Laboratory***

Expands on a prior Community Partnering Program sponsorship of the Institute's weather and watershed learning exhibit for students and adults. The Dana Point-based organization uses exhibits, teaching stations, and environmental simulations to enhance their educational watershed awareness programs.

**Manhattan Beach Botanical Garden*****Interpretive Native Plant Signage***

Sponsors interpretive native plant signs at this South Bay garden to inform the public and school groups about California Friendly plants and water conservation.

**The Nature Conservancy*****Annual Santa Margarita River Watershed Clean-up***

Co-sponsors publicity for this Riverside County river clean-up, which attracts some 500 local volunteers for the day-long event. Provides volunteers with information on how a watershed clean-up impacts groundwater basins. More local groundwater supply means less dependence on imported supplies.

**Ventura County Resource Conservation District*****Guide to Streamside Native and Invasive Plants***

Co-sponsors a detailed guide with information on what local native plants to use and which invasive plants not to use for local developers, gardeners and homeowners; developed in partnership with the Ventura County Watershed Protection District.

**City Makeover Program**

The City Makeover Program is part of a larger effort by Metropolitan in cooperation with the federal Bureau of Reclamation to foster the appreciation of California native and drought-tolerant plants and efficient irrigation techniques in public, commercial and residential landscapes.

Understanding that seeing is believing, Metropolitan offers grants to encourage cities, public agencies and non-profit or community-based organizations to trade in their traditional water-thirsty landscapes for something more California Friendly.

For the 2005-07 grant cycle, Metropolitan awarded nearly \$900,000 in grants to 20 projects. Five of the projects are completed, and the remaining 15 will be completed by June 2007.

The city of Oxnard's demonstration garden adjacent to its public library is a finalist for the National League of Cities 2006 Awards for Municipal Excellence.



Pierce College Botanical Garden



### ***Signature Grants***

Grants up to \$75,000 were offered for high-visibility, public landscapes featuring native and California Friendly plant palettes and state-of-the-art irrigation, including community involvement and education components.

#### **Barnsdall Park Great Lawn Landscape Restoration**

##### ***Los Angeles***

Barnsdall Park is located in the Hollywood/Los Feliz area of Los Angeles near Griffith Park. The project replaces the “great lawn” area of the park with an expansive hybrid Bermuda lawn bordered by native shrubs and plants that will be both beautiful and functional. The proposed design, while seemingly simple, offers park visitors a practical landscaping alternative to thirsty cool season turf found at most residences in Southern California.

#### **Aquarium of the Pacific Watershed Garden**

##### ***Long Beach***

Using reclaimed water and low-water irrigation techniques, a new watershed garden will represent hydrological zones occurring along the coastal slopes and at the mouth of the Los Angeles and San Gabriel watersheds. Landscaped areas will include the coastal scrub habitat and the freshwater marsh/wetland habitat on the ground level and the coastal bluff habitat built on top of an environmental education classroom as part of an innovative green roof design. Irrigation for the green roof will be provided by recycled water, pumped to the roof from a gray water sump, which is charged by the sink outside of the classroom building. Runoff captured from daily maintenance will be used to create a freshwater marsh.

#### **Pierce College Botanical Garden**

##### ***Woodland Hills***

The Pierce College Life Sciences faculty designed the Pierce College Botanic Garden as a teaching tool to demonstrate how plants from the seven major worldwide Mediterranean climate zones have adapted to conditions similar to those in Southern California. The 1.9-acre site is located in the heart of the campus and features areas of coastal sagebrush and chaparral reflecting the flora of the surrounding Santa Monica Mountains and Channel Island areas, replacing more than 80,000 square feet of lawn. Instructors use the various areas of the garden for writing circles, study of plant adaptations to the Mediterranean climate and study groups.

#### **Garden at the Kumeyaay-Ipai Interpretive Center**

##### ***Poway***

The garden project is part of a bigger plan to improve the five-acre Kumeyaay-Ipai Interpretive Center, which is historically significant as an ancient Kumeyaay Native American village with features such as boulders with deep grinding holes once used to process acorns. The interpretive center will be a place to learn about the Kumeyaay people, the natural environment and native plants of the region; the surrounding garden will be an outdoor classroom where visitors can learn how plants were used for food and medicine by the Kumeyaay tribes.

### **Rancho Santa Ana Botanical Garden Container Garden**

#### ***Claremont***

Rancho Santa Ana Botanical Garden will establish an 8,050-square-foot California Natives container garden with accompanying information about how to create and maintain attractive water-and-space-efficient native plant container gardens for residential and commercial use.

### **The Best of California**

#### ***Orange***

This project creates a heritage landscape in a 2.5-acre corner of the Santiago Canyon College campus, replacing a Christmas tree farm and featuring native California plants, as well as California Friendly trees planted at strategic points for use by arboriculture students.

### **Paradise Creek Educational Park**

#### ***National City***

The project will restore a degraded urban creek on a half-acre site by providing a wetland pond vegetated with salt marsh plants, coastal sage upland habitat, and interpretive signage to educate the public about the watershed and environmental issues. Public access will be enhanced with the addition of pathways (including a boardwalk), seating areas, and overlooks.

### **Rose Haven Heritage Garden Project**

#### ***Temecula***

About one quarter of the 3.4-acre site is already developed with 1,000 rose bushes, trees and shrubs. The project will incorporate native plantings, water efficient non-native areas, herb garden, habitat garden and wildflower meadow to create a heritage rose garden with companion plantings.

### **Land Use Learning Center**

#### ***Riverside***

The three-acre garden at the Riverside-Corona Resource Conservation District Center demonstrates sustainable methods that conserve natural resources in the three main land uses of Southern California: Native habitats, urban areas, and agricultural lands. There will be four distinct types of California Friendly yards, an "Arbor Walk" that interpret urban forestry concepts and benefits, and comparative plantings of ground covers and turf plots to demonstrate water savings and serve as examples for homeowners.

### **Fullerton Arboretum Visitor's Center**

#### ***Fullerton***

The Arboretum's new visitor's center pays homage to the area's connection to the citrus industry, and resembles the architecture of an early 1900s citrus packinghouse. The landscaping outside will also be a nod to that heritage, with a mix of citrus and regionally native plants that demonstrate their architectural and seasonal value in the home garden. Native grasses, agaves, and yuccas will show the elegant beauty and ultimate utility of using those plants as companions to wildflowers and perennials.



California Friendly plants demonstrate the color and choice available to water-wise gardeners.



Native Plant Demonstration Garden at Shipley Nature Center



### **South Oxnard Public Library Garden**

#### *Oxnard*

This demonstration garden features native plants and shrubs designed to enhance public awareness of Southern California's arid ecosystem and the need for water conservation at all times, even in years of above-average rainfall. The project will include collection and use of rainwater for irrigation and permeable paving to reduce runoff and increase water infiltration.

### **Small Parks and Gardens Grants**

Grants of up to \$20,000 were offered for pocket parks and small-scale projects featuring landscape design and irrigation solutions easily transferable to residential settings.

### **Altadena/Pasadena Oak Woodland Pocket Park**

#### *Altadena*

Altadena Foothills Conservancy will create an oak woodland pocket park in an 8,000-square-foot triangle of gravel that was once a county right of way. It will reference nearby mountains and appear to pull a piece of upland habitat down to the urban area, using native and water-wise plantings as well as recycled and found material to create a California sublime landscape. As a mini-watershed itself, it will demonstrate how watersheds function.

### **Showcase of Native Gardens at Madrona Marsh**

#### *Torrance*

The project transforms a grass landscape adjacent to the Madrona Marsh Nature Center into a native plant garden, using local native plants that have been present in the area since the 1800s, explaining these historic relationships to visitors.

### **Native Plant Demonstration Garden at Shipley Nature Center**

#### *Huntington Beach*

A garden on a half acre at the Shipley Nature Preserve showcases eight habitats: butterfly, hummingbird, coastal sage scrub, wildflower meadow, oak woodland, and riparian woodland, as well as a bog/swale to capture rainwater for wildlife and demonstrate water harvesting techniques and a small freshwater pond.

### **Marine Monument at Park Semper Fi**

#### *San Clemente*

A bronze statue of a U.S. Marine has been erected in Park Semper Fi, located on a low coastal bluff north of the San Clemente pier, as a permanent tribute and to raise awareness of the city's historical ties to the Marines at Camp Pendleton. The gardens surrounding the monument have been planted with California natives, many from the endangered coastal sage scrub and chaparral plant communities indigenous to San Clemente and Camp Pendleton. The statue and gardens were unveiled on Nov. 12, 2005, to celebrate the 230th anniversary of the Marine Corps.

## **Native Plant Demonstration Garden at Covina Library**

### *Covina*

The Covina Public Library will create a 3,300-square-foot water-wise demonstration and stroll garden surrounding its building, replacing lawn and capturing runoff for use in the garden.

## **Library Gardens**

### *Bellflower*

In the middle of a redevelopment effort, the city of Bellflower is looking to create a unique identity and intimate gathering place near downtown for small community gatherings and educational lectures. The City Redevelopment Agency transformed a concrete public parking area and out-of-context single-family dwelling next to City Hall to create such a place. With landscaping, the Library Gardens has the potential to attract a diverse group of people looking for a quiet place for lunch, reading or reflection. The garden will include seating and winding paths, a meditation labyrinth and California native plants.

## **Hollydale Elementary School Demonstration Garden**

### *South Gate*

The garden will be located on land owned by Southern California Edison but loaned to Hollydale School for a demonstration garden that teaches children about water conservation, strategic irrigation systems and the use of controllers. The hope is that the children can begin implementing some of the strategies at home as well as in adulthood, thereby promoting future water conservation. The garden is being developed in conjunction with the school's curriculum and will include drought resistant plants as well as fruits and vegetables, in order to augment classroom learning.

## **Next Step Educational Grants**

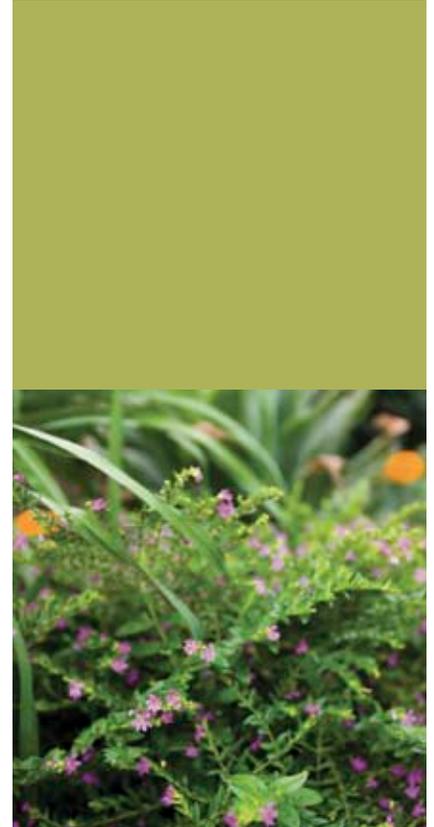
These grants were available to past City Makeover recipients to incorporate Metropolitan's Protector del Agua training courses, which cover the basics of irrigation systems, watering and fertilizing, basic landscape design and plant identification.

## **City of Santa Monica**

The city will hold residential and professional workshops during the main Southern California planting seasons, expanding its current native plant educational program with additional information, including plant palettes for Santa Monica, efficient irrigation systems, composting and integrated pest management. The professional workshop will focus on regulations and procedures specific to Santa Monica and, when completed, will allow the contractor to be listed as a city-certified landscape specialist.

## **City of San Clemente**

The city will offer four gardening workshops to be held on-site at Casa Romantica, a past City Makeover grant recipient.



California Friendly plants do not sacrifice water savings for beauty.

*water recycling,  
groundwater  
recovery*

*and seawater  
desalination*



Water recycling, groundwater recovery and seawater desalination are integral and growing assets in the region's diverse resource portfolio and help bring greater water supply reliability to Southern California. Local water agencies have largely led the development of existing water recycling and groundwater recovery projects in the region. Newer projects are being developed with financial incentives provided through Metropolitan's Local Resources Program (LRP), a performance-based program that provides incentives to expand water recycling and recovery of degraded groundwater. A similar approach will be used to provide incentives for seawater desalination production.

The status and production of local water recycling and groundwater recovery projects can change from year to year. The trends for these programs show that production is increasing overall. However, year-to-year fluctuations can occur due to seasonal demand for recycled water from changing weather, operational criteria, construction and permitting issues, and other factors. Recent efforts by Metropolitan staff and member agencies to identify the operational and developmental status of both existing and future local projects will help to more accurately track the progress toward meeting the regional goals set forth in Metropolitan's IRP.

Metropolitan's current program funding design was adopted in 1998. Metropolitan periodically issues a Request for Proposals (RFP) to identify new projects that warrant MWD assistance. Member agencies submit their project proposals to Metropolitan, which then convenes a panel to review and rank the proposals. The most cost-effective recycled water and groundwater recovery projects are selected for funding.

In addition, Metropolitan initiated an LRP task force effort with its member agencies to review the current LRP policy and approach, and to determine whether any changes should be made. The findings and recommendations from this task force will refine Metropolitan's future strategy for selecting, funding, and implementing local projects.

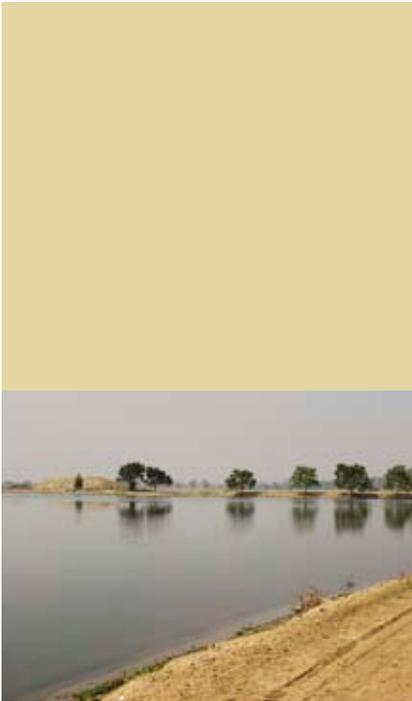
### **2003 Request For Proposals**

At the close of the December 2005 program deadline, 10 of the 13 competitively selected projects from the 2003 RFP were under contract. Three project sponsors chose not to execute agreements because environmental documentation was not complete or local supply improvements were reprioritized. Financial incentives requested under this current RFP total approximately \$140 million, which will be used to develop projects over the next 25 years. These new groundwater recovery and recycled water projects are expected to collectively produce about 58,000 acre-feet per year.

**Water recycling** supplies treated wastewater for applicable municipal and industrial uses. Common uses include landscape irrigation (e.g. golf courses, parks, freeway and street medians, etc.), agricultural irrigation, and commercial and industrial purposes (e.g. cooling towers, toilet flushing, carpet dyeing, etc.).

**Groundwater recovery** employs additional treatment techniques to make potable use of degraded groundwater sources that were previously not considered viable due to high salinity or other contamination.

**Seawater desalination** removes salts from ocean water for potable water uses.



Percolation pond recharging recycled water and storm runoff in Orange County

## 2005/06 Achievements

The following new LRP projects began production in fiscal year 2005/06:

- Central Basin Municipal Water District's Alamitos Barrier Reclaimed Water Project;
- Ladera Ranch and Talega Valley System Expansion in the Municipal Water District of Orange County service area;
- City of Los Angeles' Harbor Water Recycling Project; and
- Eastern Municipal Water District's Recycled Water Pipeline Reach 16.

## Local Resources Highlights

- In 2005/06, 127,700 acre-feet of LRP-funded supplies were delivered – an increase of 16,000 acre-feet from 2004/05.
- Approximately 282,500 acre-feet of recycled and recovered water supplies were produced regionally, including supplies receiving Metropolitan LRP funding.
- Ten competitively selected projects from the 2003 Request For Proposals for LRP funding have been successfully contracted for future production.

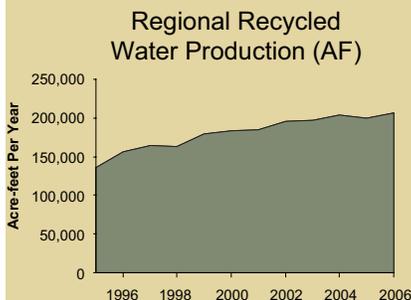
## Seawater Desalination

Seawater desalination remains a potential new resource for the region. However, there are uncertainties in the process of moving from small-scale demonstration projects to larger scale projects, including development decisions, technological issues, and environmental considerations.

The enhanced reliability that seawater desalination could provide to the region is a good reason to continue investing in this resource. Despite the challenges, Metropolitan has entered into three agreements (with the city of Long Beach, West Basin Municipal Water District, and the Municipal Water District of Orange County) to develop seawater desalination projects and offered contracts to the city of Los Angeles and the San Diego County Water Authority.

## Innovative Supply Program

The Innovative Supply Program (ISP) started as a pilot program designed to review unsolicited water resource proposals that are periodically received by Metropolitan. Metropolitan awarded 10 ISP grants totaling \$250,000 to assess these new ideas for enhancing regional water supplies. In addition to providing grants for the studies, staff organized two task forces comprised of local experts to explore opportunities for small-scale recycling and groundwater recharge to complement the formal program investigations.



The ISP identified two promising areas of supply growth for Metropolitan's service area:

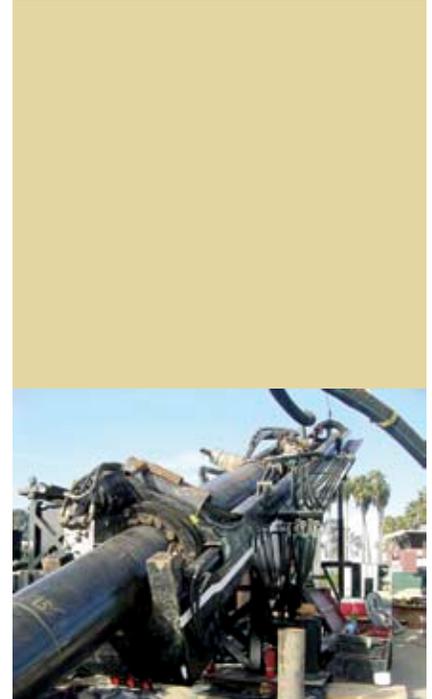
- Expanded use of small-scale water recycling projects; and
- Expanded capture of storm runoff for groundwater recharge.

### ***Small-Scale Water Recycling***

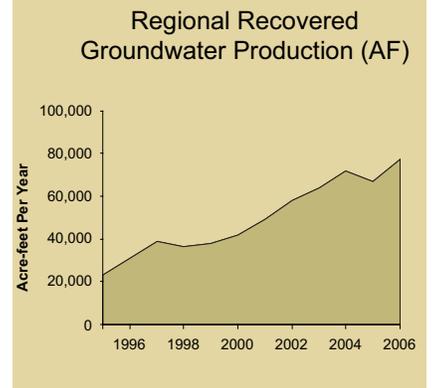
New technologies are providing viable opportunities to develop small-scale, decentralized water recycling facilities. Small-scale facilities capture wastewater generated nearby, treat it and deliver it for reuse applications without the need for large regional wastewater treatment and distribution facilities, or major pumping plants. Because of their modest size, these facilities can be incrementally deployed within the scope of single housing projects or other developments such as golf courses, industrial parks or college campuses. The small project approach could expand water recycling to established communities that are distant from major wastewater plants. Heavily developed urban settings can be retrofitted with limited disruption because of the modest right of way requirements. Small-scale water recycling projects pursued by member agencies may be eligible for financial incentives under Metropolitan's competitive Local Resources Program and could help the region expand recycled water to locations that were previously not cost effective.

### ***Small-Scale Groundwater Recharge Facilities***

Southern California has been recognized as a leader in capturing storm runoff to recharge groundwater basins. Despite the existence of a comprehensive recharge system, substantial amounts of storm runoff continue to flow from paved developments to the ocean. Five ISP studies and the task forces identified opportunities to expand groundwater recharge in new growth areas by focusing on smaller collection systems that had been overlooked in the past. Small-scale groundwater recharge facilities can be deployed in conjunction with new or rehabilitated street and gutter catch basins. Benefits include increasing groundwater supply reliability, reduction or deferral of regional flood control facility improvements, and pollutant removal before discharge to receiving water bodies. These facilities are site-specific and dependent on local hydrogeological conditions of underlying basins.



Installation of test slant wells for seawater desalination pilot project in Orange County



A scenic view of the Colorado River flowing through a valley. The river is calm, reflecting the blue sky and the surrounding landscape. On the left, there are dark, rocky hills. On the right, there is a sandy beach with some green and yellow vegetation. The sky is a clear, bright blue with some wispy clouds and a few white contrails.

# *colorado river aqueduct programs*

The Colorado River remains the focus of water managers throughout the southwestern U.S.

# d

Despite seven years of drought conditions, 2006 shaped up to be a landmark year on the Colorado River. Metropolitan continued to strengthen water reliability at home while actively engaging in a seven-state process aimed at settling one of the longest-running disagreements on the Colorado – how to determine the timing, magnitude, and reduced allocation of deliveries from the Lower Colorado. Working with the seven Colorado River Basin states and their water agencies, Metropolitan helped craft a preliminary proposal submitted to the U.S. Secretary of the Interior on shortage guidelines, opening the door for innovative interstate system efficiency.

### ***Partnerships***

In 2006, Metropolitan entered into three agreements with the Federal Bureau of Reclamation to help preserve storage levels in Lake Mead. The first agreement allowed 50,000 acre-feet of water per year for 2006 and 2007 from the Palo Verde Irrigation District (PVID) fallowing program to be stored in Lake Mead. The second allowed Metropolitan to temporarily regulate Colorado River water that would have otherwise flowed to the international boundary in excess of treaty obligations – the water saved would later be added to Lake Mead storage. The third implemented a program to demonstrate the benefits of system conservation of Colorado River water. Through voluntary supplemental land fallowing agreements that Metropolitan executed with landowners in the Palo Verde Valley, 10,000 acre-feet will be saved in 2006/07 and conserved in Lake Mead to help avoid shortages.

### ***Lake Mead Intentionally Created Surplus Storage Demonstration Program***

Among the more innovative components in the three agreements is an “Intentionally Created Surplus” (ICS) program that allows water that has been conserved through land-fallowing programs or other mutually beneficial water conservation efforts to be stored in Lake Mead. The program gives agencies an incentive to invest in Colorado River water conservation efforts by allowing them to store water for future years without investing in costly infrastructure. In 2006, Metropolitan entered into an agreement with the Federal Bureau of Reclamation to begin to store the ICS water in Lake Mead, and subsequently stored 50,000 acre-feet of water conserved by Palo Verde Valley farmers in partnership with Metropolitan.

### ***Desert Water Agency and Coachella Valley Water District Storage Program***

In November, Metropolitan expanded existing water exchange agreements with Desert Water Agency and Coachella Valley Water District to exchange increased amounts of State Water Project supplies. Metropolitan benefits by increasing existing storage capacity and recovery capability in the Upper Coachella Valley groundwater basin. Metropolitan’s groundwater storage limit increases from 600,000 acre-feet to a maximum of 800,000 acre-feet in 2010.

### ***Quantification Settlement Agreement – Continued Program Development***

Many of the Colorado River storage programs mentioned previously were made possible by the Quantification Settlement Agreement, which was among several agreements executed in October 2003 by Metropolitan, the Imperial Irrigation Dis-



Agricultural crop and land management helps conserve Colorado River water supplies.

trict (IID), Coachella Valley Water District (CVWD) and the San Diego County Water Authority (SDCWA). The QSA quantified agricultural entitlements and established individual water budgets for IID and CVWD, facilitating transfers of Colorado River water from agriculture to Metropolitan's service area.

Implementation of Metropolitan's water transfer programs has taken place at a time when below-normal runoff has occurred throughout the Colorado River Basin. The last seven years have been the driest in a century of record keeping, and both Lake Mead and Lake Powell have fallen to their lowest levels in decades. These programs helped Metropolitan to remain reliable without diverting any surplus Colorado River supplies for the fourth consecutive year.

### ***Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program***

The 35-year Land Management, Crop Rotation and Water Supply Program with Palo Verde Irrigation District began implementation in 2005, and was substantially completed in 2006 with the execution of 92 individual landholder agreements with Metropolitan. The program helps stabilize the Palo Verde Valley economy and provides up to 111,000 acre-feet of water per year to Metropolitan's service area. Under the agreement, participating landowners will not irrigate up to 29 percent of the valley's farmland at Metropolitan's request. The farmland can remain as prime agricultural acreage and will be neither "retired," nor converted to another use. In 2006, the PVID program saved 94,000 acre-feet, which was made available to Metropolitan.

### ***Imperial Irrigation District & Metropolitan Conservation Program***

In 2006, Metropolitan received nearly 82,000 acre-feet of water from its long-standing conservation program with IID.

### ***Imperial Irrigation District & San Diego County Water Authority Transfer Agreement***

Another agricultural partnership involves the four-year-old water transfer program under way between Imperial Irrigation District and the San Diego County Water Authority. This 45-year agreement provided 40,000 acre-feet of water to the Authority in 2006, supplementing regional water supplies. After 2020, water transfers under this program are expected to reach 200,000 acre-feet per year.

### ***Canal Lining Projects***

November also marked the month that the first water flowed into a new concrete-lined Coachella Canal. Replacing the leaky, earthen canal will conserve 26,000 acre-feet each year, with 21,500 acre-feet of water for SDCWA and 4,500 acre-feet benefiting the San Luis Rey Indian Water Rights Settlement. Until the five Indian bands complete their settlement arrangements with the city of Escondido and the Vista Irrigation District in San Diego County, Metropolitan will divert the 4,500 acre-feet of water, with payments made into a trust fund established for the San Luis Rey River Indian Water Authority.

An additional 67,700 acre-feet of water will be saved under the All-American Canal Lining Project for SDCWA and the San Luis Rey Settlement parties. The construction of the project has been delayed while the federal courts decide a legal challenge brought by parties hoping for a reassessment of the project. At the time of writing this report, the Ninth Circuit Court of Appeals has enjoined work on this project until it issues its ruling on this appeal. Legislation enacted by Congress and signed by the President on December 20, 2006, directs that the project be implemented immediately notwithstanding any other laws. The federal government has filed a motion asking the Ninth Circuit to lift its injunction against construction of the project.

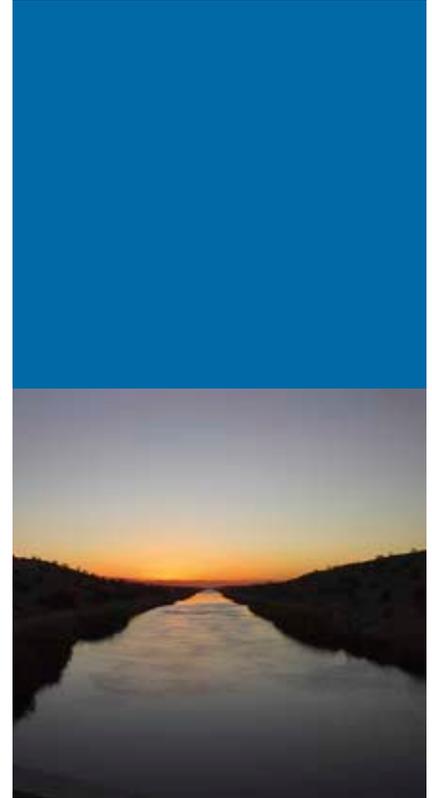
### **Basin State Strategies**

The Colorado River Basin states and the federal Bureau of Reclamation are continuing to prepare for potential water shortages in the event that drought conditions continue in the Colorado River Basin. In addition to the shortage guidelines, the seven-state proposal manages the operation of Lake Mead and Lake Powell to minimize shortages to both the Upper and Lower Basins. The Basin States proposal seeks to:

1. Minimize the extent and duration of shortages;
2. Provide for more efficient and reliable operation of federal reservoirs by developing additional system supplies through extraordinary conservation; and
3. Call for the development of Colorado River supply augmentation programs that improve system efficiency and develop non-Colorado River system water. Metropolitan has taken the lead in advancing a number of the programs identified in the proposal, which eventually could conserve hundreds of thousands of acre-feet of water in the Colorado River system annually.

### **Colorado River Water Quality Protection**

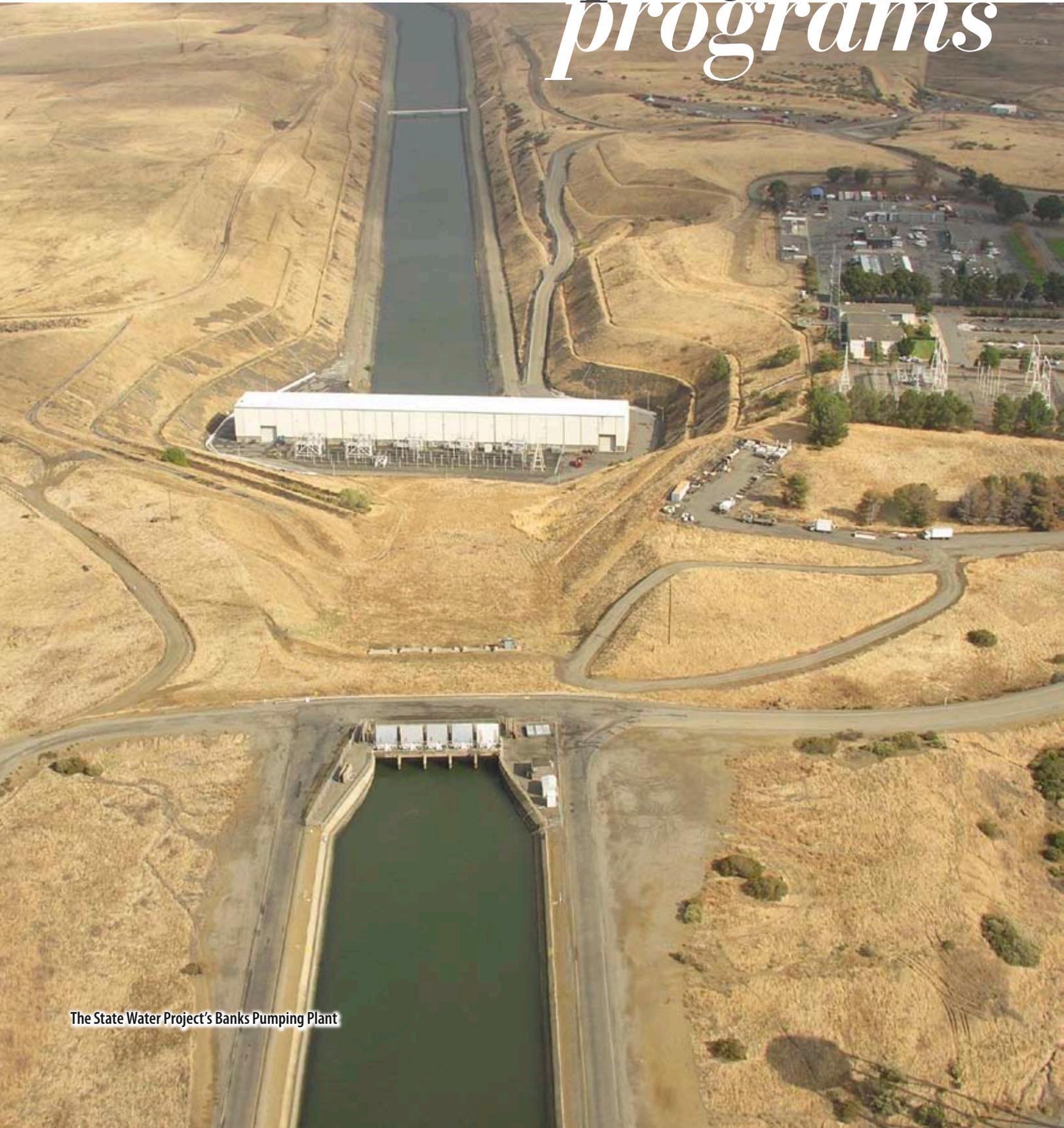
- Metropolitan worked with stakeholders to help implement a perchlorate remediation plan which resulted in perchlorate levels below the detection limit.
- Metropolitan participated in the Salinity Control Forum to help implement new projects to reduce Colorado River salinity, which is already 100 milligrams per liter lower in total dissolved solids due to federal and state activities.
- Metropolitan and other stakeholders were successful in their request of the federal government to commit to moving the uranium mine tailings near Moab, Utah away from the Colorado River. The Department of Energy has issued a solicitation to contractors for remediation activities in support of the action.



Lining of the All-American Canal will provide additional water to the region.

*Photo courtesy of Paul Steward, City of El Centro*

# *state water project programs*



The State Water Project's Banks Pumping Plant



The State Water Project (SWP) is owned and operated by the California Department of Water Resources (DWR). In 2006, higher than average precipitation allowed DWR to approve 100 percent allocation to its 29 contractors. Because of these ample supplies from the SWP, Metropolitan was able to further enhance its storage programs within its service area and when possible, outside its service area.

Metropolitan stored approximately 10,000 acre-feet in its Kern-Delta Groundwater Storage Program, approximately 5,500 acre-feet in its Arvin-Edison Groundwater Storage Program, and 230,000 acre-feet in San Luis Reservoir. Within its service area, Metropolitan delivered more than 300,000 acre-feet of groundwater replenishment deliveries – the highest replenishment deliveries since 1994 – to help its member agencies manage their local groundwater supplies. Furthermore, these SWP supplies have helped maintain surface storage at high levels in local reservoirs like Castaic Lake and Diamond Valley Lake.

### **San Francisco Bay/Sacramento - San Joaquin Delta (Bay-Delta) Initiatives**

The Sacramento - San Joaquin Delta (Delta) has been in decline for decades – the most recent effects of that decline are seen in the diminishing numbers of pelagic organisms, most notable of which is the delta smelt. At the same time, growth and development are placing increased demands on the Delta. These factors have combined to create an urgency that is felt today and has heightened the need to focus on solving these and other priority issues. The CALFED Bay-Delta Program has accomplished many tasks in the Bay-Delta in the past five years, with many more tasks still underway.

There are several processes currently under way in the Bay-Delta:

- The Governor's long-term Vision Process, which will help redirect the CALFED Bay-Delta program to better sustain the Delta's ecosystems as well as provide water supply reliability for users of Bay-Delta water;
- Development of a Bay-Delta Conservation Plan, which will enable water supply, water quality, ecosystem, and levee projects to progress within a stable regulatory framework; and
- Emergency Response Strategies & the Delta Risk Management Study, which seeks to address near-term vulnerabilities in the Delta and risks to the water supplies of 23 million Californians.

More detail on these processes is given later in this report.

### **SWP Storage, Transfer & Exchange Programs**

Amendments made to the State Water Project water supply contract in the mid-1990s provided Metropolitan with greater flexibility to store water during environmentally friendly, wetter periods. Among other benefits, the contract amendments enhanced Metropolitan's ability to develop storage programs inside and outside of its service area, as well as transfer and exchange agreements. The Water Storage & Exchange Programs chart gives more information on these programs.

SWP storage programs inside Metropolitan’s service area use available surface storage in two of DWR’s reservoirs: Castaic Lake and Lake Perris. This extra storage, referred to as “Flexible Storage,” allows Metropolitan to hold up to 219,000 acre-feet of water on a year-to-year basis. Since the stored water is within Metropolitan’s service area, it has provided quick and easy access to water supplies when needed without having to build additional infrastructure.

Storage programs outside Metropolitan’s service area includes agreements with entities in the San Joaquin Valley that store water in vast groundwater basins. These programs, such as with Semitropic Water Storage District and Arvin-Edison Water Storage District, provide Metropolitan an opportunity to store SWP water over multiple years when it is not needed, and to withdraw those supplies during dry years. Some of these programs also allow exchanges of high quality surface water for the stored groundwater, which may help Metropolitan keep treatment costs down. Metropolitan is currently negotiating with some of its water storage partners to enhance various aspects of these programs.

Water transfer programs have been developed on a year-to-year basis, providing Metropolitan with additional supplies during dry years – as much as 200,000 acre-feet of supplies in a given year, possibly more. Opportunities to explore future water transfers may result from the relationships developed in previous years. These opportunities should help to provide additional resource options when dry-year conditions occur in the future. This practice is consistent with Metropolitan’s water resource strategy outlined in its 2004 Integrated Water Resources Plan Update.

These actions enhanced Southern California’s water reliability and will reduce demands on the Bay-Delta during environmentally sensitive, drier periods. At the end of 2006, Metropolitan had about 685,000 acre-feet stored in existing storage programs in the San Joaquin Valley, San Bernardino, and Mojave.

**In some years, Northern California farmers may elect to transfer water that would normally be used for agriculture, such as growing rice.**



<b>Water Storage &amp; Exchange Programs</b>					
<b>Program / Agency</b>	<b>Program Location</b>	<b>Description</b>	<b>Program Inception</b>	<b>Program Capacity (acre-feet)</b>	<b>MWD Balance as of Dec. 31, 2006 (acre-feet)</b>
Arvin-Edison Water Management Program	Southern San Joaquin Valley	Storage: Store SWP entitlement water for later use	1997	350,000	211,000
Kern-Delta Water District Water Management Program	Southern San Joaquin Valley	Storage: Store SWP entitlement water for later use	2001	250,000	36,000
Mojave Water Agency Water Exchange Demonstration Program	Mojave Valley	Storage: Store SWP entitlement water for later use	2003	75,000	45,000
San Bernardino Valley Transfer and Storage Program	San Bernardino	Storage: Store SBVMWD transfer water for later use	2003	50,000	50,000
Semitropic Water Storage Program	Southern San Joaquin Valley	Storage: Store SWP entitlement water for later use	1994	350,000	343,000
Friant Water Users Authority/ Metropolitan Water Management Partnership	San Joaquin Valley	Exchange: Explore projects to improve water supply reliability for Friant & water quality for MWD	2000	N/A	N/A
Kern County Water Agency/ Metropolitan Coordinated Operations Agreement	Southern San Joaquin Valley	Exchange: Allow groundwater extraction when energy costs are low & improve water quality for MWD	2006	50,000	N/A

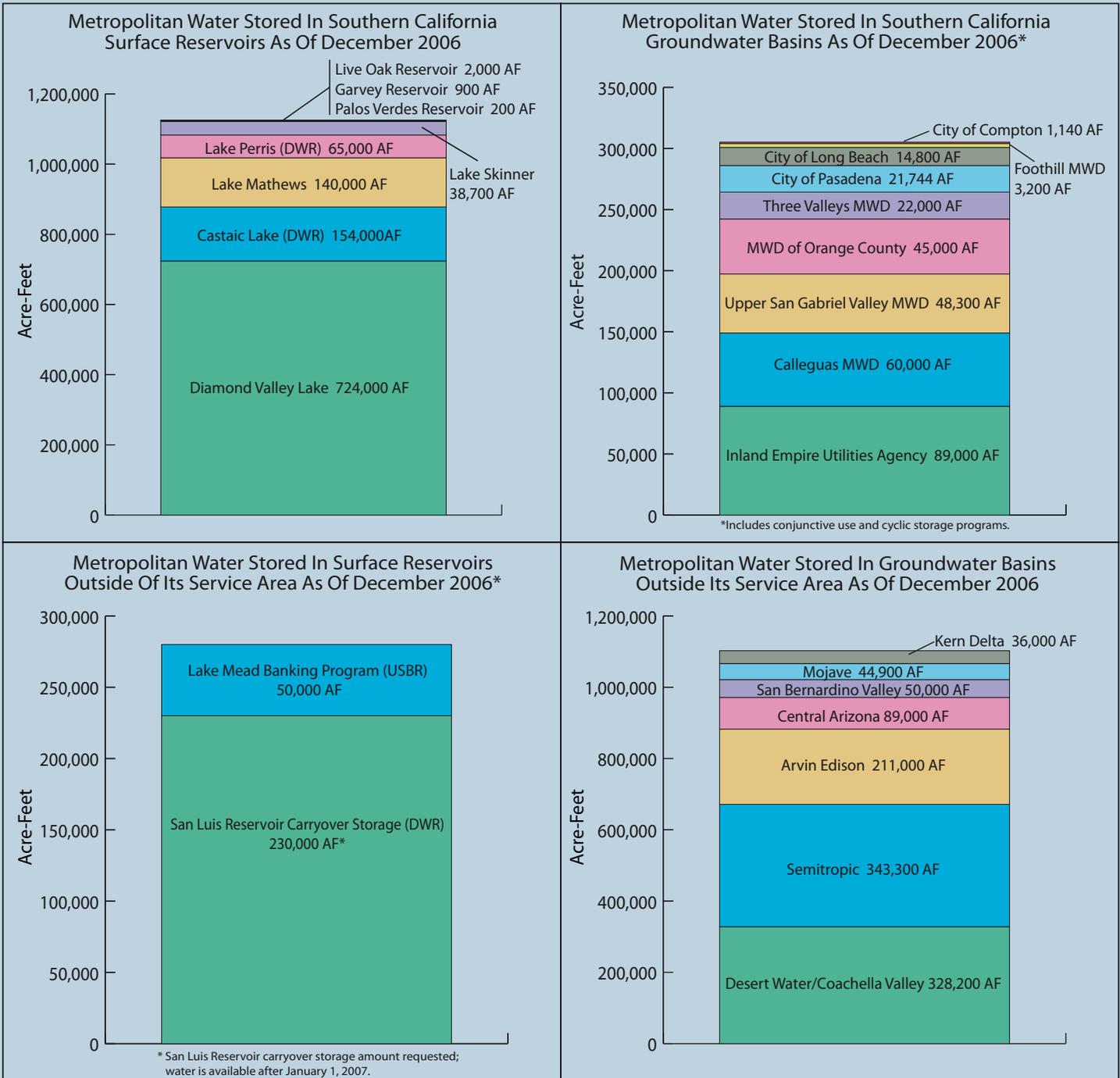
# *metropolitan water in storage*



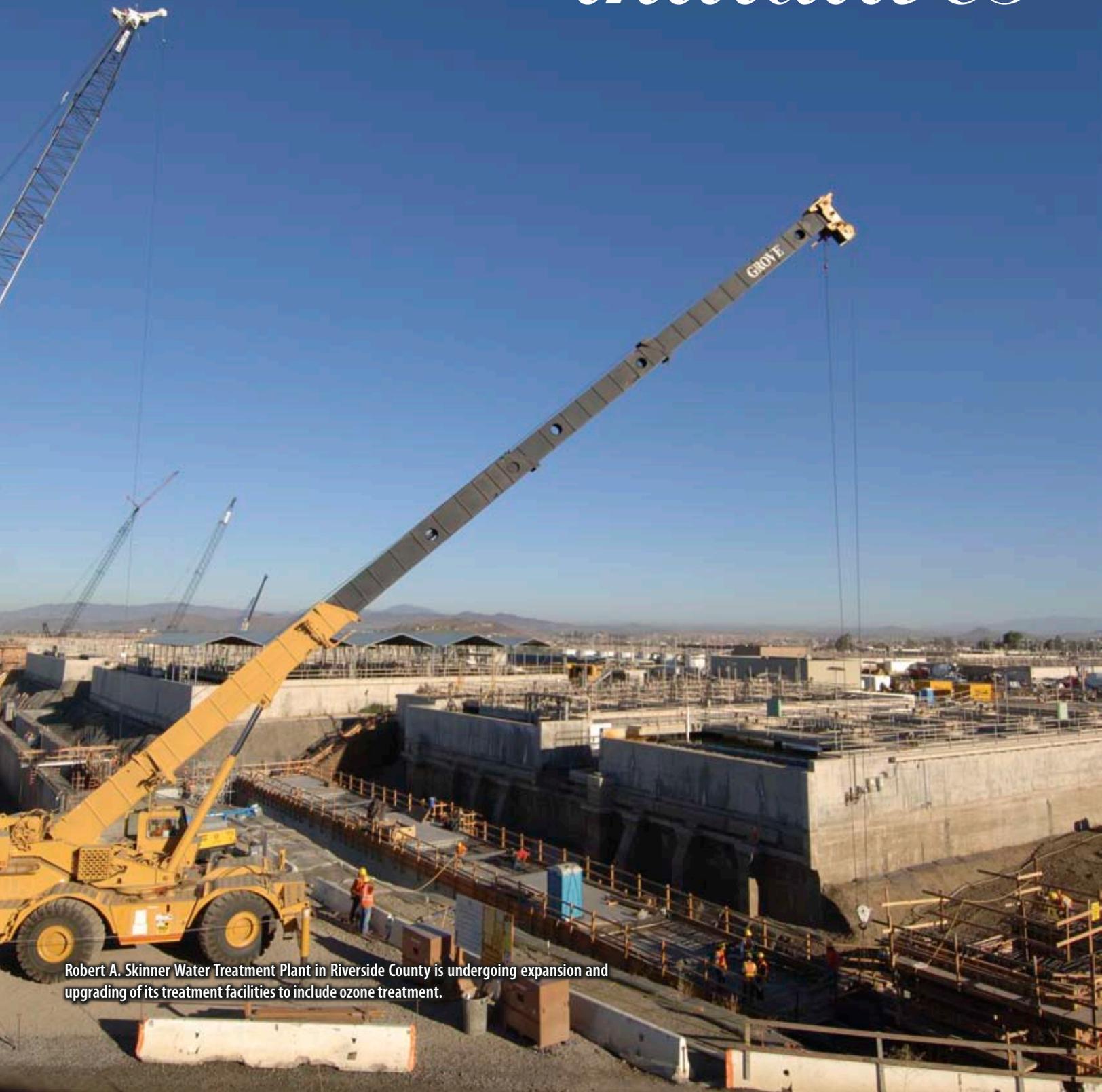
Diamond Valley Lake



Metropolitan has developed a variety of surface and groundwater storage options both within and outside its service area. These storage options reflect partnerships that Metropolitan has invested in and allow greater management flexibility to mitigate against droughts. In years like 2006, when there were abundant SWP supplies, Metropolitan is able to bank significant amounts of water.



# *water quality initiatives*



Robert A. Skinner Water Treatment Plant in Riverside County is undergoing expansion and upgrading of its treatment facilities to include ozone treatment.



Metropolitan's planning efforts recognize the importance of water quality and to the extent possible, focus water management efforts on maintaining source water quality and developing programs that protect and enhance supplies. Contaminants that cannot be controlled at the source are handled through the treatment process. Metropolitan monitors more than 100 required constituents and draws more than 50,000 samples a year to perform more than 320,000 analytical tests to ensure public health.

### **Ozone Retrofit Activities**

Source water quality improvements must go hand-in-hand with cost-effective water treatment technologies to ensure safe drinking water at a reasonable cost. Metropolitan has five treatment plants: two that receive State Water Project water exclusively, and three that receive a blend of State Water Project and Colorado River water.

Ozone will be used at all five Metropolitan water treatment plants. The ozonation process produces fewer regulated disinfection byproducts that would otherwise form in the chlorine treatment of SWP water. Ozone retrofits have been completed at the two plants that treat SWP water exclusively, the Joseph P. Jensen Water Treatment Plant and the Henry J. Mills Water Treatment Plant. Teams of operators, water quality experts, engineers, mechanics, electricians and controls system technicians met and trained together to facilitate a smooth transition to ozone.

Upgrading the Robert A. Skinner Water Treatment Plant near Temecula is slated for completion in 2009, with Metropolitan's La Verne and Yorba Linda plants to follow.

### **Fluoridation Update**

On July 1, 2007, Metropolitan will begin to fluoridate its water supplies with a level considered optimal by health experts to reduce and control tooth decay. Member agencies that are not completely dependent on Metropolitan for water supplies and are currently fluoridating their water will alter treatment processes accordingly. The cities of Beverly Hills, Long Beach and Los Angeles currently fluoridate their drinking water supplies.

Through a \$5.5 million grant from the California Endowment, Metropolitan will design, install and operate fluoridation facilities at each of its five treatment plants. These facilities will deliver treated drinking water throughout Metropolitan's service area with a fluoride content in the range of 0.7 – 0.8 milligrams per liter. This range is considered optimal for Metropolitan's entire treated water distribution system and some utilities receiving these supplies may choose to adjust their final fluoride levels depending on the amount of additional supplies they may be blending.

### **Colorado River Basin Salinity Control Program**

The overall strategy of the Colorado River Basin Salinity Control Program is to prevent salts from dissolving and mixing with the Colorado River's flow. It is a cooperative effort between the Colorado River Basin water users, the Colorado River Basin Salinity Control Forum, the U. S. Department of Agriculture (Natural Resources Conservation Service), and the U. S. Department of the Interior (Bureaus of Reclamation and Land

Management). It is being implemented to prevent increases in salinity of Colorado River water from 1972 levels.

The cost of program implementation to maintain the established numeric criteria for salinity averages \$46 million annually. About 30 percent of these costs are paid by the Colorado River Basin States and 70 percent by the federal government. About half of the salinity in the river comes from natural sources and half from human uses of water and activities near the river. At Hoover Dam, the river delivers about 9 million tons of dissolved salt per year. When water is diverted from the river, the concentration of salts results in impacts to residential, commercial, industrial, and agricultural water users. These economic damages in the lower basin states exceed \$330 million per year. Concrete lining or pipelining of earthen irrigation canals, use of sprinkler and drip irrigation systems, deep well injection of saline water and plugging orphan wells discharging saline water are among the measures being implemented.

Existing salinity control measures are preventing the contribution of about 1 million tons of salt per year as measured at Hoover Dam. More programs are needed in order to maintain the salinity concentration at or below the required criteria level.

The Colorado River Basin Salinity Control Forum estimates that absent the program, Colorado River salinity would be around 100 mg per liter higher.

**In the near future all of Metropolitan's water treatment plants will use ozone technology in its treatment/disinfection process.**



## The Desalination Research and Innovation Partnership (DRIP)

DRIP is a nine-year program that is ending this fiscal year. It was designed to develop cost-effective, large-scale advanced water treatment technologies for the desalination of Colorado River water. Partnerships with external agencies and academia are contributing complementary studies in the desalination of brackish groundwater, municipal wastewater, and agricultural drainage water that will likely continue past Metropolitan's DRIP program completion. A consortium of California water agencies and other interested parties, DRIP has fostered significant research in the short-term for more efficient and cost-effective desalination technologies. The overall program is managed by Metropolitan's Water Quality Section and key Colorado River water desalination efforts have been conducted at both the pilot-scale and demonstration-scale at Metropolitan's F. E. Weymouth Treatment Plant in La Verne. The pilot scale program operates at several gallons per minute and a demonstration-scale program operates at 5 million gallons per day.

Currently, efforts to complete Colorado River water desalination testing are under way at the federal Bureau of Reclamation's Water Quality Improvement Center in Yuma, Arizona. Using equipment and Colorado River water available at this facility, Water Quality Section staff are managing efforts to complete evaluation of the following important program objectives:

1. Assess the ability of ozonation with biological filtration to provide pretreatment of Colorado River water for reverse-osmosis (RO) systems;
2. Assess long-term operational characteristics of 18-inch diameter RO membranes that have been previously developed by Metropolitan's pilot and demonstration program at their F. E. Weymouth Treatment Plant in La Verne; and
3. Conduct large-scale testing of an in-house developed RO concentrate recovery process (mineral precipitation combined with secondary RO treatment) to determine if RO recovery rates may exceed 95 percent (optimum RO recovery is typically 85 percent).

F.E. Weymouth Water Treatment Plant in La Verne



# *watershed* *initiatives*

View from downtown Los Angeles north toward the Glendale Narrows and San Gabriel Mountains.

# 1

## Los Angeles and San Gabriel Rivers Watershed Council Water Augmentation Study

Metropolitan has been partnering with the Watershed Council and six other public agencies since 2000 to assess the benefits, costs and risks of capturing stormwater runoff to augment water supply through infiltration. This project examines the use of best management practices to conserve and infiltrate stormwater on various urban sites, including parks, residential and industrial development, and monitor to determine if there would be water quality impacts of infiltration on groundwater quality. After four years of monitoring, the project demonstrated that stormwater infiltration would not adversely impact groundwater quality when proper best management practices are implemented on site. In 2006, the California Stormwater Quality Association recognized and awarded the project the *Stormwater Research Project of the Year – Regional Project*.

A computer model, which takes into account topography, soil types, land use, and other factors, has been developed to quantify the amount of stormwater that can be captured and infiltrated if various types of best management practices are implemented. Project staff are currently developing a *concept plan* to retrofit a single-family residential block with watershed best management practices. The plan will include the goals, site selection criteria, an outreach plan, potential design features, legal and regulatory requirements, and steps to implement neighborhood-scale projects. The purpose of developing the plan and eventually retrofitting a neighborhood is to demonstrate an integrated, comprehensive approach to water management, addressing issues such as surface runoff, water conservation, pollution reduction and treatment, flood management, recreation, and habitat and stream restoration.

Storm drain filters improve the quality of captured stormwater prior to percolation, augmenting groundwater basins.

## Greater Los Angeles County Integrated Regional Water Management Plan

The IRWMP is an integrated approach to water management that addresses a broader range of issues including growing water demands, water supply reliability, water quality, stormwater management, open space and habitat, and financing of projects. Through this effort, the Greater Los Angeles County region has identified more than 1,500 wide-ranging projects having the potential to serve multiple jurisdictions and provide multiple benefits. The regional group adopted the Greater Los Angeles County IRWMP in December 2006. Metropolitan has been participating as a non-voting ex-officio member of the Greater Los Angeles County IRWMP leadership committee. The Greater Los Angeles County IRWMP received a planning grant of \$1.5 million from the Water Security, Clean Drinking



Water, Coastal and Beach Protection Act of 2002 (Proposition 50) to define regional objectives and identify local projects that would achieve the objectives. Continued efforts include prioritizing identified projects to seek financial partners and further the planning of these projects.

The region has also been selected to receive \$25 million in the first round of Proposition 50 Implementation Grants for 13 projects. Additional efforts are being directed toward preparation of applications for the second round of the grant process in 2007.

### **Bay-Delta Watershed**

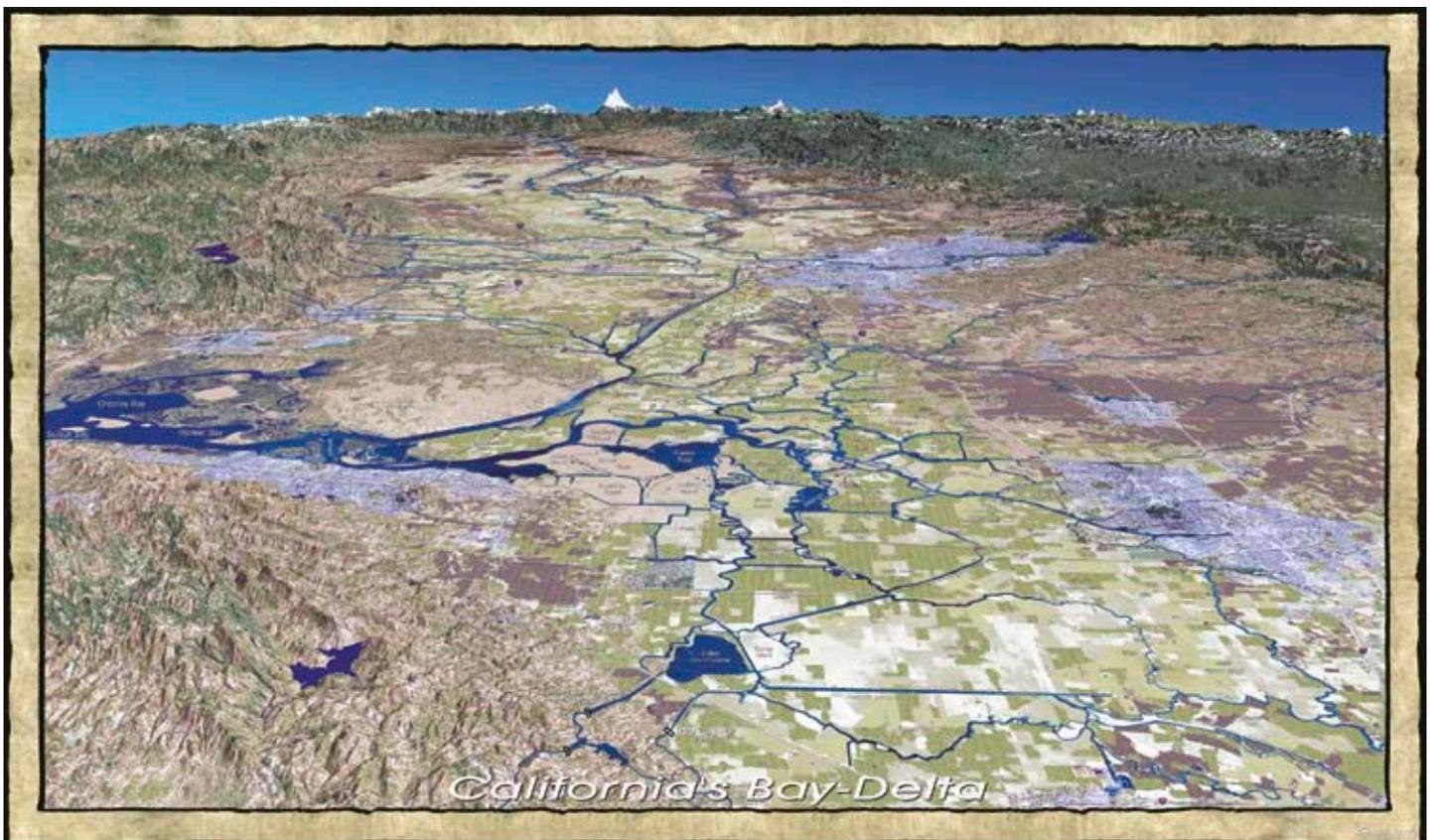
The Bay-Delta watershed is an important source of water supply conveyed to Metropolitan through the State Water Project. Due to the large size and diversity of the watershed, many activities affect or have the potential to affect Bay-Delta water quality. In 2006, Metropolitan continued to work with agencies and stakeholders throughout the Bay-Delta watershed to provide guidance and expertise in water quality monitoring programs and watershed planning studies that address Metropolitan's source water quality protection objectives. Metropolitan provided financial support to the Sacramento River Watershed Program (SRWP), through Metropolitan's Community Partnering Program, for implementation of watershed education and outreach via public service announcements. Metropolitan also continued to participate in the implementation of the SRWP water quality monitoring program, and in the completion of stakeholder partnership studies evaluating potential water quality improvement strategies in the Sacramento River watershed.

Many activities affect or have the potential to affect Bay-Delta water quality.



Metropolitan continued to work with the Central Valley Regional Water Quality Control Board, California Department of Health Services, U.S. Environmental Protection Agency Region 9, CALFED Bay-Delta Program, and key watershed stakeholders to develop a drinking water policy for surface waters in the Bay-Delta watershed. This program is a multi-year effort and is expected to be complete in 2009. Once adopted, the drinking water policy will provide a more effective regulatory framework for implementing drinking water quality protection activities in the Bay-Delta watershed. In 2006, key accomplishments included the completion of conceptual models for drinking water constituents of concern that describe and quantify the major sources of drinking water constituents in the Bay-Delta watershed, and the development of a water quality monitoring program to fill key information gaps for regions of the Bay-Delta watershed.

A Sacramento Valley map with an oblique view of the Delta region in the foreground.



# *southern california's integrated water resources plan*

Satellite image of Southern California (Image courtesy of NASA Visible Earth – <http://visibleearth.nasa.gov/>).



The framework for regional water resource planning for Southern California is the Integrated Water Resources Plan (IRP), adopted by Metropolitan's board of directors in 1996. The IRP provided a 20-year resource plan to balance locally-developed resources with imported supplies. It called for investments in water conservation, recycling, groundwater treatment, storage and transfers, and in return brought supply diversity and stability.

Metropolitan's board adopted the Integrated Water Resources Plan Update in July 2004 after a series of outreach meetings that were held to receive input from member agencies and the public. The IRP Update showed that Southern California continued to exceed projections laid out in the original IRP approved in 1996. The IRP Update also recommended development of a supply buffer of 500,000 acre-feet, half of which would come from local resources, and the other half through water transfers and storage programs outside Metropolitan's service area. The IRP upholds Metropolitan's balanced approach of ensuring diversity and reliability of local and imported supplies.

### ***2006 IRP Implementation Report***

As part of the approval of the IRP Update, Metropolitan's board directed staff to provide an annual report on the progress toward implementing the IRP targets. This year's report includes information for each category of IRP resource development, organized by:

- IRP Target – What is the amount of resource development being targeted, and how does current development compare to the target?
- Current Considerations and/or Changed Conditions – What are relevant issues and changed conditions affecting development that have arisen over the past year?
- Implementation Strategies and Identified Programs – What are the approaches and strategies being employed to meet the development targets?
- Implementation Challenges – What are the challenges expected to affect future development?
- Cost Information – What development costs were incurred over the past year, and what long-term costs has Metropolitan committed to?

### ***Overall Finding***

When viewed altogether, Metropolitan has currently developed water supply programs and identified projects that will meet the projected targets for the region through 2025. However, when viewed by category, some development components of the resource targets may be at risk, or previously identified options simply may not be available for implementation. Since existing water supplies and programs are susceptible to potential changed conditions, Metropolitan continues to identify and pursue additional resource opportunities consistent with the implementation buffer or "planning contingency" adopted as part of the IRP Update.

Metropolitan's 2006 IRP Implementation Report demonstrates that while changes occur in all resource areas, Metropolitan is able to maintain supply reliability through its diversified water resources portfolio. The IRP is an adaptive planning framework, and with the adopted annual implementation reporting and five-year updating cycle, Metropolitan and its member agencies will continue to refine and revise the resource targets as new information and technologies become available.

# *public hearing*

## *comments excerpts*

*The following excerpts are from the public hearing held on Dec. 11, 2006, to review Metropolitan's progress toward increasing its emphasis on cost-effective conservation, water recycling, and groundwater recharge as required by section 130.5 of the MWD Act.*

**Aaron Hunt, Manager of Community Affairs, Western Division  
The Home Depot**

We are happy to be here with you today and to share a few comments about the California Friendly campaign and in terms of the Home Depot, our perspective on the program. After Earth Day 1990, we determined that we would begin to consider the environment more proactively in our business decisions. And by far the best way for us to positively impact the environment is through the products we sell. We are actively striving to offer our customers a broader array of environmentally sensitive products. Our partnership with MWD behind the California Friendly campaign in over 110 of our stores made great sense for us, being a corporate citizen in a highly competitive market. Metropolitan has proven to be a leader in some of the most innovative conservation programs in the nation and so it makes a lot of sense for The Home Depot to partner with an organization with a reputation like yours. Our success with the California Friendly campaign impacts the communities where our stores sit and allows us to touch our customers, our associates and other stakeholders in unique ways as they see we are committed to promoting environmentally sensitive plants and products.

Let me give you some tactical sense of how we rolled this out and what it means for us at a store level. The program allowed our associates to point customers to water sensitive plants, to hand out seed packets and other marketing collateral that educated the consumer about these products. It also allowed us to leverage the California Friendly campaign behind the community building activities that we have with non-profit partners such as Kaboom, where we go into an underserved community and build a playground and landscape that area. It allowed us to invite our community partners in and talk to them about these types of plants and what the California Friendly plant campaign does and how that matters to a community. So, for us at Home Depot, we were really privileged to be a part of the campaign and we hope that it is one step towards a greater partnership with organizations like yours in the future. We believe that as the Fortune 500 becomes more sensitive to the corporate responsibility debate, these types of partnerships will make more sense as we move forward.

**Andrew Davis, President  
WeatherSet Company**

We are the company that makes the sprinkler timers with the solar sensor on the property so there is no signal feed involved. I'd like to, on behalf of the many customers that I have talked to on the phone asking for programming information and things like that, I'd like to thank you for your program. We are very enthusiastic and excited about having any kind of sprinkler timer that automatically adjusts. Now you have to remember that these [customers] are a part of our population that are self selected. Most of them were interested in gardens and some of these customers had been in the routine of changing their timers monthly and seasonally. Yet they could see the advantage of having something they didn't have to monitor and go around changing the sprinkler timer all the time.

The biggest problem I think that we have as an industry is getting these kinds of timers in the group of people that I call the "barely willing", the "barely able" or the "don't have time". What our program is, over the coming year, is to work with contractors from Angie's List and the California Landscape Contractors Association to get our information in the hands of these contractors to have them hand the information to their customers. Our emphasis is going to be in the sections of Southern California where the rebate programs are most effective, particularly in Orange County where the contractors can get their labor reimbursed, as well as the timer. On behalf of all the happy customers out there and the homeowners, I really want to thank you.

**Steve Hruby, Account Executive  
Southern California Gas Company**

I would like to start by commending The Metropolitan Water District of Southern California on their efforts to provide water conservation through multiple measures in residential, commercial and industrial applications.

As you are likely aware, the Southern California Gas Company provides energy efficiency rebates and incentive funding for qualified equipment and industrial process improvement through innovative energy efficiency renovations. Our energy efficiency programs are very similar to The Metropolitan Water District's, except where we strive to provide them (energy) savings, The Metropolitan Water District strives to save a gallon of water.

There are significant similarities in these programs, so they naturally fit together on select projects. I am currently working with several large industrial accounts where water savings and energy savings go hand-in-hand, and the combined incentive funding from the Southern California Gas Company and The Metropolitan Water District will likely provide acceptable paybacks to convince these corporations to proceed with their proposed projects.

In addition, the Southern California Gas Company is currently working with The Metropolitan Water District to further establish a deeper relationship in the water and energy connection. The notion of "Embedded Energy" in water conservation will continue to grow in scope, and I look forward to working with The Metropolitan Water District to better understand this connection.

I would like to thank the board and Metropolitan staff for their continued efforts in water conservation and propelling that relationship towards energy savings.

**Mike Baron, Regional Manager  
Walla Walla Sprinkler Company.**

I have 25 years of experience in the landscape irrigation industry and I represent a company called Walla Walla Sprinkler Company. We make a rotating nozzle product that is on your Water-Save-a-Buck rebate program and I just wanted to thank MWD for including these rotating nozzles in the program. They've been documented to save 30 percent versus conventional spray nozzles that are the most popular. Close to 25 million of those units are out in the Southern California marketplace, so there is a huge potential. We are taking information that MWD has provided and in my role as president of the Los Angeles/ San Gabriel Valley chapter of the California Contractors Landscape Association, we are planning to advertise within the chapter newsletters in Southern California. This will cover the 18 million individuals serviced in over 5,000 square miles of MWD service area. We have put together a comprehensive information package that includes MWD incentive information. They (landscape contractors) are dealing with commercial customers who will be able to take advantage of the program and show a return on investment to their commercial and industrial customers by retrofitting spray nozzles with rotating nozzles and reducing water consumption by 30 percent. We just appreciate the opportunity to take advantage of this program that should make a significant contribution over the next several years. Thank you.

**Written comments submitted by Dave Johnson, Director of Corporate Marketing  
Rain Bird Corporation**

Rain Bird is pleased with the progress MWD and its retail distributors have made in the area of increasing the public's awareness of the need for outdoor water conservation. We feel that in addition to providing the infrastructure for safe, affordable and plentiful water, purveyors need to also promote the intelligent use of this precious natural resource.

As a manufacturer of several products that currently qualify for rebates under the MWD's program, we can say that we support these types of efforts completely. Certainly the incentives that the MWD and its partners provide increase the awareness, and ultimately the sales, of our qualified water-savings products.

Rain Bird's "smart" controller product, called the ET Manager is one such product. The ET Manager is a device that can turn any irrigation controller into a weather, or ET, based product. In addition, Rain Bird's Rotary Nozzle has been identified as another rebate opportunity for MWD's program. The Rotary Nozzle is one of the most efficient water application devices on the market today and has been well-accepted by Rain Bird's base of contractor customers.

While we view this program as a success, we also feel there are several ways to improve the program:

- Marketing – Through more effective ...collaborative, marketing efforts, we feel that more consumers could benefit from this program. Manufacturers like Rain Bird could do a better job of telling...customers that rebates and incentives are available. Water districts could also promote the program more through advertising, PSAs, PR or other methods.
- Communication – With MWD's numerous member agencies and the autonomy with which they operate, communication... about conservation activities and programs can be diffi-

cult. Identification of the key individuals at MWD's member agencies with responsibility for implementing conservation programs and rebate offers would greatly improve the efficiency with which Rain Bird could communicate those programs and offers to the marketplace.

- Additional products – While Rain Bird agrees that the latest technologies (such as Rotary Nozzles) save the most water, we recognize that there are many other water-saving products on the market today that represent more established, yet still effective, solutions.

California Friendly Landscapes: Rain Bird applauds MWD's "California Friendly" program as we feel it is a great way to bring together several water-conserving practices under one umbrella. The sample specification outlined on your website addresses the major things installers, builders and consumers can do when designing and installing an irrigation system to ensure that it saves water from the very beginning. Rain Bird would welcome the opportunity to work with MWD in 2007 and beyond to further refine this specification and help expand this program as it relates to irrigation systems.

As you can see Rain Bird takes water conservation seriously and we look forward to partnering with MWD in the future.

# *glossary*

**This is a list of common acronyms and terms used in this report.**

**Acre-foot:** The amount of water that would cover one acre one foot deep with water. One acre-foot is equal to about 325,851 gallons.

**Bay-Delta:** The San Francisco Bay - Sacramento/San Joaquin Delta is formed from the confluence of the Sacramento River, the San Joaquin River and tidal flows from San Francisco Bay. Its 700 miles of sloughs and waterways surround more than 60 islands protected by flood control levees. More than two-thirds of the state's population depends on water that passes through the Bay-Delta, the crossroads to California's two largest water systems: the State Water Project and the Central Valley Project. These projects help supply water to both farmers and cities throughout the state. In total, more than 7,000 public agencies obtain their water from Bay-Delta tributaries or the Bay-Delta itself. The Bay-Delta is also California's most important fishery and wildlife habitat, and has been the subject of extensive restoration efforts.

**Bewaterwise.com:** A Web site sponsored by the Family of Southern California Water Agencies that has extensive information about how to use water more efficiently. The Web site address is <http://www.bewaterwise.com>.

**BDCP (Bay-Delta Conservation Plan):** A habitat conservation plan for preserving and enhancing the ecosystem for multiple species of plants and animals in the Delta and its upstream basins, intended to facilitate progress of water supply, water quality, ecosystem, and levee projects within a stable regulatory framework, and to obtain the permits necessary to comply with the California and Federal Endangered Species Acts.

**BMP (Best Management Practices):** As used in this report, the 14 water management practices contained in the California Urban Water Conservation Council Memorandum of Understanding.

**CALFED:** Stands for the CALFED Bay-Delta Program, an entity made up of federal and California state agencies charged with developing and implementing a long-term comprehensive plan to restore ecological health and improve water management for beneficial uses of the Bay-Delta system.

**California Friendly:** A campaign that encourages Southern California residents to make their homes California Friendly by using native and drought-tolerant plants, smart irrigation systems and water-wise appliances meeting certain standards. Metropolitan also is working with homebuilders and the building industry on projects and programs that will spotlight state-of-the-art California Friendly features in current and future developments.

**Central Valley:** The Central Valley is California's dominant agricultural region and forms the principal drainage of the western Sierras and other surrounding mountain ranges. Two of California's largest rivers, the Sacramento and the San

Joaquin, flow through the Central Valley. The Central Valley is also criss-crossed by much of the state's water conveyance system.

**CIMIS (The California Irrigation Management Information System):** A program in the Office of Water Use Efficiency, DWR, consisting of a network of more than 120 automated weather stations used by farmers and other irrigators to adjust watering needs.

**City Makeover Program:** A competitive grant program providing funding for new native and drought-tolerant themed landscapes in prominent public locations within Metropolitan's service area. It is part of a larger outreach program to foster appreciation of California native and drought-tolerant plants, efficient irrigation and appropriate site design in public, commercial and residential landscapes.

**Community Partnering Program:** Metropolitan's Community Partnering Program provides funding for water-related, educational outreach on regional water resources issues, such as conservation, watershed or water quality, educational material for California Friendly garden projects.

**Conjunctive Use:** Storing imported water in a local aquifer, in conjunction with groundwater, for later retrieval and use.

**CRA (Colorado River Aqueduct):** The Colorado River Aqueduct, built between 1933 and 1941 and owned and operated by The Metropolitan Water District of Southern California.

**Delta Vision Process:** The Delta Vision process was set into motion by Executive Order of the Governor and will develop a strategic plan for durable and sustainable management of the Sacramento/San Joaquin River Delta's multiple uses, resources and ecosystem.

**Desalination:** Taking salt out of seawater or brackish, salty water, this process uses high-pressure reverse osmosis to push the salty water through a filter membrane, producing clean, potable water to help meet water demands.

**DRMS (Delta Risk Management Study):** A study being undertaken by DWR as part of a Long-Term Delta Vision which will attempt to consider all significant risk factors affecting the Delta, including earthquakes, floods, rising sea levels due to global warming, land subsidence, wind, invasive non-native species, water exports, and upstream discharges of contaminants affecting Delta fisheries and drinking water quality.

**DRIP (Desalination Research and Innovation Partnership):** A consortium of California water agencies and other interested parties designed to develop cost-effective, large-scale advanced water treatment technologies for the desalination of Colorado River water.

**Groundwater Recovery:** The extraction and treatment of groundwater making it usable for a variety of applications by removing high levels of chemicals and/or salts.

**HECW (High Efficiency Clothes Washers):** Washing machines that use less water than conventional washers and that are included in Metropolitan's incentive programs.

**HET (High Efficiency Toilet):** Newer generation toilets that on average use about 1.28 gallons per flush, saving about 8,000 gallons per year.

**ICS:** The "Intentionally Created Surplus" program developed to allow water to be stored in Lake Mead that has been conserved through land-fallowing programs or other mutually beneficial water conservation efforts.

**IRP (Integrated Water Resources Plan):** Metropolitan's plan to ensure reliable water delivery to its customer member agencies despite population growth, dry spells and droughts. The IRP resources mix includes water storage, conservation, best management practices (BMPs), recycling, desalination, and groundwater recovery, among others.

**Imported (Water) supplies:** Water supplies imported into Metropolitan's service area from outside Southern California via the Colorado River Aqueduct, the State Water Project and Los Angeles Aqueduct.

**Local (Water) supplies:** Local water supplies include water resources produced and delivered by member agencies and retail agencies within Metropolitan's service area. Local supplies include groundwater, surface water, recycled water, groundwater recovery and desalination.

**Lower Basin States:** Three states – California, Arizona and Nevada – which are part of the seven-state Colorado River Compact and take water from the lower Colorado River Basin.

**LRP (Local Resource Program):** Metropolitan's funding mechanism for local recycling, groundwater recovery, and desalination projects. Projects are selected based on a competitive bidding process.

**MSHCP (Multi-Species Habitat Conservation Plan):** An MSHCP is a framework for providing resource development while ensuring appropriate environmental protections.

**Ozone:** A gas derived from oxygen that is bubbled through water during the treatment processes to kill microorganisms.

**Potable / Non-Potable:** Drinkable and non-drinkable water, respectively.

**PDA (Protector del Agua):** Metropolitan's irrigation management education course originally directed towards landscape maintenance personnel, and now expanded to include homeowners and on-line access.

**Proposition 13:** A 2000 water bond which authorized the state of California to sell \$1.97 billion in general obligation bonds to support safe drinking, water quality, flood protection and water reliability projects throughout the state.

**Proposition 50:** A 2002 water bond authorizing the state of California to sell \$3.4 billion worth of bonds to support safe drinking water, water security, water efficiency and protection of coastal watersheds and wetlands.

**Proposition 204:** A 1996 water bond authorizing the state of California to sell \$995 million in bonds to address Bay-Delta issues, statewide water supply and conservation, wastewater treatment and flood control and prevention.

**QSA (Quantification Settlement Agreement):** An agreement among Metropolitan, Coachella Valley Water District and Imperial Irrigation District that settles long-standing disputes regarding the priority, use and transfer of Colorado River water within California. The QSA is a key provision of California's water resources.

**RFP (Request For Proposals):** A formalized process to solicit proposals for consultation or participation in various incentive programs.

**RUWMP (Regional Urban Water Management Plan):** State law requires that every urban water retailer and wholesaler prepare and adopt a water management plan every five years.

**Salinity:** The measure of the salt content of water. High salinity often results in scaling or white deposits that accumulate on coffee pots, water heaters and plumbing fixtures resulting from dissolved mineral salts in the water. Also known as total dissolved solids or TDS.

**Seawater Barrier:** The injection of fresh water into wells along the coast to protect coastal groundwater basins from seawater intrusion. The injected fresh water acts like a wall, blocking seawater that would otherwise seep into groundwater basins as a result of pumping.

**Supply Buffer:** Part of Metropolitan's IRP, the supply buffer allows for development of additional local supplies as needed to meet regional water demands.

**ULFT (Ultra-Low-Flow Toilet):** ULFTs are designed to use 1.6 gallons per flush.

**WBIC (Weather-Based Irrigation Controllers):** Also called "Smart Controllers," WBICs adapt to current weather conditions, increasing efficiency of irrigation systems.

**Replenishment:** When supply and system conditions are favorable, Metropolitan can deliver interruptible water supplies to its member agencies at reduced rates that are used to replenish local groundwater supplies through percolation and direct injection.

**Watershed:** Geographical portions of the Earth's surface from which water drains or runs off to a single place like a river; also called a drainage area.

# *sb60 text*

## **Sections 130.5 and 130.7 of The Metropolitan Water District Act**

### ***Added by Statutes of 1999, Chapter 415 (SB 60 (Hayden))***

130.5. (a) The Legislature finds and declares all of the following:

(1) The Metropolitan Water District of Southern California reports that conservation provides 7 percent of its "water resource mix" for 1998, and conservation is projected to provide 13 percent of its total water resources by 2020.

Conservation, water recycling, and groundwater recovery combined, provide 12 percent of the district's total water resources for 1998 and those water resources are projected to increase to 25 percent of the district's total water resources by 2020.

(2) It is the intent of the Legislature that The Metropolitan Water District of Southern California expand water conservation, water recycling, and groundwater recovery efforts.

(b) The Metropolitan Water District of Southern California shall place increased emphasis on sustainable, environmentally sound, and cost-effective water conservation, recycling, and groundwater storage and replenishment measures.

(c) The Metropolitan Water District of Southern California shall hold an annual public hearing, which may be held during a regularly scheduled meeting of the Board of Directors of The Metropolitan Water District of Southern California, during which the district shall review its urban water management plan, adopted pursuant to Part 2.6 (commencing with Section 10610) of Division 6 of the Water Code, for adequacy in achieving an increased emphasis on cost-effective conservation, recycling, and groundwater recharge in accordance with this section.

The Board of Directors of The Metropolitan Water District of Southern California may modify any ongoing program as necessary to meet that requirement, consistent with the district's urban water management plan.

(d) The district shall invite to the hearings knowledgeable persons from the fields of water conservation and sustainability, and shall consider factors of availability, water quality, regional self-sufficiency, benefits for species and environment, the totality of life-cycle costs, including avoided costs, and short- and long-term employment and economic benefits.

(e) On or before February 1, 2001, and on or before each February 1 thereafter, The Metropolitan Water District of Southern California shall prepare and submit to the Legislature a report on its progress in achieving the goals of increased emphasis on cost-effective conservation, recycling, and groundwater recharge in accordance with this section, and any recommendations for actions with regard to policy or budget matters to facilitate the achievement of those goals.

(f) Nothing in this section shall diminish the authority of The Metropolitan Water District of Southern California pursuant to Section 25 or any other provision of this act, or otherwise affect the purposes of The Metropolitan Water District of Southern California as described in existing law.

130.7. (a) The Metropolitan Water District of Southern California, in cooperation with the following entities, shall participate in considering programs of groundwater recharge and replenishment, watershed management, habitat restoration, and environmentally compatible community development utilizing the resource potential of the Los Angeles River, the San Gabriel River, or other southern California rivers, including storm water runoff from these rivers:

(1) Member public agencies whose boundaries include any part of the Los Angeles River, the San Gabriel River, or any other river in southern California.

(2) The Water Replenishment District of Southern California.

(3) Local public water purveyors and other appropriate groundwater entities.

(4) The County of Los Angeles.

(5) The United States Army Corps of Engineers.

(b) Nothing in this section affects the powers and purposes of the Water Replenishment District of Southern California or any other groundwater management entity, the County of Los Angeles, local public water purveyors, or the United States Army Corps of Engineers.

# *member agencies*



*Joined Metropolitan  
December 6, 1928*



*Joined Metropolitan  
December 6, 1928*



*Joined Metropolitan  
December 6, 1928*



*Joined Metropolitan  
December 6, 1928*



*City of San Marino  
Joined Metropolitan  
December 6, 1928*



*City of  
**Santa Monica**<sup>SM</sup>  
Joined Metropolitan  
December 6, 1928*



*Joined Metropolitan  
December 6, 1928*



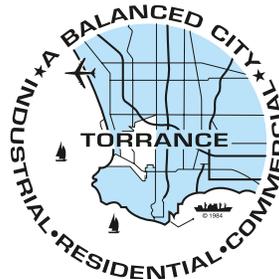
*Joined Metropolitan  
December 6, 1928*



*Joined Metropolitan  
December 6, 1928*



*Joined Metropolitan  
February 27, 1931*



*Joined Metropolitan  
February 27, 1931*



*Joined Metropolitan  
February 27, 1931*

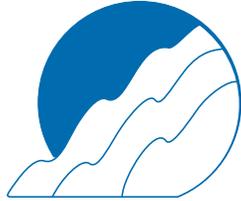


*Joined Metropolitan  
February 27, 1931*



**San Diego County  
Water Authority**

*Joined Metropolitan  
December 17, 1946*

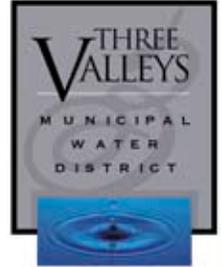


**West Basin  
Municipal Water District**

*Joined Metropolitan  
July 23, 1948*



*Joined Metropolitan  
October 16, 1950*



*Joined Metropolitan  
November 15, 1950*



*Joined Metropolitan  
November 26, 1951*



**Inland Empire  
UTILITIES AGENCY**

*Joined Metropolitan  
November 26, 1951*



*Joined Metropolitan  
January 15, 1953*



*Joined Metropolitan  
November 12, 1954*



**Central Basin  
Municipal Water District**

*Joined Metropolitan  
November 12, 1954*



*Joined Metropolitan  
December 1, 1960*



*Joined Metropolitan  
December 14, 1960*



*Joined Metropolitan  
March 27, 1963*



*Joined Metropolitan  
November 12, 1971*

# THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

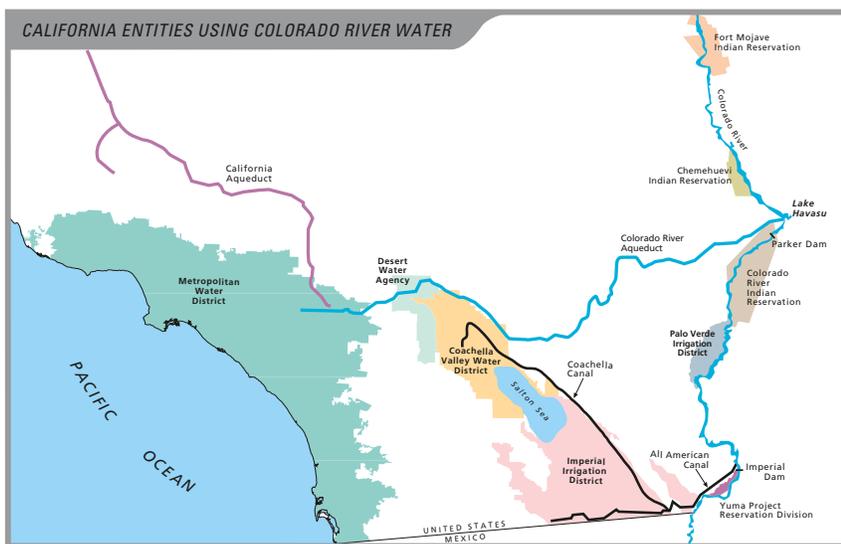


## METROPOLITAN'S MEMBER AGENCIES

### LEGEND

- Department of Water Resources' California Aqueduct
- Metropolitan's Colorado River Aqueduct
- Water Filtration Plants

### CALIFORNIA ENTITIES USING COLORADO RIVER WATER







**The Metropolitan Water District of Southern California**

[www.mwdh2o.com](http://www.mwdh2o.com)

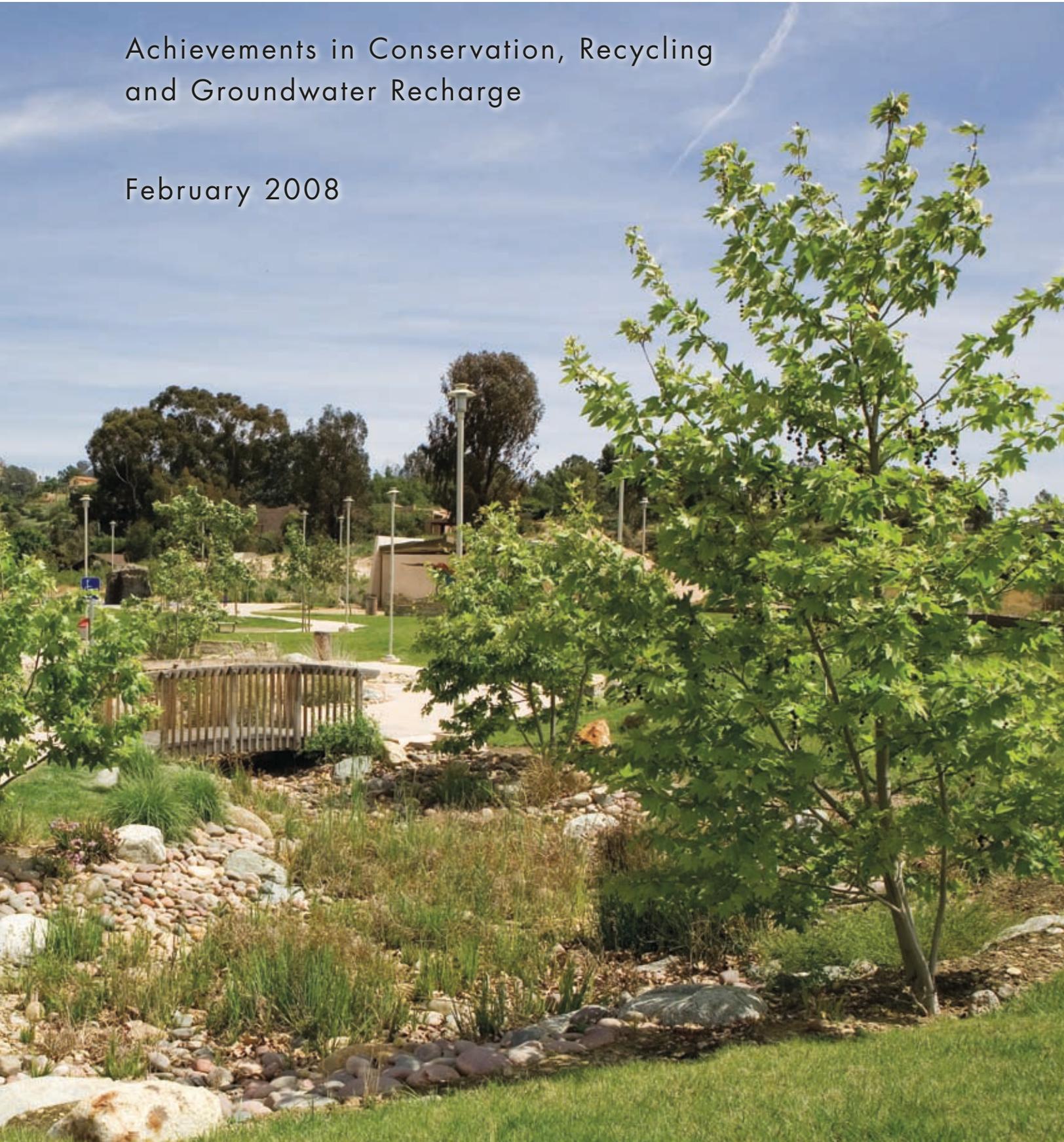
# The Metropolitan Water District of Southern California



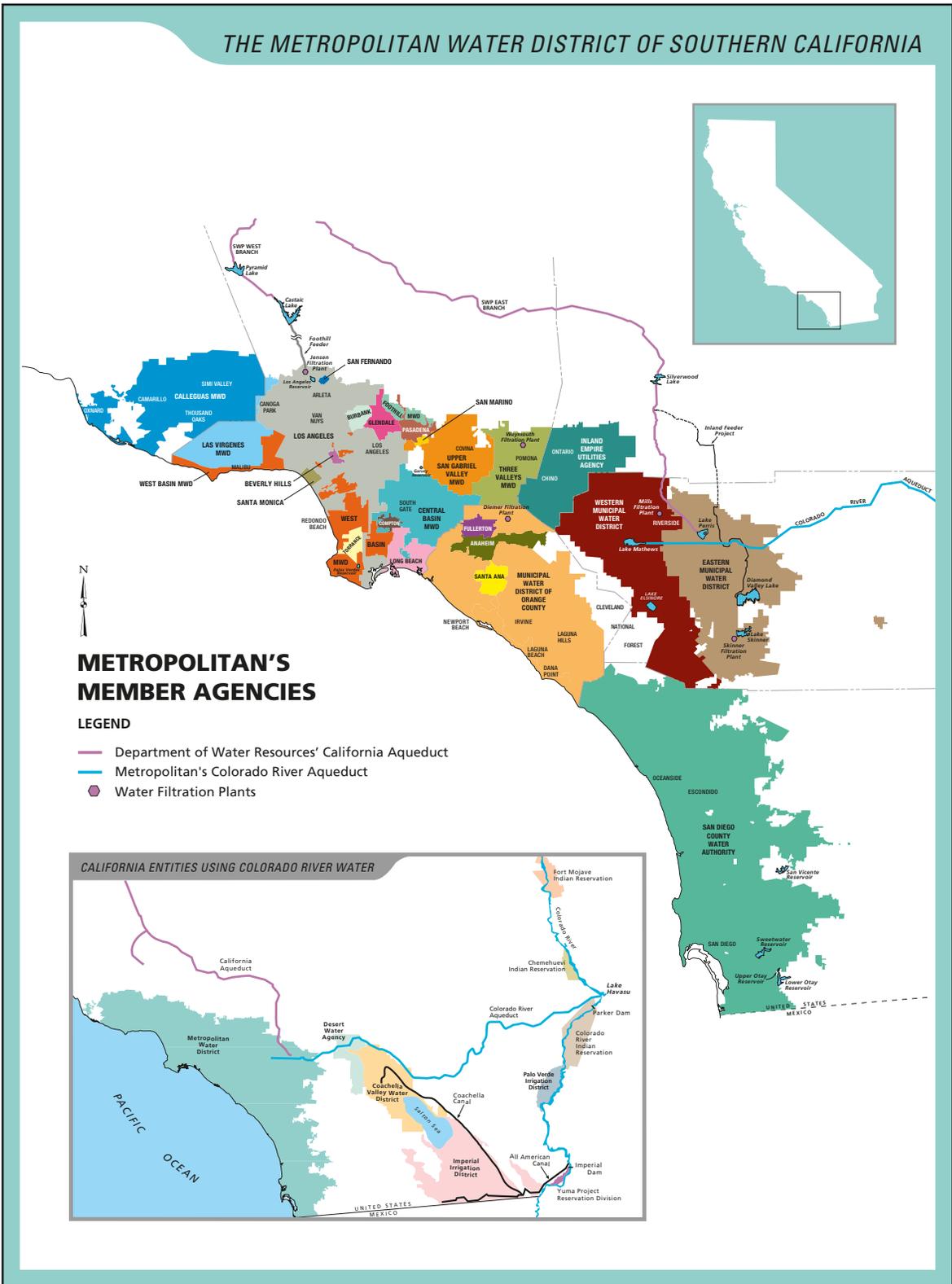
## ANNUAL PROGRESS REPORT TO THE CALIFORNIA STATE LEGISLATURE

### Achievements in Conservation, Recycling and Groundwater Recharge

February 2008



# THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



Pictured on the Cover:

One of the original Metropolitan City Makeover grant recipients, the city of La Mesa created the Briercrest Park featuring native and drought-tolerant landscaping.

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The Metropolitan Water District of Southern California was established in 1928 under an act of the state Legislature to import water supplies for the Southland. Metropolitan is a public agency and a regional water wholesaler.

It is governed by a 37-member board of directors representing 26 member public agencies that purchase some or all of their water from Metropolitan and serve more than 18 million people across six Southern California counties.

The mission of Metropolitan is to provide nearly 18 million people in its 5,200-square-mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Metropolitan draws supplies through the Colorado River Aqueduct, which it owns and operates. Water supplies also come from Northern California via the State Water Project and from local programs and transfer arrangements. An increasing percentage of Southern California's water supply comes from conservation, water recycling and recovered groundwater, which are further described in this report.

For more information about this report contact Kathy Cole, Metropolitan's Executive Legislative Representative at (916) 650-2642 or [kcole@mwdh2o.com](mailto:kcole@mwdh2o.com).



## EXECUTIVE SUMMARY



*Armed with a legacy of planning and a willingness to assume leadership, The Metropolitan Water District of Southern California continues to face and overcome new challenges.*

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**T**his annual report, submitted to the state Legislature, tracks Metropolitan Water District's progress in water conservation, recycling, groundwater recharge and storage programs.

### Conservation

Metropolitan has long been a leader in water conservation, providing financial incentives to member agencies to increase conservation programs in their service areas. Metropolitan offers incentives for residential, landscape and commercial water-saving devices and processes. As a direct result of these incentive-based programs (also referred to as active conservation), the region conserved about 118,000 acre-feet in fiscal year 2006/07.

Because conservation is an essential component of the framework for regional water resource planning, Metropolitan has invested about \$205 million in conservation activities, saving nearly 1 million acre-feet of water since 1990. Investments are guided by an Integrated Water Resources Plan, adopted by Metropolitan's board of directors in 1996, which provides a 20-year strategy to balance locally developed resources with imported supplies.



Member agencies have sponsored several irrigation controller exchange events to broaden the distribution of weather-based or “smart controllers.”

The IRP goal for water conservation is 1.1 million acre-feet annually by 2025. About 300,000 acre-feet will be available from incentive-based programs with the target balance achieved through existing (pre-1990) conservation activities and programs, as well as from compliance with more recent plumbing codes and other laws.

Metropolitan’s investments in incentive-based programs increased by 50 percent to \$15 million in fiscal year 2006/07 as a direct result of greater public awareness and increased purchases of water conservation devices. Metropolitan conducted market research projects in 2007 to evaluate the strengths, weaknesses, opportunities and constraints of its conservation programs. The feedback has been used to streamline administrative procedures and to expand partnership opportunities and avenues for outreach.

In 2007, incentives were extended to public sector applicants with the newly established \$15 million Public Sector Water Efficiency Partnership Demonstration Program. This program aims to increase public support for conservation by supporting public agency accomplishments and efforts.

Additional recent conservation program achievements include the following highlights, which combine figures for both the residential and commercial sectors:

- Receipt of 31 proposals for funding consideration in response to the second solicitation for Metropolitan’s Enhanced Conservation Program;
- Distribution of more than 4,000 weather-based irrigation controllers made possible by a \$1.8 million state grant;
- Rebates of \$630,000 provided for installation of 18,000 high-efficiency clothes washers;
- Rebates of \$500,000 for installation of 5,000 high-efficiency toilets using state grant funding;
- Installation of 83 percent more water-saving devices (33,577) compared with the previous fiscal year (18,365);
- Expansion of water-efficient devices eligible for rebates, including nozzles, spray heads, sensors and controllers.

## Communications and Outreach

To draw attention to the significant need for conservation, Metropolitan’s board in June 2007 approved the largest communications and outreach campaign in the agency’s history to encourage individual conservation practices throughout the Southland.

Metropolitan's investment of about \$19 million in fiscal year 2006/07 produced 98,000 acre-feet of recycled water in the Southland.



Many of Metropolitan's conservation programs fall under the aegis of the California Friendly® program that promotes water-wise choices. Since the program started in fall 2002, Metropolitan has invested about \$7.2 million in outreach, advertising and educational materials. A key component is the [www.bewaterwise.com](http://www.bewaterwise.com) Web site that attracted nearly 200,000 visitors in fiscal year 2006/07.

## Education Programs

In 2007, Metropolitan and its member agencies interacted with nearly 100,000 school-age children from K-12 and close to 1,000 new teachers through educational materials, activities and events in Metropolitan's service area. Outreach opportunities included curriculum development, the Diamond Valley Lake Education Field Trip Program, Solar Cup™ 2007, the Southern California World Water Forum College Grant Program and a Student Art Program.

## Water Recycling, Groundwater Recovery and Storage

Metropolitan has fostered more than 85 water recycling and groundwater recovery programs by providing financial incentives to member and retail agencies for development and operation.

Metropolitan invested about \$28 million in fiscal year 2006/07 to produce 147,000 acre-feet (equivalent to annual water needs of about 300,000 average Southern California families for one year). Combined with Metropolitan-funded projects, the region as a whole produced 319,000 acre-feet of recycled and recovered water supplies.

In 2007, Metropolitan revisited its Local Resources Program and the nearly decade-old competitive funding design, which pays up to \$250 per acre-foot for eligible projects. In April 2007, Metropolitan's board of directors adopted new policy principles for the program that now employs an open and continuous process for project applications to develop an additional 174,000 acre-feet of water. Incentives continue to be as much as \$250 per acre-foot.

There are currently 10 agreements executed by Metropolitan providing for approximately 415,000 acre-feet of groundwater storage. These "conjunctive use" agreements allow Metropolitan to store surplus water supplies when they become available in local groundwater basins for future use. To date, nearly \$35 million of state proposition funds have been allocated to these programs.



The West Basin Water Recycling Facility is one of the largest recycling plants in the nation located in El Segundo, California.

*LRP Highlights for Fiscal Year 2006/07 include:*

- Deliveries increased 19,000 acre-feet to reach 150,000 acre-feet in 2006/07.
- Production started with Central Basin Municipal Water District’s Alamitos Barrier Reclaimed Water Project; Santa Margarita Water District’s Ladera Ranch and Talega Valley System Expansion in the service area of the Municipal Water District of Orange County; City of Los Angeles’ Harbor Recycling Project; and Eastern Municipal Water District’s Recycled Water Pipeline Reach 16.

**Watershed and Regional Projects**

Metropolitan is active on planning boards and organizations formed to improve watershed management and restoration. Each group has an area of interest, whether it be the Bay-Delta watershed, stormwater management or regional planning. Metropolitan works with key stakeholders in the Bay-Delta watershed, and participates in the Greater Los Angeles County Integrated Regional Water Management Plan and the Los Angeles and San Gabriel Rivers Watershed Council.

**Community Partnering Program**

The Community Partnering Program joins nonprofit community organizations, public agencies, professional associations and educational

institutions together in sponsorship of watershed education and water conservation programs.

**Ethics**

In 1995, Metropolitan’s board identified six core values—integrity, stewardship, diversity, leadership, open communication and teamwork—to guide the organization in fulfilling its mission in an ethical manner. Metropolitan embraces corporate social responsibility, which refers to choices made by the organization regarding the treatment of employees, the environment, communities in which we work, member agencies, and business partners.

The Ethics Office provides education, a sounding board and nationally recognized expertise in guiding the organization towards maintaining an ethical culture.

**Conclusion**

One of Metropolitan’s greatest strengths is in planning, support and implementation of a variety of programs and projects that bring water supply reliability to the region. Throughout its history, Metropolitan has invested in innovative water resources and critical infrastructure. Faced with the possibility of drought and court rulings to protect endangered species, Metropolitan’s planning acumen will identify new resources and extend the use of the water it has. An enduring sense of initiative will continue to be the driver towards a sustainable future for California.

# ACHIEVEMENTS SCORECARD

<i>Metropolitan-Assisted Local Resources</i>	
<b>Active Conservation<sup>1, 2</sup></b>	
FY 2006/07 New Water Saved From Active Conservation Programs	8,300 acre-feet
FY 2006/07 Water Saved From New & Existing Active Conservation Programs <sup>3</sup>	118,000 acre-feet
Cumulative Water Saved From Active Conservation Programs <sup>4</sup>	977,000 acre-feet
FY 2006/07 Active Conservation Investment	\$15.4 million
Cumulative Active Conservation Investment	\$205 million
Total FY 2006/07 Conservation Investment <sup>5</sup>	\$19.9 million
<b>Water Recycling<sup>6</sup></b>	
FY 2006/07 Production	98,000 acre-feet
FY 2006/07 Investment	\$19.0 million
Cumulative Production	912,000 acre-feet
Cumulative Investment	\$173.0 million
<b>Groundwater Recovery<sup>6</sup></b>	
FY 2006/07 Production	49,000 acre-feet
FY 2006/07 Investment	\$9.0 million
Cumulative Production	381,000 acre-feet
Cumulative Investment	\$71.0 million
<i>Metropolitan-Assisted Groundwater Programs</i>	
<b>Conjunctive Use Program</b>	
Metropolitan Cumulative Investment through September 2007	\$52.4 million
Metropolitan Appropriated Funds for Programs	\$63.4 million
Proposition 13 Grant Funds Administered by Metropolitan <sup>7</sup>	\$45.0 million
Conjunctive Use Storage Program Balance	240,000 acre-feet
<b>Cyclic Storage Balance<sup>8</sup></b>	63,500 acre-feet
<b>Supplemental Storage Balance<sup>8</sup></b>	36,000 acre-feet
<b>Water Rate Incentives For Groundwater Replenishment<sup>9</sup></b>	
Cumulative Investment through September 2007	\$363 million
Replenishment Certified January through September 2007	69,000 acre-feet

**Footnotes:**

1. In fiscal year 2006/07 Metropolitan bench marked its annual and cumulative savings estimates with audited historical data and new device-savings calculations.  
 2. Active conservation is water saved directly as a result of conservation incentives by Metropolitan and other water agencies, and includes device retrofits, process improvements, landscape efficiency improvements and other efficiency measures utilized in commercial, industrial and residential sectors. Additional water is conserved as a result of plumbing codes and other laws governing appliances and other products' efficiency standards.

3. Water savings from devices installed in fiscal year 2006/07 and from devices installed in prior years. It also includes water savings initially achieved through Metropolitan's active programs and then maintained through plumbing codes. Table below shows annual water savings based on audited historical data and new device-savings calculations.

Water Saved From New & Existing Active Conservation Programs (Acre-Feet)															
1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
300	15,400	12,600	17,800	20,100	31,000	50,800	51,200	57,200	63,200	67,000	81,600	88,800	96,200	100,900	104,600

4. Cumulative water savings from active conservation programs since 1991. It also includes water savings initially achieved through Metropolitan's active programs and then maintained through plumbing codes. Table below shows cumulative water savings based on audited historical data and new device-savings calculations.

Cumulative Water Saved From Active Conservation Programs (Acre-Feet)															
1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
300	15,700	28,300	46,200	66,200	97,300	148,100	199,400	256,600	319,700	386,700	468,400	557,200	653,300	754,200	858,900

5. Total conservation includes the Conservation Credits program plus education and advertising campaigns to promote conservation.

6. Metropolitan has provided financial incentives to its member agencies to develop new water recycling projects and groundwater recovery projects (that make degraded groundwater potable) through its Local Resources Program (LRP); figures reflect deliveries and payments reported through June 2007.

7. Proposition 13 refers to Chapter 9 of the Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act of 2000.

8. Cyclic Storage and Supplemental Storage balances as of September 2007

9. Water Rate Incentives represent the discount in water rates Metropolitan provides to its member agencies to encourage groundwater storage.



## CONSERVATION



*Metropolitan's incentive programs extend to the residential, commercial and industrial sectors to promote water-wise choices and significant regional water savings.*

---

**M**etropolitan has long been a leader in water conservation, providing financial incentives to member agencies to develop conservation programs in their service areas. The benefits extend to residential, commercial and industrial sectors with Metropolitan offering guidance and financial incentives to use more water-efficient technologies. In fiscal year 2006/07 the region conserved about 118,000 acre-feet as a direct result of Metropolitan's incentive-based programs. Metropolitan's cumulative investment in active conservation since 1990 is about \$205 million, providing a water savings of nearly 1 million acre-feet.

The goal for water conservation savings as outlined by Metropolitan's planning blueprint, the Integrated Water Resources Plan, is 1.1 million acre-feet annually by 2025. Towards that target, about 300,000 acre-feet will come from incentive-based conservation (also referred to as active conservation) with the balance of approximately 800,000 acre-feet saved through existing conservation (pre-1990) and compliance with more recent plumbing codes and other laws.

The IRP, which was adopted by Metropolitan's board of directors in 1996, provides a 20-year plan to balance locally developed resources with imported supplies. It calls for investments in water conservation, recycling, groundwater treatment, storage and transfers, and in return brings supply diversity and stability. The plan is updated on a five-year cycle and progress toward achieving targets is tracked on an annual basis.

**Californians  
can make  
every day  
Earth Day.**

It's easy to make Earth Day a daily celebration in California. Just be California Friendly®.

That means looking for the California Friendly label when you shop for plants and products for your home. California Friendly products help conserve water. And that means saving money on your water bill, too.

Good for California. Good for you. That's California Friendly.

Celebrate Earth Day with a free pack of California Friendly seeds for your garden. Just call 877-CFLife1 (877-235-4331) and mention Code Breeze.

And remember to go to **bewaterwise.com** for even more water saving tips.

**1. Buy California Friendly plants.**  
They'll last longer and need less care than many annuals.

**2. Start small.**  
Pick a section of your garden and make it California Friendly.

**3. Go to bewaterwise.com**  
Find information about other plants that can thrive in your garden.

**Save water inside as well as out.**  
Being California Friendly® involves more than just plants. It also applies inside your home, with rebates on devices like dual-flush toilets, high-efficiency clothes washers, or weather-sealing smart controllers for your sprinklers. Look for the complete list of rebate items at [bewaterwise.com](http://bewaterwise.com).








**bewaterwise.com**  
Metropolitan Water District of Southern California  
Member of Southern California Water Agencies

The California Friendly program serves as an umbrella for conservation projects and activities.

## Conservation Activities

Metropolitan's incentive-based programs are pursued in three water-use areas: residential, landscape and commercial. The programs are complemented by public outreach and education activities, many of them part of the California Friendly® marketing effort. Through the Innovative Conservation and Enhanced Conservation programs, Metropolitan encourages new research and development in the area of water use efficiency.

Metropolitan's investments in incentive-based programs increased by 50 percent to \$15 million in fiscal year 2006/07 as a direct result of greater public awareness and increased purchases of water conservation devices.

To call attention to the pressing need for conservation, Metropolitan's board in June 2007 approved the largest communications, education and outreach campaign in its history.

Metropolitan conducted market research studies in 2007 to evaluate the strengths, weaknesses, opportunities and constraints of its conservation programs. The results have been used to increase participation in the residential, commercial, landscape and California Friendly Homes conservation programs and to streamline administrative processes.

Refinements made to the conservation incentive programs this past year include:

- New or upgraded incentives for devices;
- Increased incentives for commercial high-efficiency clothes washers;
- Program administration upgrades;
- Merging of Water Savings Performance Program with the Large Landscape Measured Water Savings Program and the Industrial Process Improvement Program to improve administration of Metropolitan's pay-for-performance conservation programs.

## Residential Programs

### *Regional Incentive Program*

In July 2007, Metropolitan's board approved a region-wide residential device incentive program similar to the successful Commercial, Industrial and Institutional "Save-Water-Save-A-Buck" program. This streamlined approach allows customers and landscape contractors throughout Metropolitan's service area to receive rebates directly from Metropolitan. It also permits regional advertising and promotion and ensures consistent customer eligibility throughout the service area.

### **High-Efficiency Toilets**

Metropolitan has provided incentives for about 22,000 HETs to residential customers. A \$100 increase in Metropolitan's per-toilet rebate was made possible by a grant from the California Department of Water Resources which has now been nearly expended.

Through member agency-sponsored events, Metropolitan has exchanged nearly 3,200 irrigation controllers in fiscal year 2006/07.



### ***High-Efficiency Clothes Washers***

A more aggressive HECW program is an integral component of Metropolitan's efforts to sustain momentum in achieving IRP goals for urban water conservation. Clothes washers are the second largest use of water inside the home (trailing toilets). To date, Metropolitan has provided about 200,000 rebates for high-efficiency clothes washers.

In June 2007, DWR selected Metropolitan's HECW program for funding and added \$25 to Metropolitan's existing \$85 incentive for high-efficiency clothes washers. Approximately 80,000 rebates with this extra funding will be available to retail customers through participating member agencies and Metropolitan's regional residential program. Installation of the next generation HECWs is expected to provide direct water savings of more than 10,000 gallons per year for each washer installed.

### ***Weather-Based Irrigation Controllers***

Metropolitan has worked closely with its member agencies to explore different methods for distributing weather-based ("smart") irrigation controllers to the public. These devices, relatively new to the residential market, are expected to save 13,500 gallons each year over the estimated 10-year device life. Special events hosted by member agencies and sponsored with grant funding, have proven a successful venue for distribution. Through its member agencies, Met-

ropolitan exchanged nearly 3,200 controllers in fiscal year 2006/07. The exchange of old controllers for free, new weather-based controllers has also been coupled with Metropolitan's landscape irrigation courses.

### **Landscape Programs**

#### ***California Friendly® Landscape Irrigation Efficiency Training***

Metropolitan successfully completed two grant projects to bring landscape training to the Internet with on-line classes made possible with awards from the federal Bureau of Reclamation and DWR. Two residential courses and a professional series were converted to Web-based tutorials that are now offered online and free to the public.

These training courses continue to be extremely popular and have seen more than 40,000 students participate since the program's inception in 1994.

#### ***Synthetic Turf Program***

Metropolitan now provides an incentive of 30 cents per square foot or about \$13,000 per acre for synthetic turf. Although Metropolitan's incentive represents only two to three percent of total project cost, the program creates a positive signal that synthetic turf is a valid water-saving landscape choice. Synthetic turf is becoming

increasingly popular for sports fields, parks and residential applications.

### *Water Savings Performance Program*

July 2007 marked the debut of Metropolitan's Water Savings Performance Program, which provides incentives for both landscape water use efficiency and industrial process improvements. These process improvements include installation of equipment that captures, treats and reuses water or the replacement of existing equipment with more efficient equipment that reduces water demand.

There are currently nine agreements for industrial process improvements, of which six have been implemented, with a total water savings of approximately 1,430 acre-feet per year.

Landscape conservation, a key component under Metropolitan's Water Savings Performance Program, has been revamped to make irrigation system retrofits more enticing for industrial, institutional and large multi-family residential properties. Property owners are eligible to receive financial incentives up to 100 percent of the project cost for qualified projects. Eligible equipment includes a broad spectrum of new, more efficient hardware such as the latest nozzles, spray heads, sensors and controllers. To broaden the program reach, a new audit component has been added that targets high-volume water users within Metropolitan's service area.

## Commercial, Industrial and Institutional Program

### *Save-Water-Save-A-Buck Program*

Metropolitan's successful device incentive program for commercial, industrial and institutional (CII) customers has provided rebates for more than 145,000 commercial device retrofits throughout Southern California since 2001. The CII Water Use Efficiency program is part of the Save-Water-Save-A-Buck Program, which also targets multi-family residences. Metropolitan is exploring new partnerships with energy utilities to increase program participation through co-funding and other mutually beneficial projects.

In fiscal year 2006/07, the lifetime water savings attributed to the number of devices retrofitted jumped nearly 35 percent to 31,000 acre-feet from the previous fiscal year 2005/06.

### *Public Sector Water Efficiency Partnership Demonstration Program*

The goal of the newly established \$15 million Public Sector Water Efficiency Partnership Demonstration Program is to increase public support for conservation by supporting highly visible public agency efforts. Agreements with public agencies for the immediate implementation of water saving measures include financial incentives up to \$500 per acre-foot of potable water saved. Estimates for total program water savings are about 40,000 acre-feet.

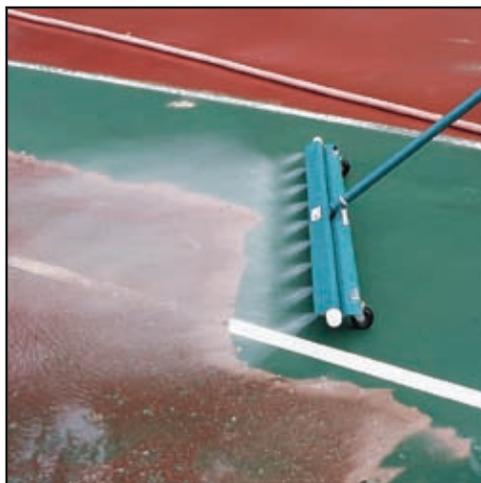


Agencies using 50 acre-feet or more per year of water are the initial target audience for this program. They will be offered:

1. Free water-efficiency audits that identify practical solutions;
2. Up-front incentives to purchase certain water saving devices, such as smart irrigation controllers and high-efficiency toilets;
3. Pay-for-performance water use reduction incentives;
4. Financial incentives to hook up landscape irrigation systems to existing recycled water supplies.

### Innovative Conservation Program

With grant funding, the ICP supports research projects that investigate creative ways to conserve water. The 2006/07 solicitation of projects yielded 39 proposals totaling \$6 million in funding requests from public agencies, community-based organizations, private companies, entrepreneurs, research institutes and equipment manufacturers. Fifteen projects were selected for grant funding totaling \$610,000. Proposals include new faucet valve technology to reduce leaks, soil amendment to reduce water and fertilizer use, industrial reuse of boiler exhaust gases, and new technology for cleaning commercial food blenders. These investigation projects will start in early 2008.



### Enhanced Conservation Program

Metropolitan's Enhanced Conservation Program allows member agencies to pilot new water efficient devices or new program implementation methods. Metropolitan recently released a second solicitation for projects that yielded 31 proposals, which will be considered for funding.

### Communications and Outreach Program

An advertising and outreach campaign during the 2007 spring and summer seasons heightened awareness of the need for water conservation throughout the region due to dry-year conditions. During the months of May-July, Metropolitan advertised on more than 120 radio stations with its "Let's Save Water" message, offering easy tips on saving water inside and outside homes and businesses. The ad campaign continued through the end of 2007, adopting the theme of "It's Time to Get Serious About Saving Water" to motivate greater interest and participation in water conserving activities.

### California Friendly Water Conservation

Many of Metropolitan's conservation programs fall under the aegis of the California Friendly program that promotes water-wise lifestyle choices. Since the program started in fall 2002, Metropolitan has partnered with retailers, home builders, schools, and landscape professionals to expand water-saving opportunities. A central component is the [bewaterwise.com](http://bewaterwise.com) Web site that attracted nearly 200,000 visitors in fiscal year 2006/07.

(Opposite Page) A "suite" of rebates are offered to residential, commercial and industrial partners including programs for synthetic turf program and high-efficiency clothes washers.

(This Page) The water broom was born of the CII program, which supports development of new water-saving technologies.



City Makeover project grant recipient Rose Haven Heritage Garden in Temecula, California incorporates native and water efficient plants into an already developed garden of 1,000 rose bushes.

### *Efficiency Programs for Home Builders (California Friendly Home Program)*

A unique public-private partnership continued between Southern California water agencies and home building industries in 2007. Metropolitan joined forces with the federal Bureau of Reclamation and member agency Eastern Municipal Water District in collaboration with the regional Building Industry Association, to create the California Friendly Landscape Pilot Rebate Program for New Homes.

Already more than 50 percent complete, three participating communities built or developed by John Laing Homes (“Holiday” in Sun City), KB Home (“Olive Grove” in Perris) and Shea Homes (“Watermill” in French Valley) incorporate sustainable California Friendly landscaping in every unit with an estimated 50 percent reduction in outdoor water use relative to conventional building practices.

### *California Friendly Home Certification*

A multi-year pilot program is under way to certify new single-family and multi-family homes as California Friendly if they meet standards for water efficiency inside and outside the home. The program will be conducted in concert with other green building programs to maximize cost-effectiveness, while ensuring that “green” homes are as water-efficient as possible.

### *City Makeover Program*

The City Makeover Program is part of a larger effort by Metropolitan, in cooperation with the federal Bureau of Reclamation, to foster appreciation of California native and drought-tolerant plants and efficient irrigation techniques in public, commercial and residential landscapes.

For the 2005-07 grant cycle, Metropolitan awarded nearly \$900,000 in grants to 20 projects. Sixteen of the projects are completed, and the remaining four will be completed by June 2008.

Grants up to \$75,000 were offered for high-visibility, public landscapes featuring native and California Friendly plant palettes and state-of-the-art irrigation, including community involvement and education components.

### *Education Programs*

During 2007, Metropolitan and its member agencies reinforced their conservation message with educational materials, activities and events for about 100,000 K-12 students and close to 1,000 new program teachers throughout the service area. Key curriculum programs included All About Water (grades K-3), Admiral Splash (grade 4), Water Ways (grade 5), Water Times (grade 6), Water Quality (grades 7-12), Water Politics (grades 9-12) and Water Works (grades 6-12).

Metropolitan's Solar Cup program has seen high school student team participation grow from eight teams in its first year (2000) to 43 teams on the roster for 2007.



### *Diamond Valley Lake Education Field Trip Program*

Seven school districts were a part of the Diamond Valley Lake Education Field Trip Program with more than 5,400 student participants.

### *Solar Cup™ 2007*

The fifth year of the Metropolitan-sponsored Solar Cup program saw participation increase from 34 to 43 high school teams, attracting more than 900 students. The 2007 event attracted more than 3,500 school, family and public attendees, along with extensive local newspaper coverage and national media exposure.

Student teams constructed solar-powered boats and competed in endurance and sprint races. Teams also had to produce a visual display on a water issue, backed by research and a written report submitted to a judging panel for scoring.

### *Southern California World Water Forum College Grant Program*

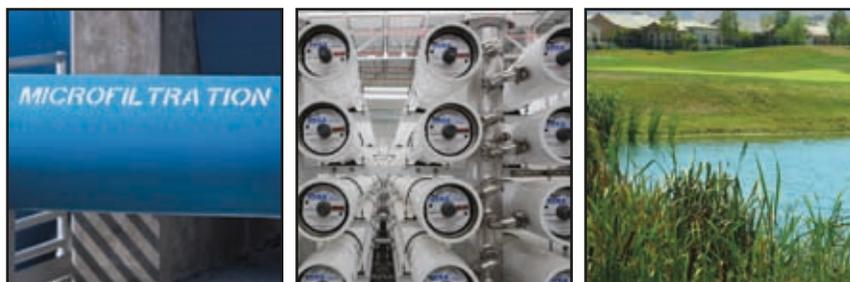
In 2007, funding for the second cycle of the Southern California World Water Forum College Grant program was increased. This competitive program for community colleges and universities awards grants for research and development of water-use efficiency and water quality technologies, policy initiatives and, new to the next cycle, a communication outreach strategy for water-stressed regions, locally or globally.

### *Metropolitan's 2007 Student Art Program*

Metropolitan held its annual "Water is Life" Student Art Program for K-12 students. Twenty-four member and retail agencies submitted 173 K-12 student posters, 36 of which were selected as Metropolitan winners.



## WATER RECYCLING, GROUNDWATER RECOVERY AND STORAGE



*Water recycling and groundwater recovery stretch the use of existing supplies while groundwater storage opportunities serve as a buffer against future supply uncertainties.*

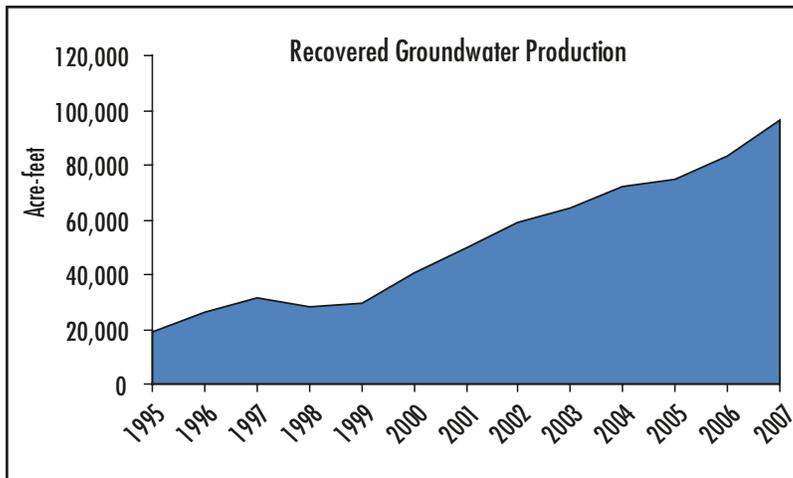
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**W**ater recycling and groundwater recovery are increasingly important assets in the region's diverse local resource portfolio and help bring greater water supply reliability to Southern California. Local water agencies have largely led the development of water recycling and groundwater recovery projects with newer projects being encouraged by financial incentives provided through Metropolitan's Local Resources Program.

### Local Resources Program

In April 2007, Metropolitan's board of directors changed the way projects are selected for funding under the LRP which pays up to \$250 per acre-foot for eligible projects that expand water recycling and groundwater recovery. The new program employs an open process to accept and review project applications on a continuous basis for the development of 174,000 acre-feet per year of local resources. Previously, Metropolitan selected projects through a competitive request for proposal process.

Metropolitan partnered with its member agencies on a task force to review the existing method of selecting and managing the LRP and to address local project implementation issues. The LRP Task Force reviewed administrative processes, program approaches, regional need based on the Integrated Water Resources Plan Update targets, and timing of future program solicitations.



In April 2007, Metropolitan’s board moved to broaden regional support of local resource development. Metropolitan facilitated the first of a series of bimonthly meetings beginning in June 2007 and solicited input from its member agencies on ways to improving the development of recycled water and groundwater recovery. Topics discussed included regional coordination of regulatory issues, legislative approaches, funding options, technical issues, and public acceptance.

### *Fiscal Year 2006/07 Project Performance*

The following LRP projects began production in fiscal year 2006/07:

- Central Basin Municipal Water District’s Alamitos Barrier Reclaimed Water Project;
- Ladera Ranch and Talega Valley System Expansion in the Municipal Water District of Orange County service area;
- City of Los Angeles’ Harbor Water Recycling Project; and
- Eastern Municipal Water District’s Recycled Water Pipeline Reach 16.

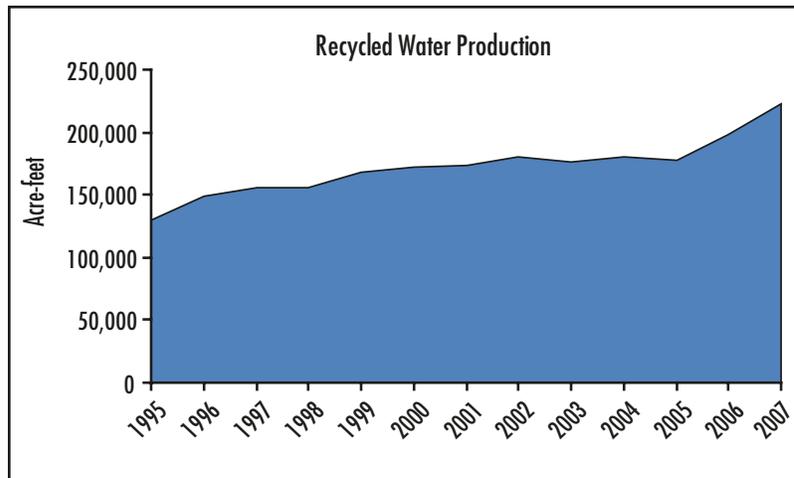
### **Local Resources Highlights**

- The 2006/07 fiscal year saw 147,000 acre feet of water produced under the LRP, a 19,000 acre-foot increase over the previous year;
- Ten competitively selected projects were selected for LRP funding and contracted for future production;

- Metropolitan staff participated in the drafting of federal legislation along with the New Water Supply Coalition to allow special tax-free bonds to be used for seawater desalination, water recycling and groundwater recovery projects;
- About 14 percent of the recycled water produced under the LRP program was used for groundwater recharge and seawater barriers;
- Metropolitan’s membership in the Affordable Desalination Collaboration allowed oversight of current research into ways to reduce energy use and the cost of desalination;
- Metropolitan’s participation on the WateReuse Foundation board gave the agency the opportunity to influence research activities to address water challenges within our region with a focus on recycling and seawater desalination.

### **Groundwater Management**

Metropolitan’s dry-year Conjunctive Use Programs store surplus imported supplies to maintain reliability during dry, drought and emergency conditions. Metropolitan has executed 10 agreements with member and retail agencies for groundwater storage within the service area. This provides Metropolitan with a total of more than 415,000 acre-feet of additional storage within the service area with a contractual yield of more than 115,000 acre-feet per year during dry, drought and emergency conditions. To date nearly \$45 million of state proposition funds, and \$52.4 million of Metropolitan’s capital



funds, have been allocated to these programs. One of the 10 programs is complete – the Long Beach Conjunctive Use Program – and Metropolitan has called about 4,500 acre-feet from that storage program.

In addition to the Conjunctive Use Program, Metropolitan has about 63,000 acre-feet in storage locally through agreements with several member agencies. These “cyclic” storage agreements allow Metropolitan to deliver water for underground storage in advance of agency needs.

Also, during the 2005/06 water year when California received significant precipitation Metropolitan offered the “Supplemental Storage Program” to encourage the storage of surplus water. As of late September 2007, Metropolitan had about 36,000 acre-feet in storage through agreements with the city of Los Angeles and Municipal Water District of Orange County. In December 2007, Metropolitan called for 6,900 acre-feet from the 16,000 acre-feet stored with MWDOC.

<i>Conjunctive Use Program</i>	<i>Total Storage (acre-feet)</i>	<i>Dry-Year Yield (acre-feet per year)</i>
<b><i>Ventura County</i></b>		
North Las Posas Phase 1 & 2*	210,000	47,000
<b><i>Los Angeles County</i></b>		
Claremont	3,000	1,000
Compton	2,295	765
Foothill	9,000	3,000
Live Oak	3,000	1,000
Long Beach Phase 1	13,000	4,333
Long Beach – Lakewood	3,600	1,200
<b><i>Orange County</i></b>		
Orange County	60,000+	20,000
<b><i>San Bernardino County</i></b>		
Chino Basin	100,000	33,000
<b><i>Riverside County</i></b>		
Elsinore Basin	12,000	4,000
<b>Total</b>	<b>415,895</b>	<b>115,298</b>
*North Las Posas Phase 3 will increase dry-year yield of the program to 70,000 acre-foot per year.		



## WATERSHED INITIATIVES



*Metropolitan is involved in many efforts to protect, preserve and enhance the watersheds from where it draws its supplies and those within its service area.*

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**M**etropolitan is active on planning boards and organizations formed to improve watershed management and restoration. Metropolitan works with key stakeholders in the Bay-Delta watershed, and participates in the Greater Los Angeles County Integrated Regional Water Management Plan and the Los Angeles and San Gabriel Rivers Watershed Council.

### Los Angeles and San Gabriel Rivers Watershed Council Water Augmentation Study

Metropolitan has been a participant in the Water Augmentation Study, a research study on stormwater runoff measurement, since the inception of the study in 2000. The Los Angeles and San Gabriel Rivers Watershed Council directs the Water Augmentation Study, which is a 10-year study and demonstration project that investigates the benefits, costs, and risks of capturing stormwater to augment water supply through infiltration. The study has been conducted in collaboration with participation from academia, non-profit organizations, federal, state and local public agencies.

Seven years of research have resulted in stormwater best management practices being installed at six urban sites of different land uses (parks, school, residential, and industrial) with groundwater monitoring for a period of three to six years at each site. The study demonstrated that stormwater infiltration would not



An integrated approach to water management addresses a broad range of issues that includes growing water demands, open space and habitat as well as financing.

adversely impact groundwater quality when proper best management practices are implemented on site. The research effort also generated a computer model for users to assess infiltration potential (quantity of stormwater captured) based on physical characteristic of an area, land use, soil type and additional runoff capture; a list of best management practices and suitability based on land use and other physical constraints; a report on the valuation of stormwater infiltration as a local supply source; and specific criteria for selection of applicable neighborhoods for retrofit.

The study has progressed to the next phase to design and retrofit a neighborhood in Sun Valley, Los Angeles to demonstrate the beneficial use of stormwater. With the demonstration project in place, the final steps of the study will include a regional strategy report for implementation.

## Integrated Regional Water Management Planning

The IRWMP is an integrated approach to water management that addresses a broader range of issues including growing water demands, water supply reliability, water quality, stormwater management, open space and habitat, and financing of projects. The Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Proposition 50) and the Safe Drinking Water, Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposi-

tion 84), included grant funds for local agencies to implement projects identified through adopted IRWMPs.

Metropolitan has been monitoring and providing technical assistance as needed to its member agencies that are members of the various Regional Water Management Groups within the service area. Metropolitan was invited to participate as the surface water management area representative on the Greater Los Angeles County region leadership committee.

The goals of the various IRWMPs are similar to Metropolitan's Integrated Water Resources Plan. The plans emphasize achieving high quality water supply to meet the region's water needs through a diversified portfolio of cost-effective water use efficiency actions, local water development, and management of imported supplies in an environmentally responsible manner.

The local projects identified in the IRWMP will contribute to meeting local resources development targets identified in Metropolitan's IRP to ensure regional water supply reliability. Newly identified projects will also be incorporated into Metropolitan's IRP Update scheduled for 2009. In addition, some projects are eligible for participation in Metropolitan's incentive programs for water conservation and local resources development.

The Community Partnering Program sponsors watershed education, conservation and other programs that support Metropolitan's mission.



## Bay-Delta Watershed

The Bay-Delta watershed is an important source of water supply delivered to Metropolitan through the State Water Project. Due to the large size and diversity of the watershed, many activities affect or have the potential to affect Bay-Delta water quality. In 2007, Metropolitan continued to work with agencies and stakeholders throughout the Bay-Delta watershed to develop policies and implement programs that help protect source water quality for Bay-Delta water supplies. Metropolitan continued to support DWR's Municipal Water Quality Investigations Program, which implements water quality monitoring and special studies in the Bay-Delta and its tributaries to develop a better understanding of the sources and effects of water quality constituents of concern. Through its involvement in the California Urban Water Agencies, Metropolitan also participated in studies addressing drinking water quality protection and supported ongoing studies of toxic contaminants in the Bay-Delta and their possible role in the pelagic organism decline observed in recent years.

Metropolitan continued to work with the Central Valley Regional Water Quality Control Board, California Department of Public Health, U.S. Environmental Protection Agency Region 9, CALFED Bay-Delta Program, CUWA, and key watershed stakeholders to develop a drinking water policy for surface waters in the Bay-Delta watershed. This program is a multi-year effort

and is expected to be completed in 2009. Once adopted, the drinking water policy will provide a more effective regulatory framework for implementing drinking water quality protection activities in the Bay-Delta watershed. In 2007, key accomplishments included the completion of studies evaluating the loads of drinking water constituents of concern from major sources in the Bay-Delta watershed, the development of a water quality monitoring program to gather additional information on point source discharges in the watershed, and completion of a technical review of existing water quality goals from regulatory programs in other states. Technical studies to support development of the drinking water policy are expected to be completed in 2008.

## Community Partnering Program

Now in its eighth year, the Community Partnering Program co-sponsors water-related, educational community projects and events. In partnership with nonprofit community organizations, public agencies, professional associations and educational institutions, the CPP supports watershed education, conservation and other programs that support Metropolitan's mission.

For a more detailed description of CPP recipients and projects, visit Metropolitan's Web site at [mwdh2o.com](http://mwdh2o.com).



## ETHICS OFFICE



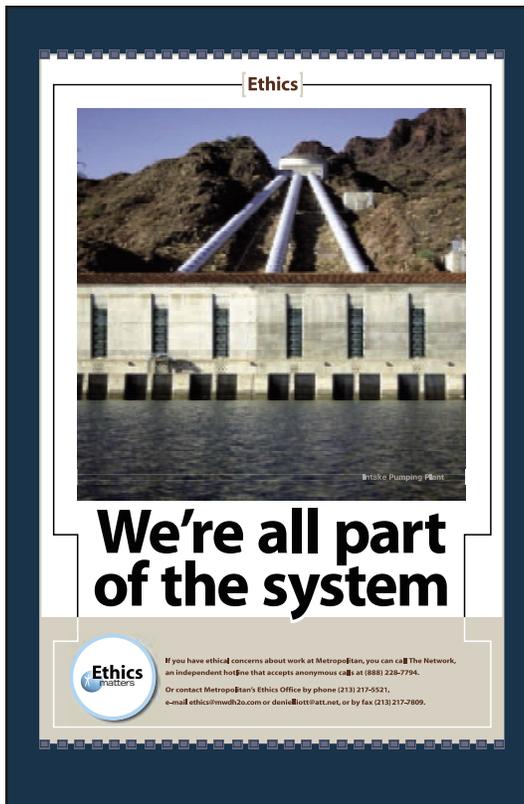
*Metropolitan's Ethics Office has produced three Ethics manuals: One for the Board of Directors; one for staff who handle contracts, grants and sponsorships, and one for Metropolitan employees.*

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**I**n 1995, Metropolitan management identified six core values to assist directors, officers and employees in fulfilling the agency's mission in an ethical manner. The six core values are integrity, stewardship, diversity, leadership, open communication and teamwork.

Metropolitan's Ethics Office has accomplished the following:

1. Developed a program that supports the mission and vision of Metropolitan by enforcing ethics-related laws, rules and policies; educating directors, officers and employees; and enhancing the ethical culture of Metropolitan by initiating and participating in agency-wide initiatives that reinforce adherence to the core values.
2. Published three ethics manuals: Ethics Matters, the Board of Directors Ethics Guide; Partnering, the Ethics of Contracts, Grants and Sponsored Programs at the Metropolitan Water District; and Circles of Influence, Employee Ethics Manual.
3. Expanded the office to include three full-time staff members in addition to the Ethics Officer.



A poster series helps to connect employees with the resources offered by the Ethics Office.

4. Established an Intake Committee that brings together representatives from the General Manager's Office, General Counsel's Office, General Auditor's Office and Human Resources to review matters that come to the attention of the Ethics Office. Established a separate Intake Committee with Director membership for dealing with Director concerns. Established an Inquiry & Review Committee comprised of Metropolitan department heads and directors to provide input regarding concerns that reach the level of formal investigation. Created an Ethics Outreach Committee to encourage participation from employees in the creation of ethics-related programs and materials.
5. Developed education program for employees that includes new employee orientation as well as seminars and modules suitable for all levels of the workforce.

6. Developed an education program for board of directors and officers that meets the training requirements of AB 1234 and that encourages participants to think beyond the level of compliance.
7. Created visibility for the ethics program including a poster series that is changed out monthly, a permanent column in Metropolitan's employee newsletter People Interactive, and inclusion of the core values in the employee recognition program.

Results of these initiatives have shown a steady increase in concerns and queries that come into the Ethics Office. Plans for fiscal year 2007/08 include the development of an on-line ethics education program and the incorporation of corporate social responsibility in Ethics Office initiatives.

# Statement of Values

In our pursuit of “*Excellence*” as responsible stewards, we are committed to the following values:

## Integrity

We will conduct ourselves in an honest, fair, considerate, and trustworthy manner as to demonstrate professionalism and ethical business practices.

## Diversity

We value the differences that are derived from diverse backgrounds, experiences and cultures of the communities we serve, and we commit to actively seek and integrate that diversity into all levels of our workforce to ensure that our activities are based on creative and responsive viewpoints.

## Stewardship

We will be responsible for our actions and are accountable to the public and each other for providing service and value by demonstrating stewardship of:

- The public’s health and safety
- The public’s funds
- Our natural environment
- Our workforce resources
- Our region’s water resources

## Leadership

We value leaders and leadership skills. We encourage employees to be role models who inspire and motivate others. To foster an environment that develops skilled and satisfied leaders we need to:

- Be positive role models
- Walk the talk
- Encourage and reward leadership
- Support innovation/remove barriers

## Open Communication

We will communicate in an open, timely, candid and shared manner, recognizing the value of diverse points of view. We will strive for continual improvement of all communication processes to inform, empower, build trust, create shared experiences and enable personal growth.

## Teamwork

We value teamwork as a core philosophy in all our activities. Teamwork requires:

- Mutual respect and trust
- Participation of all individuals
- Sharing knowledge and information
- Support for one another

We will be successful as a **Team** when we are successful as individuals and we will be successful as individuals when we **Succeed as a Team**.



*We will continue to pursue excellence by self-assessment and continuous improvement.*



## EXCERPTS FROM PUBLIC HEARING COMMENTS



*Metropolitan encourages and welcomes public comment on all water resource planning documents.*

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**T**he following excerpts are from the public hearing held on December 10, 2007, to review Metropolitan's progress toward increasing its emphasis on cost-effective conservation, water recycling, and groundwater recharge.

### ***Joe Geever, South Bay Surfrider Foundation***

We think the benefit of partnering with water agencies is that when we look out at constituencies, there are some people in the public that look at environmental organizations like ours and say that "they're a bunch of chicken little and the sky is falling" and they don't trust our message, and then there are others in the public (no offense) that look at public agencies and say they're bureaucratic, they waste money and they take forever to get the job done. But when the two of us speak in one voice, we think it has a much more powerful...and resonates with the public much better than each of us individually. We have focused on what these programs can do to reduce pollution reaching our urban creeks and ocean. We think that conversations between the water agencies and their customer cities and rate payers for that matter, would go a long way towards...this is not just saving 2 or 3 dollars on your water bill, this is saving hundreds of millions of dollars in Clean Water Act compliance with the intractable problem of reducing non-point source pollution. So I guess a simple, and I won't put numbers on this, but a simple request of Met is to increase the rebates for conservation programs so that we can bring our volunteers into these programs to work with the agencies. We've already started working with San Diego Water Authority, MWDOC, and with West Basin and we would love to work with every agency in Met's service area.

### ***Marcus Lee, Los Angeles Unified School District***

As one of the biggest water consumers in L.A., LAUSD has been one of the beneficiaries of the Metropolitan Water District of Southern California's conservation program. LAUSD was recognized as one of the Water Conservation Champion of 2005 in recognition of "Exemplary Service and Meritorious Achievement in Water Conservation." In this year, LAUSD has committed to participate in MWD's new public partnership program. The LAUSD hopes to reduce water conservation by at least five percent which is equivalent to 126,000 CCF [centum cubic feet] annually for the next five years through various conservation measures and clean retrofit of indoor fixtures, smart irrigation controllers and others.

***Marilyn Lyon, South Bay Energy Savings Center/South Bay Cities Council of Governments***

We are a program from South Bay Cities Council of Governments (SBCCOG); that's 15 cities in the southwestern sector of Los Angeles County. We have a local government partnership program with the Public Utilities Commission that put us into partnership with our 15 cities with Edison and the Gas Company, but we soon realized we were missing a very important component and that was water conservation. So we went out seeking help with our water agencies, West Basin and Torrance Water Department, and were able to come up with some programs where when we go out and do our over 100 events and workshops a year, that we are bringing the water conservation message, not only to residence but businesses and public agencies. We are absolutely thrilled that you have come up with your new program where {you're} offering up-front money to the public sector. In fact we have already started promoting a January 15 workshop to our 15 cities in the South Bay to take advantage of these programs. We found them highly effective. One program that we've initiated with our cities is the Water Broom Initiative, to push out, so to speak, 800 water brooms to businesses within the South Bay and this will translate to over 40 million gallons of water being saved.

***David Jacot, Southern California Edison***

I'm the Portfolio Manager of New Construction Energy Efficiency Programs as well as Edison's Water Energy Pilot in conjunction with water agencies and the California Public Utilities Commission. I would like to commend The Metropolitan Water District of Southern California for its extensive water conservation efforts. Edison has a comprehensive portfolio of demand side management programs as well and like Metropolitan, views cost-effective demand side programs as favorably competitive with supply side options while potentially having significant environmental advantages. In 2007, Edison was given the opportunity to partner with Metropolitan on the California Public Utilities Water Energy Pilot, which seeks to combine resources from energy utilities and water agencies in the directed effort to achieve larger avoided cost benefits from resource use production than would be achieved by these parties acting in isolation. Metropolitan has been an extremely engaged, committed participant in this partnership and has dedicated significant resources to ensure that the pilot is successful. In addition to the Water Energy Pilot, Metropolitan and Edison continue to work together on a number of traditional resource conservation programs targeting low income customers as well as commercial and institutional customers. These collaborative efforts with Metropolitan has benefited these customers and achieved resource use reductions beyond what either entity could have accomplished on its own.

***Brian Keating, Kimberly Clark***

I'm here speaking for Kimberly Clark Corporation, specifically the Fullerton Mill. And to comment in favor of The Metropolitan Water District's Industrial Process Improvement (IPI) Program, which we are a participant. Kimberly Clark's Fullerton Mill has been in Fullerton, California for 50 years. Obviously when they built that some 50 years ago, it was largely an agricultural industry and water was not as precious as it is today. This program has helped us from the standpoint as when we look at projects to further close out, we're doing two things, we're pushing the edge of technology in many cases, so having to pilot new technology and change our approaches to some untried things; and secondly we have to fund those projects. Although our corporations [have] great interest in sustainability, it has to be done with a value that meets our stockholders' needs and our customers' needs. In this case we looked to a project that would take our water closure rate and reduce our water use by up to 40 percent. What this incentive program helps us do is to justify the capital. This project put in better technology than the lower cost project we could have justified with our own means and a result of that we're getting better payback and probably longer terms. So we appreciate this program. We thank you for it.

***Elsa Lopez, Water Replenishment District of Southern California***

I'm with the Water Replenishment District of Southern California and before going to the Replenishment District I actually was part of MWD's pilot program with Mothers of East L.A. So I know that MWD has been doing a great job with conservation and I believe that you guys are the leaders of the world. I went to South Africa and in having this opportunity through conservation, you were recognized out there for your

leadership. With the Water Replenishment District of Southern California, I'm proud to say, that in the two years that I've been there, they've been investing in the conservation program. Although we are not a member agency, we do partner with the member agencies within our service area. And just alone this year, we have invested \$200,000 towards conservation and we have an additional \$100,000 that will be going to other programs within our service area. So keep up the good work and we'll see what we can do to increase those amounts also.

***Conner Everts, Southern California Watershed Alliance and the Desal Response Group***

I too will commend you but I also would like to say that I worked on this bill with Tom Hayden and he left me to do oversight on this and I continue not to be noticed of this. I'm letting you know if you would include me in the process I would appreciate it so that I can respond. If we really want to re-invest, we have to include the communities that really deliver these programs and are the mechanism to get this work done. I look to you for the opportunity to re-invest in the community-based organizations. We're making the same request of DWP. You may have seen the article in the L.A. Times today calling for more conservation. We're laying out a plan with Green L.A. So I applaud you for what you've done to this point, and I think we all need to look to how we can do more and I look to partnership as we had with Mono Lake in the past to work with communities to make that happen. We also have the Environmental Justice Coalition for Water... and they're willing and able to work with these communities and they've already started that program in Maywood and some others.

***Matt Stone, Municipal Water District of Orange County***

I would like to first commend the staff, I think you've heard some of the various partnership that are going on with public interest groups, environmental groups, energy entities, local communities and most of all as well the member agencies and I think that's one of the stories about the success of this program has been the embracing of opportunity and partnerships over the years and it takes extra work to do that. It's much easier to be insular and ignore all of that, but you're much more effective for being the proactive agency that you are. We want to express our appreciation for that. Another I think strength of the program is that there are several paths for new ideas to come forward. You have the Innovative Conservation Program, you have the Enhanced Conservation Program, both kind of ways of testing new ideas, and you have the program refinements committee where the member agencies and Met staff get together and review what's going on technologically in the field and what can we bring forward and implement under our rebate programs. Three areas to look at I think moving forward... I think that conservation based rate structures whether they be budget based or otherwise, have shown a great potential but also shown that they're very difficult and tricky to implement and therefore there are some barriers or resistance and risk at the local level to implement these structures. I think that Metropolitan may be in the position to offer some kind of assistance or incentive over time and that should be looked at seriously and this is a good time to be looking at that. The second thing, the big challenge now is outdoor landscape. We're kind of moving I think from looking at it as selective widgets, a controller here, a sprinkler head here, a turf program there to perhaps being more systematic about our evaluation and how we interact. And I think one issue to really look at is it's easier to get this thing right the first time than to come back and fix things that aren't right. The challenge is how do you reach the people who design, construct and maintain these irrigation systems so that there's a better track record over time for the things getting in there right the first place. Finally, I think we really have to take stock of our message on the outreach. I think it's an incomplete message. I think that an arid climate message and a constrained pumping in the Delta message are appropriate because it better explains to the public why it's important to conserve water and I would hope that the Board can consider that as they look at the next round of the message early in 2008. Finally, the report itself, legislation did not contemplate reporting on desalination but in the intervening years that has become an integral part of Metropolitan's Integrated Resources Plan and I think it would be appropriate to include information on to what degree Met is relying or planning on future desalination efforts and what is being done to help promote those so that the legislature is aware that this is an important part of the Integrated Plan as well.



## GLOSSARY



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This is a list of common terms and acronyms used in this report.

**Acre-foot:** The amount of water that would cover one acre of land, one foot deep and supplies two average Southern California families for one year.

**Bewaterwise.com:** A Web site sponsored by Metropolitan that has extensive information about how to use water more efficiently. The Web site address is <http://www.bewaterwise.com>.

**BMP (Best Management Practices):** As used in this report, they are the 14 water management practices contained in the California Urban Water Conservation Council Memorandum of Understanding.

**California Friendly<sup>®</sup>:** A campaign that encourages Southern California residents to make their homes California Friendly by using native and drought-tolerant plants, smart irrigation systems and water-wise appliances that meet certain standards. Metropolitan also is working with home builders and the building industry on projects and programs that will spotlight state-of-the-art California Friendly features in current and future developments.

**City Makeover Program:** A competitive grant program providing funding for new native and drought-tolerant theme landscapes in prominent public locations within Metropolitan's service area. It is part of a larger outreach program to foster appreciation of California native and drought-tolerant plants, efficient irrigation and appropriate site design in public, commercial and residential landscapes.

**Community Partnering Program:** Metropolitan's Community Partnering Program provides funding for water-related, educational outreach on regional water resources issues, such as conservation, watershed or water quality, educational material for California Friendly garden projects.

**Conjunctive Use:** The storing of imported water in a local aquifer, in conjunction with groundwater, for later retrieval and use.

**Desalination:** A process that removes salt and other minerals from seawater or brackish.

**Groundwater Recovery:** The extraction and treatment of groundwater making it usable for a variety of applications by removing high levels of chemicals and/or salts.

**HECW (High Efficiency Clothes Washers):** Washing machines that use less water than conventional washers and that are included in Metropolitan's incentive programs.

**HET (High Efficiency Toilet):** Newer generation toilets that on average use about 1.28 gallons per flush, saving about 8,000 gallons per year.

**IRP (Integrated Water Resources Plan):** Metropolitan's plan to ensure reliable water delivery to its member agencies despite population growth, dry spells and droughts. The IRP resources mix includes water storage, conservation, best management practices (BMPs), recycling, desalination, and groundwater recovery, among others.

**LRP (Local Resources Program):** Metropolitan's funding mechanism for local recycling, groundwater recovery, and desalination projects. Projects are selected based on a competitive bidding process.

**Potable / Non-Potable:** Drinkable and non-drinkable water, respectively.

**Proposition 50:** A 2002 water bond authorizing the state of California to sell \$3.4 billion worth of

bonds to support safe drinking water, water security, water efficiency and protection of coastal watersheds and wetlands.

**Proposition 204:** A 1996 water bond authorizing the state of California to sell \$995 million in bonds to address Bay-Delta issues, statewide water supply and conservation, wastewater treatment and flood control and prevention.

**RFP (Request For Proposals):** A formalized process to solicit proposals for consultation or participation in various incentive programs.

**Seawater Barrier:** The injection of fresh water into wells along the coast to protect coastal groundwater basins from seawater intrusion. The injected fresh water acts like a wall, blocking seawater that would otherwise seep into groundwater basins as a result of pumping.

**ULFT (Ultra-Low-Flow Toilet):** ULFTs are designed to use 1.6 gallons per flush.

**WBIC (Weather-Based Irrigation Controllers):** Also called "Smart Controllers," WBICs adapt to current weather conditions, increasing efficiency of irrigation systems.

**Replenishment:** When supply and system conditions are favorable, Metropolitan can deliver interruptible water supplies to its member agencies at reduced rates that are used to replenish local groundwater supplies through percolation and direct injection.

**Watershed:** Geographical portions of the earth's surface from which water drains or runs off to a single place like a river; also called a drainage area.

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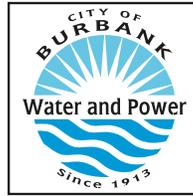
## MEMBER AGENCIES



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 14, 1960



Joined Metropolitan  
November 12, 1954



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
October 16, 1950



Joined Metropolitan  
January 15, 1953



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
November 26, 1951



Joined Metropolitan  
December 1, 1960



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
November 26, 1951



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 17, 1946



Joined Metropolitan  
November 12, 1971



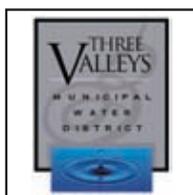
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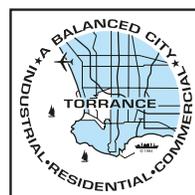
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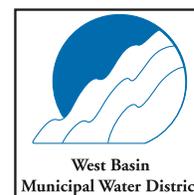
Joined Metropolitan  
November 15, 1950



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
March 27, 1963



Joined Metropolitan  
July 23, 1948



Joined Metropolitan  
November 12, 1954



The Metropolitan Water District of Southern California

[www.mwdh2o.com](http://www.mwdh2o.com)

# The Metropolitan Water District of Southern California



**Annual Progress Report to the California State Legislature  
Achievements in Conservation, Recycling and Groundwater Recharge**

**February 2009**

# THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



*Pictured on the cover:*

*Left to right: Sepulveda Golf Facility in Encino received funding from Metropolitan's Accelerated Public Sector Water Efficiency Partnership Demonstration Program to retrofit the irrigation system to use recycled water; high school students participate in the Solar Cup Program where they learn about energy and water resources management; high-efficiency clothes washers are among the water-saving devices eligible for Metropolitan and member agency rebates; Orange County Water District's Groundwater Replenishment System treats up to 75,000 acre-feet of wastewater for groundwater recharge; and the Chino Basin Desalter recovers degraded groundwater for potable use.*

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The Metropolitan Water District of Southern California was established in 1928 under an act of the state Legislature to import water supplies for the Southland. Metropolitan is a public agency and a regional water wholesaler.

It is governed by a 37-member board of directors representing 26 member public agencies that purchase some or all of their water from Metropolitan and serve 19 million people across six Southern California counties.

The mission of Metropolitan is to provide its 5,200-square-mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Metropolitan draws supplies through the Colorado River Aqueduct, which it owns and operates. Water supplies also come from Northern California via the State Water Project and from local programs and transfer arrangements. An increasing percentage of Southern California’s water supply comes from conservation, water recycling and recovered groundwater, which are further described in this report.



# Executive Summary

## Background

After two years of record-dry weather conditions, Gov. Arnold Schwarzenegger issued a statewide drought proclamation in early June 2008. Following that announcement, the Metropolitan board of directors declared the first-ever Water Supply Alert for its six-county service area on June 10.

Southern California's – and the state's – reduced water supplies are a result of extremely dry conditions, including eight out of nine years of drought along the Colorado River Basin. Water supplies from Northern California also were reduced by nearly 30 percent in 2008 because of court-ordered pumping restrictions in the Sacramento-San Joaquin Delta to protect the Delta smelt.

To compensate for the declining water supply and to meet current demands, Metropolitan and its member agencies are drawing down reserves and taking extraordinary conservation measures to reduce everyday demands. Over the past two years, Metropolitan has reduced its storage by nearly half.

Metropolitan's Water Supply Alert calls for extraordinary conservation on behalf of cities, counties, local public water agencies and retailers to use water more efficiently. Steps to reduce water use include the enforcement of existing water conservation ordinances, establishing new ordinances, tiered rate structures that dissuade excessive water use, and expanding rebate programs that encourage efficiency retrofits with devices such as toilets, washing machines and "smart" sprinkler controller systems.

Metropolitan has invested hundreds of millions of dollars in programs to diversify and strengthen the region's local water resources and lessen the dependence on imported supplies since the last extended drought of the late 1980s/early 1990s. Investments in conservation, recycling, surface and groundwater storage, groundwater recovery, desalination and transfers have allowed the region to endure record-dry years without supply constraints.

## Resource Management Tools

Should conditions remain unchanged or worsen, Metropolitan may implement a water supply allocation plan adopted by its board in February 2008. This regional water-sharing plan manages supply shortages to avoid disproportionate impacts among member agencies. The plan relies on a formula that balances many considerations including the impacts on retail customers, changes in local supplies, investment and development of local resources, and conservation. The water supply allocation plan is the final element of Metropolitan's Water Surplus and Drought Management Plan, originally drafted in 1999.



*Metropolitan has drawn down its water reserves by nearly half over the past two years. Pictured here is Diamond Valley Lake, the region's largest storage reservoir.*

While the allocation and WSDM plans address resource management under shortage conditions, Metropolitan's Integrated Water Resources Plan is a blueprint to secure long-term regional supply reliability by augmenting supplies and lowering demand. It was first adopted in 1996 in response to the extended drought of the late 1980s and early 1990s and is updated every five years. It is currently being revised to respond to the recent supply challenges that include record drought, climate change and environmental restrictions.

The updated report will outline a

strategy for water reliability through 2030. The collaborative process relies on a series of public workshops convened throughout the service area to solicit input from water districts, local governments, the business community, environmental and other stakeholder groups.

## Resource Management Program Achievements

Since 1990, Metropolitan has invested more than \$223 million in conservation incentives, saving 120,000 acre-feet annually. Metropolitan extended incentives to the residential, commercial and industrial sectors to encourage the use and development of water-efficient technologies and business practices. In July 2007, the board authorized enhancements to the conservation program that brought a regional cohesiveness to the program as well as improved administration. The most significant upgrade is "SoCal Water \$mart," a new regional residential incentive program with an expanded list of devices eligible for rebates. The program provides a one-stop shop for residential customers and their building contractors to identify and apply for conservation rebates. Devices eligible for rebates include high-efficiency toilets and clothes washers as well as smart irrigation controllers and rotating sprinkler nozzles.

Other changes in the conservation program include new device incentives for new construction in the landscape and commercial sectors, and administrative improvements to Metropolitan's pay-for-performance conservation programs. The Water Savings Performance Program provides incentives for landscape upgrades and industrial process improvements, and now includes financial incentives up to the full project cost for qualified irrigation system retrofits.

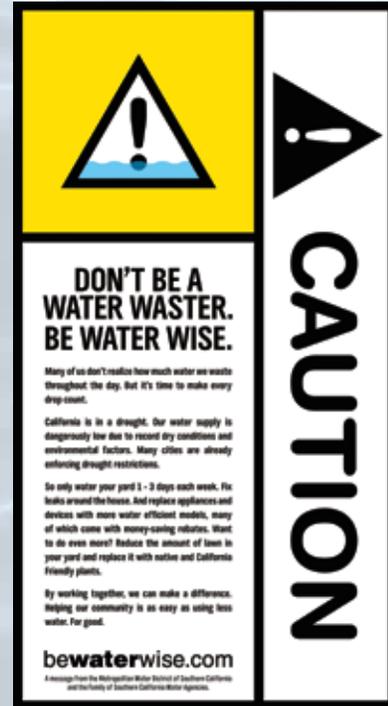
One of the more visible new projects is the Accelerated Public Sector Water Efficiency Partnership Demonstration Program, which was launched in August 2007 to provide funding for public agencies that use more than 50 acre-feet of water annually. This program, funded with \$15 million, reinforces the region's message for conservation by helping public agencies demonstrate a willingness to respond to the call.

The call for conservation was stepped up in fiscal year 2007/08 with the launch of an extensive regional water conservation advertising and education campaign authorized by the board. Metropolitan advanced the conservation message through educational activities, community events and the [bewaterwise.com](http://bewaterwise.com) Web site, which received more than 350,000 visitors, an increase of about 150,000 from the previous fiscal year.

Water recycling and groundwater recovery continue to be increasingly important assets in the region's resource portfolio, with local water agencies leading the development of new projects supported by Metropolitan's Local Resources Program. Three projects began production in fiscal year 2007/08, bringing the total number of operating recycling projects to 50 with a contract yield of nearly 300,000 acre-feet.

Currently, member agencies along the coast are pursuing or considering seawater desalination with an expected production of 142,000 acre-feet. Three have signed contracts with Metropolitan to receive a \$250 per acre-foot incentive.

It has been more than a decade since Southern California faced its last prolonged drought and introduced mandatory water restrictions. Since that time, water managers have been as practical as they have been creative in developing new ways to conserve, reuse and recover water resources. Different types of water management strategies have been put in place including new local projects, conservation incentive programs, storage agreements, transfers and a reservoir to hold a six-month emergency supply for the Southland. Maintaining this forward-thinking approach while confronting daunting real-time challenges has become the water managers' new balancing act.



*Metropolitan turned to advertising and education to extend the call to conservation.*

# Achievements Scorecard

## Metropolitan-Assisted Local Resources

<i>Active Conservation</i> <sup>1</sup>	
FY 2007/08 New Water Saved From Active Conservation Programs	7,400 acre-feet
FY 2007/08 Water Saved From New & Existing Active Conservation Programs <sup>2</sup>	120,000 acre-feet
Cumulative Water Saved From Active Conservation Programs <sup>3</sup>	1,137,000 acre-feet
FY 2007/08 Active Conservation Investment	\$18.1 million
Cumulative Active Conservation Investment	\$223 million
Total FY 2007/08 Conservation Investment <sup>4</sup>	\$24.4 million
<i>Water Recycling</i> <sup>5</sup>	
FY 2007/08 Production	116,000 acre-feet
FY 2007/08 Investment	\$22.6 million
Cumulative Production	1,043,000 acre-feet
Cumulative Investment	\$193.9 million
<i>Groundwater Recovery</i> <sup>5</sup>	
FY 2007/08 Production	47,800 acre-feet
FY 2007/08 Investment	\$9.4 million
Cumulative Production	429,000 acre-feet
Cumulative Investment	\$80.5 million
Metropolitan-Assisted Groundwater Programs	
<i>Conjunctive Use Program</i>	
Metropolitan Cumulative Investment through December 2008	\$54.7 million
Metropolitan Appropriated Funds for Programs	\$63.4 million
Proposition 13 Grant Funds Administered by Metropolitan <sup>6</sup>	\$45.0 million
Conjunctive Use Storage Program Balance	225,000 acre-feet
<i>Cyclic Storage Balance</i> <sup>7</sup>	13,000 acre-feet
<i>Supplemental Storage Balance</i> <sup>7</sup>	20,000 acre-feet
<i>Water Rate Incentives For Groundwater Replenishment</i> <sup>8</sup>	
Cumulative Investment through December 2008	\$363.1 million
Replenishment Certified January through December 2008	0 acre-foot

1. Active conservation is water saved directly as a result of conservation incentives by Metropolitan and other water agencies, and includes device retrofits, process improvements, landscape efficiency improvements and other efficiency measures utilized in commercial, industrial and residential sectors. Additional water is conserved as a result of plumbing codes and other laws governing appliances and other products' efficiency standards.

2. Water savings from devices installed in fiscal year 2007/08 and from devices installed in prior years. It also includes water savings initially achieved through Metropolitan's active programs and then maintained through plumbing codes.

3. Cumulative water savings from active conservation programs since 1991. It also includes water savings initially achieved through Metropolitan's active programs and then maintained through plumbing codes.

4. Total conservation investments include the Conservation Credits program plus education and advertising campaigns to promote conservation.

5. Metropolitan has provided financial incentives to its member agencies to develop new water recycling projects and groundwater recovery projects (that make degraded groundwater potable) through its Local Resources Program; figures reflect deliveries and payments reported through June 2008.

6. Proposition 13 refers to Chapter 9 of the Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act of 2000.

7. Cyclic Storage and Supplemental Storage balances as of December 2008.

8. Water Rate Incentives represent the discount in water rates Metropolitan provides to its member agencies to encourage groundwater storage.



**bewaterwise.com**

THE METROPOLITAN WATER DISTRICT of SOUTHERN CALIFORNIA and THE FAMILY of SOUTHERN CALIFORNIA WATER AGENCIES

# Conservation

Metropolitan and its member agencies have long been leaders in water conservation. Metropolitan encourages water-use efficiency through research and development, financial incentives, programs to influence consumer behavior, education, new plumbing and compliance codes, and retail customer conservation through tiered pricing. Since 1990, Metropolitan has invested more than \$223 million in conservation incentives, saving 120,000 acre-feet annually. Metropolitan's investments in incentive-based programs increased new annual water savings by 7,400 acre-feet in fiscal year 2007/08 as a result of greater public awareness and increased purchases of water conservation devices.

The Integrated Water Resources Plan, Metropolitan's planning blueprint, calls for an annual water conservation goal of 1.1 million acre-feet by 2025. Towards that target, about 300,000 acre-feet will come from incentive-based conservation (also referred to as active conservation) with the balance of approximately 800,000 acre-feet saved through the impacts of water rates and compliance with plumbing codes and other laws.

Metropolitan's incentive-based programs are offered in three areas: residential, commercial and industrial. The programs are complemented by public outreach and education activities, many of them tied to the California Friendly® marketing effort launched in 2006 to make it easier for consumers to identify water-efficient products, organizations and programs.

## Regional Residential Conservation Program

To extend the success of Metropolitan's existing commercial rebate program and respond to member agency requests, Metropolitan developed a similar approach for residential customers in July 2007. The new region-wide residential program, called SoCal Water \$mart, provides a one-stop shop for residential customers, landscape and building contractors in Metropolitan's service area to identify and apply for product rebates. It also provides many administrative benefits in terms of efficiency. The program is administered by the Electric & Gas Industries Association, a non-profit organization selected through a competitive bidding process.

The devices currently included in the incentive program are listed below as well as the savings accrued prior to the consolidated administration of the program under EGIA. Metropolitan expects to achieve 175,000 acre-feet of savings over the service life of the installed water-efficient devices that qualify for rebates.

- **High-efficiency toilets** — As of fiscal year 2007/08, Metropolitan provided rebate incentives for more than 37,000 residential high-efficiency toilets. This number will grow significantly in the future because of the enactment in fall 2007 of Assembly Bill 715, which requires toilet and urinal manufacturers to increase their stock of more efficient models for sale starting in 2010. Manufacturers are required to offer high-efficiency models as a specified percentage of all models offered, starting with 50 percent by January 1, 2010, and incrementally increased to 100 percent by January 1, 2014.

- **High-efficiency clothes washers** — Metropolitan, in partnership with its member agencies, has issued more than 200,000 incentive rebates for consumers to replace standard clothes washers with high-efficiency models. Metropolitan was selected to receive a grant from the California Department of Water Resources through the second round of Proposition 50 Agricultural and Urban Water-Use Efficiency Grants. With this grant, Metropolitan expects to provide rebates for 40,000 high-efficiency clothes washers that have an even higher water efficiency rating than previously required.
- **Smart controllers** — Since 2005, nearly 7,000 weather-based (“smart”) irrigation controllers have been distributed to the public through Metropolitan and member agency partnerships and special events. These devices are expected to save 13,500 gallons each over the estimated 10-year controller life.
- **Rotating nozzles** — These new types of nozzles were added to the list of devices eligible for rebates starting at \$4 per nozzle. The more-precise nozzles eliminate runoff by allowing directed, uniform water distribution on landscape and are estimated to use 20 percent less water than conventional spray heads. More than 15,000 nozzles have been distributed with an estimated device lifetime water savings of 300 acre-feet.
- **Synthetic turf** — Metropolitan began offering an incentive of 30 cents per square foot of synthetic turf installed. To date, incentives have been provided for more than 300,000 square feet with a total lifetime water savings of 420 acre-feet.

## Regional Industrial Conservation Program

### *Water Savings Performance Program*

The Water Savings Performance Program provides incentives for both landscape water use efficiency and industrial process improvements up to 100 percent of the project cost. The program offers retrofit and process improvements, which include the installation of equipment that captures, treats and re-uses water. Incentives also are available for the replacement of existing equipment with more efficient models that reduce water demand.



*Through Metropolitan's rebate program, more than 200,000 standard clothes washers have been replaced with high-efficiency models.*

Irrigation system retrofits for commercial and multi-family residential properties can qualify for financial incentives. Eligible equipment includes a broad spectrum of new, more efficient hardware such as the latest nozzles, spray heads, sensors and controllers. An example of a recent partnership under this program is a five-year agreement to improve landscape irrigation and save about 65 acre-feet per year.

Metropolitan provides financial incentives to industrial customers to improve water-use efficiency. In fiscal year 2007/08, Metropolitan extended agreements with several companies to improve manufacturing processes. Collectively, the agreements will save about 500 acre-feet of water per year and include:

- A leading provider of premium fresh-cut salads, fruits and vegetables to customers across the country will invest in capital improvements to increase water-use efficiency in their processing, cooling and sanitizing operations. Metropolitan will provide approximately \$250,000 to help implement process improvements. The project is expected to save about 260 acre-feet of water annually.
- A commercial laundry facility will make improvements in treating and recycling soiled wash water that will save about 56 acre-feet a year. Metropolitan provides total financial incentives of up to \$54,200.
- A metal-finishing facility will make improvements to reuse water through a recycling system that saves approximately 25 acre-feet per year. Metropolitan provides a financial incentive of up to \$25,250.
- A leading beverage brewing company will invest in capital improvements to increase water efficiency in several areas including beer making, sanitizing and cleaning operations. Metropolitan will provide approximately \$158,000 to help implement process improvements. This project is expected to save about 160 acre-feet of water annually.



*New agreements with industrial water users will save about 500 acre-feet per year, with about half of those savings coming from a local leading producer of fresh-cut produce and fruits.*

## Commercial Conservation Program

Metropolitan's commercial incentive program has provided rebates for more than 162,000 device retrofits throughout Southern California since 2001, resulting in an annual water savings of nearly 10,000 acre-feet per year or more than 135,000 acre-feet over the life of the devices. This program exceeded last fiscal year's record water savings level by about 10 percent. The additional savings was partly due to the addition of the Accelerated Public Sector Water Efficiency Partnership Demonstration Program, authorized by Metropolitan's board in August 2007.

### *Save-Water-Save-A-Buck Program*

Metropolitan's Save-Water-Save-A-Buck Program provides rebates for water-saving plumbing fixtures, landscaping equipment, food-service equipment, cleaning equipment, HVAC (heating, ventilating, air condition) and medical equipment. The program also targets multi-family dwellings for retrofits using high-efficiency washers and toilets, and rotating nozzles for pop-up spray heads.

Fiscal year 2007/08 saw the number of rebates increase to 52,700 devices from 43,300 devices in 2006/07, which is a 22 percent increase. The amount of money Metropolitan invested in the fiscal year 2007/08 Save-A-Buck program grew to nearly \$8.9 million, a 37 percent increase from the 2006/07 program total of \$6.5 million.

### *New Water/Energy Partnerships*

Metropolitan is collaborating with regional energy utilities such as Southern California Edison and Sempra Energy to co-market water and energy-saving devices in Metropolitan's service area. Potential collaborative efforts present a significant opportunity for Metropolitan to leverage the utilities' ties to commercial and industrial water users and existing rebate marketing campaigns designed to achieve greater water savings within Metropolitan's service area. Initial efforts focused on high-efficiency clothes washers and food service devices such as pre-rinse dishwashing spray heads and connectionless food steamers. Metropolitan is expanding the collaboration to include additional devices such as air-cooled ice machines, cooling tower pH controllers, and weather-based irrigation controllers, as well as improvements to industrial processes that would provide greater incentives through Metropolitan's Water Savings Performance Program.



*Financial incentives up to the full cost of equipment are offered for qualified irrigation system retrofits for commercial, industrial and other large properties.*



*The use of recycled water in public spaces is becoming more financially prudent and widespread as agencies take advantage of incentives offered by Metropolitan and its member agencies.*

### ***Accelerated Public Sector Water Efficiency Partnership Demonstration Program***

In August 2007, Metropolitan created a program to provide up-front funding to increase water-use efficiency in public buildings and landscapes within its service area. Participants include various special districts, school districts, state colleges and universities, municipalities, counties and other government agencies. The program was offered on a one-time basis, with total funding of \$15 million. The rationale behind the new program's creation was to reinforce the region's message to conserve water by demonstrating that public agencies also are responding to the call. Beyond the benefits of bolstering public perception and commitment, the public sector program offers direct water savings estimated to be about 40,000 acre-feet.

Cities, counties, state and federal facilities may participate in four ways:

- Conservation audits for large public agency water users
- Enhanced device incentive program
- Pay-for-performance water-use reduction incentives
- Recycled water hook-up

Since the program's approval, Metropolitan has received more than 450 requests for participation from public agencies. Metropolitan allocated \$1.5 million to conduct water audits in fiscal year 2007/08. In addition, Metropolitan issued nearly \$12 million in rebates for water-efficient devices, nearing the program's \$15 million cap.

## Conservation Development

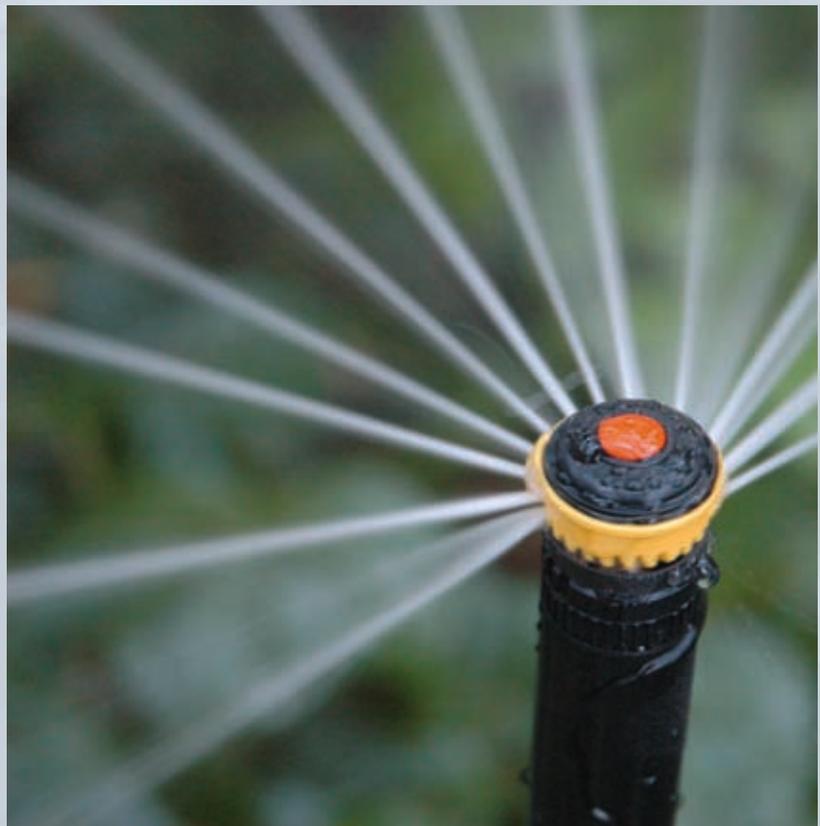
### *Innovative Conservation Program*

The Innovative Conservation Program encourages research and development of new and creative ways to conserve water. Individuals and organizations can participate. ICP results are reviewed with member agencies and considered for Metropolitan's rebates during its annual review process. Several devices identified through the last program cycle in 2004 are now included in Metropolitan's water conservation rebate program.

The 2006/07 solicitation of projects yielded 39 proposals, totaling \$6 million in funding requests that were received from public agencies, member and retail agencies, community-based organizations, private companies, entrepreneurs, universities, laboratories, research institutes and equipment manufacturers. Metropolitan's competitive selection process resulted in 15 research proposals being selected for funding. Proposals include new faucet valve technology to reduce leaks; soil amendment to reduce water and fertilizer use; industrial reuse of boiler exhaust gases; and small-scale water reuse systems for toilet flushing. Grants totaling \$610,000 will be provided to support the evaluation of new conservation ideas.

### *Enhanced Conservation Program*

The Enhanced Conservation Program provides funding directly to Metropolitan's member agencies to encourage new and creative approaches to implement urban water conservation. This year, additional proposals were selected through a competitive process, with nine projects chosen for approximately \$2 million in funding. The projects were primarily in the landscape sector where there are significant opportunities to achieve increased water savings. A majority of proposals involve retrofitting existing landscape irrigation systems to more efficient devices and approaches. Selected projects are estimated to generate water savings of approximately 12,000 acre-feet.



*Financial incentives from Metropolitan and its member agencies help upgrade commercial, multi-family, and homeowner association landscapes (and single-family residences one acre or larger) with more efficient irrigation equipment.*

## Communications and Outreach

Metropolitan developed and implemented an enhanced education and outreach campaign to promote water conservation during fiscal year 2007/08. Twelve months of advertising, media coverage and educational activities significantly increased consumer awareness about drought conditions and the call for conservation.

### *Advertising*

At the board's direction, Metropolitan launched an enhanced and accelerated regional water conservation campaign during fiscal year 2007/08 with outreach in print, radio, online and television spots.

### *Bewaterwise.com*

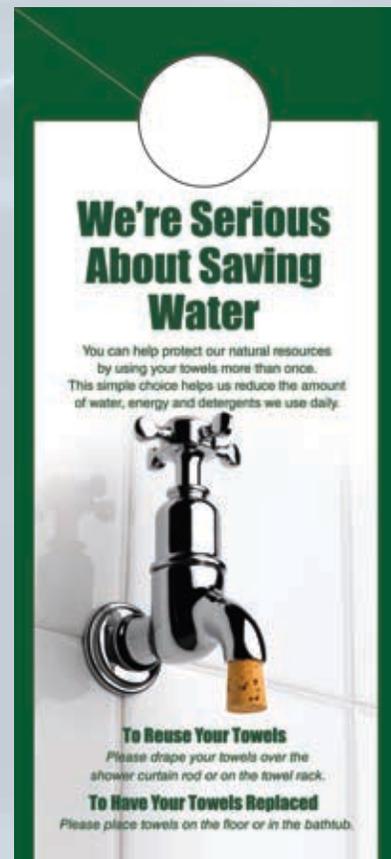
This Web site is a key component to Metropolitan's water conservation efforts, containing information on rebate programs for residents and businesses and a wealth of gardening and other tips to help save water. In fiscal year 2007/08, bewaterwise.com received more than 350,000 individual visitors, resulting in a total of 2.2 million page views. Twenty percent of visitors returned to the site for multiple visits. In fiscal year 2006/07, there were about 200,000 individual visitors.

### *Other Communications*

A total of 1.8 million water conservation brochures, including "Tips for Water Wise Living" and "Choosing Smart Sprinkler Controllers," were distributed at workshops, meetings, community and business events, through mailings and by Metropolitan's member agencies during fiscal year 2007/08.

### *Community Events*

To continue to promote its water conservation programs, Metropolitan organized and staffed educational booths at numerous community events throughout its service territory. These include the Los Angeles County Fair, the Los Angeles County Employees Environmental Fair, the California Construction Expo, the Building Industry Show, the Orange County Children's Water Festival, Caltrans Earth Day, the Colorado River Water Users Association and a Water Conservation Festival at Diamond Valley Lake.



*A year-long advertising campaign and other outreach activities kept the conservation message in the news and on the minds of consumers.*

### ***Education Programs***

During 2008, Metropolitan and its member agencies reinforced their conservation message through the distribution of educational materials, outreach activities and events for nearly 85,000 K-12 students and more than 800 new program teachers throughout the service area. Key opportunities included: the sixth annual Solar Cup® boat race with a record 41 high school teams; the Southern California World Water Forum College Grant Program's selection of 18 community college and university teams for conservation project grants; the 15th year of Metropolitan's Diamond Valley Lake Education Program; and the Student Water Conservation Art Program and the 2008 "Water is Life" calendar.



*Students from the Infrastructure Academy discussing water and environmental issues.*

### ***California Friendly® Landscape Irrigation Efficiency Training***

Metropolitan's California Friendly Landscape Training program provided classroom and online water-wise landscaping classes to about 2,300 professional landscapers and 4,600 residents in fiscal year 2007/08. More than 47,000 students have participated since the program's inception in 1994. Other highlights of the year were the conversion of all classes to online versions and the translations of the classroom residential course into Spanish. The classroom and online trainings for landscape professionals are in English and Spanish.

### ***Community Partnering Program***

The Community Partnering Program continues to support water-related and educational community projects, programs and events. CPP funding supports Metropolitan's overall mission and results in expanding partnerships and collaboration with nonprofit community organizations, public agencies, professional associations and educational institutions. These co-sponsorships emphasize water conservation, watershed education, and other programs that support Metropolitan's California Friendly landscape campaign and overall water conservation efforts.



# Water Recycling, Groundwater Recovery & Storage

Water recycling and groundwater recovery are increasingly important assets in the region's diverse local resource portfolio and help bring greater water supply reliability to Southern California. Local water agencies have largely led the development of water recycling and groundwater recovery projects with newer projects incentivized by Metropolitan's Local Resources Program. Many programs have been in place for several years, providing a steady source of local water resources to offset the region's dependence on imported water.

## Local Resources Program

Metropolitan's Local Resources Program is a performance-based incentive program designed to expand water recycling and the recovery of degraded groundwater. The LRP has a target of 174,000 acre-feet per year from new recycled and recovered groundwater projects. Proposed projects identified for development help achieve regional water supply reliability. In fiscal year 2007/08, about 114,000 acre-feet of recycled water was developed for non-potable uses and about 48,000 acre-feet of groundwater was recovered for municipal use.

## Fiscal Year 2007/08 Local Resources Program Highlights

Walnut Valley Water District, a retail agency of Three Valleys Municipal Water District, recently commenced operation of their new recycled water system, delivering about 2,600 acre-feet per year of recycled water for landscape irrigation and industrial purposes.



*Orange County Water District's Groundwater Replenishment System treats up to 75,000 acre-feet of wastewater for groundwater recharge.*

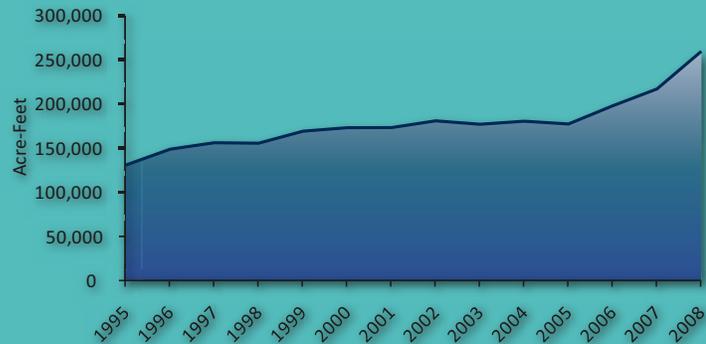
Upper San Gabriel Valley Municipal Water District's Direct Reuse Project Phase II A provides about 120 acre-feet of recycled water for landscape irrigation and to a school vehicle washing facility at South El Monte High School.

South Coast Water District's Groundwater Recovery Facility began operation in November 2007 treating contaminated and brackish groundwater to potable standards. The project is expected to produce about 800 acre-feet per year.

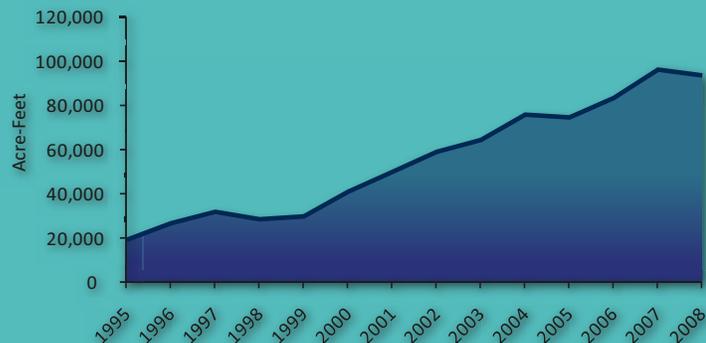
### ***Seawater Desalination***

Metropolitan set a 2025 IRP target for seawater desalination at 150,000 acre-feet. As with recycled water and groundwater recovery supplies, Metropolitan will provide incentives of up to \$250 per acre-foot for locally produced seawater desalination that reduces the need for imported supplies. There are three signed and two pending contracts with member agencies which are anticipated to produce 142,000 acre-feet.

#### **Recycled Water Production**



#### **Recovered Groundwater Production**



## Groundwater Management

### *Conjunctive Use Program*

Metropolitan's dry-year conjunctive use programs involve storing surplus imported supplies within the service area to maintain reliability during dry, drought and emergency conditions. Metropolitan has executed 10 agreements with member and retail agencies for groundwater storage. This provides Metropolitan with about 422,000 acre-feet of additional storage, with a contractual yield of more than 115,000 acre-feet per year. To date, nearly \$45 million of state Proposition 13 funds and \$54.7 million of Metropolitan's capital funds have been allocated to these programs. In response to dry conditions and cutbacks of State Water Project deliveries to protect Delta fisheries, Metropolitan initiated use of these storage accounts in June 2007 to meet demands for imported water. Metropolitan has requested agreement partners to use more than 70,000 acre-feet from storage in place of deliveries through mid-2009. As of October 2008, the current balance is 225,000 acre-feet, reflecting the utilization of 15,000 acre-feet of storage since June 2007.

In addition to the conjunctive use program, Metropolitan has cyclic storage agreements in two major groundwater basins in its service area, allowing for up to 240,000 acre-feet of imported water storage. These agreements provide for pre-delivery of surplus replenishment water, allowing for storage of surplus on short notice. The basins purchase the replenishment water over time as the replenishment is needed to offset groundwater pumping. Last year, Metropolitan had 63,000 acre-feet in storage in these accounts. Due to drought and imported supply restrictions to protect Delta fisheries, 50,000 acre-feet from these accounts have been used to support continued groundwater production.

During the 2005/06 water year when California received significant precipitation, Metropolitan offered the Supplemental Storage Program to encourage the storage of surplus water. Metropolitan originally had about 36,000 acre-feet in storage through agreements with the Los Angeles Department of Water and Power and Municipal Water District of Orange County. The agreement with MWDOP for 16,000 acre-feet has since been called and used to support continued groundwater production to meet municipal needs for water. The 20,000 acre-foot agreement with Los Angeles DWP still remains untapped.

In 2007, Metropolitan completed the Groundwater Assessment Study Report in conjunction with its member agencies and groundwater basin managers throughout the service area. The report provides a technical basis for policy review regarding enhancement of groundwater storage and conjunctive use of surface and groundwater supplies. In 2008, Metropolitan initiated a series of groundwater workshops with its member agencies and groundwater basin managers to review needs and develop policy recommendations for continued reliability of groundwater production and for enhancement of storage and conjunctive use.

<b>The Metropolitan Water District of Southern California</b>		
<b>Conjunctive Use Program</b>		
	<i>Total Storage Capacity (acre-feet)</i>	<i>Dry-Year Yield (acre-feet per year)</i>
<i>Ventura County</i>		
North Las Posas Phase 1 & 2*	210,000	47,000
<i>Los Angeles County</i>		
Claremont	3,000	1,000
Compton	2,295	765
Foothill	9,000	3,000
Live Oak	3,000	1,000
Long Beach Phase 1	13,000	4,333
Long Beach – Lakewood	3,600	1,200
<i>Orange County</i>		
Orange County	66,000	22,000
<i>San Bernardino County</i>		
Chino Basin	100,000	33,000
<i>Riverside County</i>		
Elsinore Basin	12,000	4,000
<b>Total</b>	<b>421,895</b>	<b>117,298</b>

\*North Las Posas Phase 3 will increase dry-year yield of the program to 70,000 acre-feet per year.



# Watershed Initiatives

Metropolitan is active on planning boards and organizations formed to improve watershed management and restoration. Metropolitan works with key stakeholders in the Sacramento-San Joaquin Delta watershed, and participates in the Greater Los Angeles County Integrated Regional Water Management Plan and the Los Angeles and San Gabriel Rivers Watershed Council.

## Los Angeles and San Gabriel Rivers Watershed Council Water Augmentation Study

Metropolitan has been a participant in the Water Augmentation Study, a research study on stormwater runoff measurement, since the study's inception in 2000. The Los Angeles and San Gabriel Rivers Watershed Council directs this 10-year study and demonstration project, which investigates the benefits, costs, and risks of capturing stormwater to augment water supply through infiltration. Seven years of research have resulted in stormwater best management practices being adopted at six urban sites featuring different land uses (parks, school, residential, and industrial) with three to six years of groundwater monitoring at each site. The study demonstrated that stormwater infiltration would not adversely impact groundwater quality when proper best management practices are implemented on site. The research effort also generated a computer model for users to assess infiltration potential (quantity of stormwater captured) based on physical characteristic of an area, land use, soil type and additional runoff capture; a list of best management practices and suitability based on land use and other physical constraints; a report on the valuation of stormwater infiltration as a local supply source; and specific criteria for selection of applicable neighborhoods for retrofit.

The study has now progressed to the demonstration phase of retrofitting Elmer Street in the Los Angeles neighborhood of Sun Valley to capture urban runoff and provide groundwater recharge, flood management and water quality benefits. The retrofitted neighborhood includes 15 residential property participants. Components of the retrofit include rain gardens, California Friendly plants, underground runoff capture devices and a meandering pathway in lieu of a concrete sidewalk. Construction is expected to be completed by June 2009. With the demonstration project in place, the final steps of the study will include monitoring results and a regional strategy report for implementation.

## Integrated Regional Water Management Planning

The IRWMPs address a broad range of issues including growing water demands, water supply reliability, water quality, stormwater management, open space and habitat, and financing of projects. Local agencies can implement projects identified through adopted IRWMPs by utilizing grant funds from the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Proposition 50) and the Safe Drinking Water, Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84). The goals of the various IRWMPs are similar to Metropolitan's Integrated Water Resources Plan and emphasize achieving high-quality water supply to meet the region's water needs. This is done through a diversified portfolio of cost-effective water-use efficiency actions, local water development, and management of imported supplies in an environmentally responsible manner.

Metropolitan has been monitoring and providing technical assistance as needed to its member agencies that serve on various Regional Water Management Groups within the service area. Metropolitan has been participating as the surface water management area representative on the Greater Los Angeles County region leadership committee. Metropolitan is also actively participating in the Santa Ana River region's Integrated Regional Water Management "One Water, One Watershed" planning effort.

## Sacramento-San Joaquin Delta Watershed

The Sacramento-San Joaquin Delta watershed is an important source of water supply delivered to Metropolitan through the State Water Project. Due to the large size of the watershed, the diversity of land uses and the projected population growth, many watershed activities affect or have the potential to affect Delta water quality. In 2008, Metropolitan continued to work with agencies and stakeholders throughout the Bay-Delta watershed to develop policies and implement programs that protect Delta water quality for drinking water uses and for aquatic wildlife.

Metropolitan continued to support the state Department of Water Resources' Municipal Water Quality Investigations Program, which implements water quality monitoring and special studies in the Delta and its tributaries to develop a better understanding of the sources and effects of drinking water quality constituents of concern. In 2008, this DWR program completed important studies assessing the water quality effects of a rapidly urbanizing watershed in the Sacramento River basin and evaluating the effects of agricultural management practices on the water quality of discharges from Delta islands.

Through its involvement in California Urban Water Agencies, Metropolitan also participated in stakeholder processes addressing drinking water quality protection, and supported ongoing studies of toxic contaminants in the Delta and their possible role in the Delta fishery decline observed in recent years. Metropolitan continued to work with the Central Valley Regional Water Quality Control Board; California Department of Public Health; U.S. Environmental Protection Agency Region 9; CALFED Bay-Delta Program; CUWA; and key wastewater, urban runoff and agricultural stakeholders to develop a drinking water policy for surface waters in the Delta watershed. This program is a multi-year effort and is expected to be complete in 2010. Once adopted, the drinking water policy will provide a more effective regulatory framework for implementing drinking water quality protection activities in the Delta watershed.



# Ethics Office

The Ethics Office seeks to enhance the ethical culture of Metropolitan by encouraging directors, officers and employees to see themselves as people with the ability to affect Metropolitan's ethics.

In addition, the Ethics Office enforces ethics-related rules, regulations and laws and provides online and face-to-face education programs and training designed to promote a values-based workplace.

In fiscal year 2007/08, Metropolitan's Ethics Office accomplished the following:

- Responded to 58 questions and expressions of concern from stakeholders, with an average turnaround time of 24 hours for questions involving research and review, and five days for concerns;
- Implemented a stakeholder satisfaction survey (directors and employees), conducted a review of best practices and benchmarks that include both corporate and public agency ethics offices to use for comparative analysis of our Ethics Office with industry standards;
- Supported board initiatives by recognizing Metropolitan's work in institutional ethics (sustainability, stewardship, and corporate social responsibility), and creating a Web page on institutional ethics as a bridge between the Ethics Office and the larger Metropolitan Web site;
- Developed a user-friendly new procedure for employees to acknowledge receipt of Metropolitan's Employee Ethics Policy;
- Developed an online training module template and delivered the first module on gifts and discounts;
- Provided training sessions at all major Metropolitan facilities, and also provided orientations to all new hires; and
- Held two seminars for board directors and officers to meet the training requirements of AB 1234.

## The Metropolitan Water District of Southern California Statement of Values

*In our pursuit of "Excellence" as responsible stewards,  
we are committed to the following values:*

<b>Integrity</b>	<b>Diversity</b>
<p>We will conduct ourselves in an honest, fair, considerate, and trustworthy manner as to demonstrate professionalism and ethical business practices.</p>	<p>We value the differences that are derived from diverse backgrounds, experiences and cultures of the communities we serve, and we commit to actively seek and integrate that diversity into all levels of our workforce to ensure that our activities are based on creative and responsive viewpoints.</p>
<b>Stewardship</b>	<b>Leadership</b>
<p>We will be responsible for our actions and are accountable to the public and each other for providing service and value by demonstrating stewardship of:</p> <ul style="list-style-type: none"> <li>• The public's health and safety</li> <li>• The public's funds</li> <li>• Our natural environment</li> <li>• Our workforce resources</li> <li>• Our region's water resources</li> </ul>	<p>We value leaders and leadership skills. We encourage employees to be role models who inspire and motivate others. To foster an environment that develops skilled and satisfied leaders we need to:</p> <ul style="list-style-type: none"> <li>• Be positive role models</li> <li>• Walk the talk</li> <li>• Encourage and reward leadership</li> <li>• Support innovation/remove barriers</li> </ul>
<b>Open Communication</b>	<b>Teamwork</b>
<p>We will communicate in an open, timely, candid and shared manner, recognizing the value of diverse points of view. We will strive for continual improvement of all communication processes to inform, empower, build trust, create shared experiences and enable personal growth.</p>	<p>We value teamwork as a core philosophy in all our activities. Teamwork requires:</p> <ul style="list-style-type: none"> <li>• Mutual respect and trust</li> <li>• Participation of all individuals</li> <li>• Sharing knowledge and information</li> <li>• Support for one another</li> </ul> <p>We will be successful as a Team when we are successful as individuals and we will be successful as individuals when we Succeed as a Team.</p>

*We will continue to pursue excellence by self-assessment and continuous improvement.*



# Excerpts From Public Hearing Comments

## ***Michael Wolpoff- superintendent, SeaCliff Country Club, Huntington Beach***

I am involved in the “Save Water Save a Buck,” program at SeaCliff Country Club. This April we swapped out more than 1,400 sets of irrigation nozzles for our irrigation system. I just wanted to let everybody know that it was a tremendous success for us. Immediately we saw an ability to reduce our water usage and water run-time and our central irrigation computer by up to 20 percent and from there we had some areas where we had gone as high as 30-50 percent in terms of savings. It has been difficult to compare to previous years because we had to take into account environmental factors as well, but there has definitely been a good savings on our end. We certainly appreciate this program to allow us [to] do this, because without it we most likely would not have been able to... In the golf course industry water is the utmost importance; it is probably the hottest topic in my industry right now in terms of how to stay on top of current events, how to make sure we are planning for our futures, as well as our environmental futures. The opportunity to take part [in] these programs such as “Save Water Save a Buck” really helps us as well as everything else around us. So, I want to thank you all for that opportunity.

## ***Nancy Steele- executive director, Los Angeles and San Gabriel Rivers Watershed Council***

Good afternoon and thank you very much for inviting me here to talk to you. I am the Executive Director of the Los Angeles and San Gabriel Rivers Watershed Council and I do want to commend staff for your work and also in particular for your close association since our founding with the Watershed Council. Metropolitan, staff, and directors have actually served on our board and have assisted us in many ways providing office space and additional staff time. Our current Met representative is Stephen Arakawa, Water Resource Management Group Manager, with Grace Chan as his alternate. In the program brochure that we are talking about today, you have some information about the L.A. Basin Water Augmentation Study. So, I wanted to augment that information just a little bit here. And I want to emphasize the work that the Watershed Council does. And this study in particular has direct benefits for water conservation and groundwater augmentation, as the title would suggest. The first two phases of this study have included implementation of infiltration BMPs in six sites throughout the county and monitoring of those sites over six years. We recently reached a major milestone where the results

of the study were announced that there was no negative impact of infiltrating stormwater to the groundwater. So, the group has moved forward on implementing a demonstration project. The project site is the 7700 block of Elmer Avenue in Sun Valley. It's in a flood-prone and open-space deficient part of the city. The project site consists of the 24-house neighborhood on about five acres that was developed in the 1940s and '50s. Like most of Sun Valley, it does not have a storm drain system. In addition to the runoff from the neighborhood itself, this one street receives runoff from 40 acres of land. It was part of the Tujunga Wash long ago. The street flooding occurs even during relatively small storms. So, this was a neighborhood hurting on a number of levels. And the challenge was to design a system of BMPs to meet the project's objectives, and implement the design with existing utilities, roadways and other infrastructures... This demonstration project is unique, and it is going beyond the public right-of-way to include features on private property that will feed into the larger project components within the public right-of-ways. Public outreach was a major project emphasis, and will include education on water conservation, and for these people how to manage the rain gardens that they are getting as part of the project. And we feel the design components will be replicable. Not just in this particular region, but also throughout Southern California and even throughout California. The city of Los Angeles DWP is one of our partners. DWP began preparatory work in November with construction scheduled to be completed in June 2009. We should be starting construction soon after the holidays on the rest of the project. The outcomes of the projects are far-reaching and will directly benefit Met member agencies. And we hope that Metropolitan will continue participating in projects of this kind, not only in partnership with the Watershed Council, but with many other agencies and organizations throughout your service area. Thank you.

***Rick Hallock- site energy focal, Boeing facility in El Segundo (written comments submitted)***

Good afternoon, my name is Rick Hallock. I am the Site Energy Focal at the Boeing facility in El Segundo, servicing the Satellite Development Center. For those of you not familiar with the SDC, the facility was formerly owned and operated by Hughes Aircraft Company - then known as Hughes Space and Communications. We have 32 buildings on our El Segundo campus, including a 1 million square foot environmentally-controlled Integration & Test Complex for our flight hardware that houses in excess of 6,000 workers - so, we are a very large utilities user. For the past two decades, we in El Segundo have focused conservation efforts on all three utilities - water, natural gas, and electricity. I would like to commend The Metropolitan Water District of Southern California for its expansive water conservation efforts and support to industry - through exposure, incentives, and publicly accessible Web-based conservation content. I have used your bewaterwise.com content... for on-site Earth Day & Rideshare Fair events and numerous internal communications. We maintain Boeing engineering and construction staff on site to support the projects, resulting in conservation of resources, but what I struggle with is bolstering employee awareness - and what I have discovered on your Web site are definitive tips for conservation, tips that (when followed) can lead to conservation and cost reduction in the homes of our employees - and I share that with them in hopes that we reap the benefit of transferring that "at home" behavior to the workplace.

— continued next page

I also appreciate the collaborative partnership we have established with the West Basin Municipal Water District team of conservation specialists. With their assistance, we completed the retrofit of fixtures & valves in two restrooms in one of our 32 buildings - that success has spurred a project to retrofit all 183 restrooms on site. Boeing has benefited from your "Save Water, Save a Buck" rebate program in 2008 - we're doing the right things... and reaping monetary rewards for doing so.

So, I applaud you for your extensive conservation program purview - conservation success is two-fold - first there is the physical [work] completed to alter processes/methods resulting in elimination/reduced usage, and, even more importantly, there is awareness, for doing the right thing - the behavioral changes required to result in similar reduced resource usage. I thank you for continuing to remind us what those "right things" are.

***Kevin Tong- senior landscape architect and water manager,  
Caltrans District 12 - Maintenance (written statement submitted)***

On behalf of the State of California Department of Transportation (Caltrans) we applaud the Metropolitan Water District of Southern California (MWDSC) efforts for water conservation (namely the Public Sector Incentive Programs) and respectfully request MWDSC to continue these important programs to its fullest extent. We have already submitted to MWDSC for ET-based central computer irrigation controllers, completed water audit reports and participated in the California Friendly Landscape Training. Unfortunately, our controller rebates requests were wait-listed due to exhaustion of the program funds. Caltrans (District 12 - Orange County) alone irrigates over 3,000 landscaped acres. Because the public and local agencies consistently demand more and higher levels of freeway landscaping, we will be severely challenged to maintain those especially during periods of drought and water supply reductions. Caltrans supports water conservation and the use of recycled water. With ET-based central computer irrigation controllers, Caltrans (District 12 - Orange County) projects a savings of over 3.2 trillion gallons over the next decade. The remote operation of the controllers will also help minimize worker exposure to traffic, especially during night-time operations. Please continue the Public Sector Incentive Programs, as well as expand the Long Beach Water Reclamation Plant's distribution of recycled water throughout Southern California.

***Kirsten James- water quality director, and W. Susie Santilena- water quality scientist,  
Heal the Bay (written statement submitted)***

Heal the Bay is a non-profit environmental organization with over 13,000 members dedicated to making Southern California coastal waters and watersheds, including Santa Monica Bay, safe, healthy, and clean. In reviewing the Annual Progress Report, we are disappointed in the continued absence of efforts to incentivize stormwater recharge and beneficial use. Heal the Bay has met with Metropolitan on this subject multiple times over the past five years to no avail. Stormwater is an important local water resource, and its capture and use should be incentivized. Captured stormwater can be utilized for many beneficial purposes. The Annual Progress Report mentions that results from the seven-year "Water Augmentation Study" demonstrate that stormwater infiltration would not adversely impact groundwater quality when proper best management practices are

implemented on-site (page 18). These findings reinforce the fact that captured stormwater can and should be used for groundwater recharge to increase local groundwater supplies. In addition, captured stormwater can be used in saltwater barriers to reduce saltwater intrusion. Also, recycled stormwater can be used in place of potable supplies for landscape irrigation. Such uses of stormwater are consistent with the proposed Recycled Water Policy, which is scheduled for adoption by the State Water Board on January 6, 2009. As an added benefit, capturing stormwater and preventing it from becoming runoff prevents the transportation of pollutants through the watershed, thus lessening pollutant loads in receiving waters. This is extremely important as water leaders begin to approach water issues from an integrated resources approach. Metropolitan already provides incentives for some sources of water. For instance, the Draft Progress Report states that Metropolitan set a 2025 IRP target for seawater desalination at 150,000 acre-feet, and that Metropolitan will provide incentives of up to \$250 per acre-foot for locally produced seawater desalination that reduces the need for imported supplies (page 15). Stormwater proves to be a much more sustainable, cost-effective local water resource than desalinated water, yet no incentives are provided for its capture and use. Using stormwater as a water source requires less energy and results in far fewer environmental impacts than many other sources of water such as desalination and water importation.

We urge Metropolitan to view stormwater capture and its reuse as a viable local water resource. This sentiment was echoed by numerous stakeholders at a recent Metropolitan Integrated Resources Plan stakeholder forum held in Los Angeles. Specifically, we strongly encourage Metropolitan to create a policy that provides economic incentives for stormwater recharge and reuse projects that at a minimum equals the economic incentive set for desalination at \$250 per acre-foot. We are eager to meet with you to discuss this issue further.

# Glossary

This is a list of common terms and acronyms used in this report.

**Acre-foot:** The amount of water that would cover one acre of land, one foot deep. An acre-foot is 325,851 gallons. On average, it supplies six to seven people in Southern California for one year.

**Bewaterwise.com:** A Web site sponsored by Metropolitan that has extensive information about how to use water more efficiently.

**California Friendly®:** A program that encourages Southern California residents to make their homes California Friendly by using native and drought-tolerant plants, smart irrigation systems and water-wise appliances that meet certain standards. Metropolitan also is working with home builders and the building industry on projects and programs that will spotlight state-of-the-art California Friendly features in current and future developments.

**Community Partnering Program:** Metropolitan's Community Partnering Program provides funding for water-related, educational outreach on regional water resources issues, such as conservation, watershed or water quality, educational material for California Friendly garden projects.

**Conjunctive Use:** The storing of imported water in a local aquifer, in conjunction with groundwater, for later retrieval and use.

**Desalination:** A process that removes salt and other minerals from seawater or brackish groundwater for potable use.

**Groundwater Recovery:** The extraction and treatment of groundwater making it usable for a variety of applications by removing chemicals and/or high levels of salts.

**HECW (High-efficiency Clothes Washers):** Washing machines that use less water than conventional washers and that are included in Metropolitan's incentive programs.

**HET (High-efficiency Toilet):** Newer generation toilets that on average use about 1.28 gallons per flush, saving about 8,000 gallons per year.

**IRP (Integrated Water Resources Plan):** Metropolitan's plan to ensure reliable water delivery to its member agencies despite population growth, dry spells and droughts. The IRP mix includes water storage, conservation, best management practices, recycling, desalination, and groundwater recovery, among others.

**LRP (Local Resources Program):** Metropolitan's funding mechanism for local recycling, groundwater recovery, and desalination projects.

**Potable/Non-Potable:** Drinkable and non-drinkable water according to California Department of Public Health standards, respectively.

**Proposition 13:** A 2000 water bond which authorized the state of California to sell \$1.97 billion in general obligation bonds to support safe drinking, water quality, flood protection and water reliability projects throughout the state.

**Proposition 50:** A 2002 water bond authorizing the state of California to sell \$3.4 billion worth of bonds to support safe drinking water, water security, water efficiency and protection of coastal watersheds and wetlands.

**Replenishment:** When supply and system conditions are favorable, Metropolitan can deliver interruptible water supplies to its member agencies at reduced rates that are used to replenish local groundwater supplies through percolation and direct injection.

**Smart Controllers (Weather-Based Irrigation Controllers):** Smart controllers adjust automatically to current weather conditions, increasing efficiency of irrigation systems.

**Watershed:** Geographical portions of the earth's surface from which water drains or runs off to a single place like a river; also called a drainage area.

*Photo credits:  
Sally Aristei, Tom Bleicher, Chris Hill,  
Larry LaCom, Rick Ravenstine, Debra Sass  
and MWD Photo Archives.*

Member Agencies



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 14, 1960



Joined Metropolitan  
November 12, 1954



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
October 16, 1950



Joined Metropolitan  
January 15, 1953



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
November 26, 1951



Joined Metropolitan  
December 1, 1960



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
November 26, 1951



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 17, 1946



Joined Metropolitan  
November 12, 1971



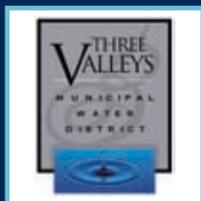
Joined Metropolitan  
December 6, 1928



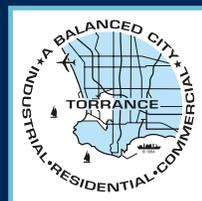
Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 6, 1928



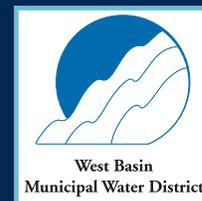
Joined Metropolitan  
November 15, 1950



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
March 27, 1963



Joined Metropolitan  
July 23, 1948

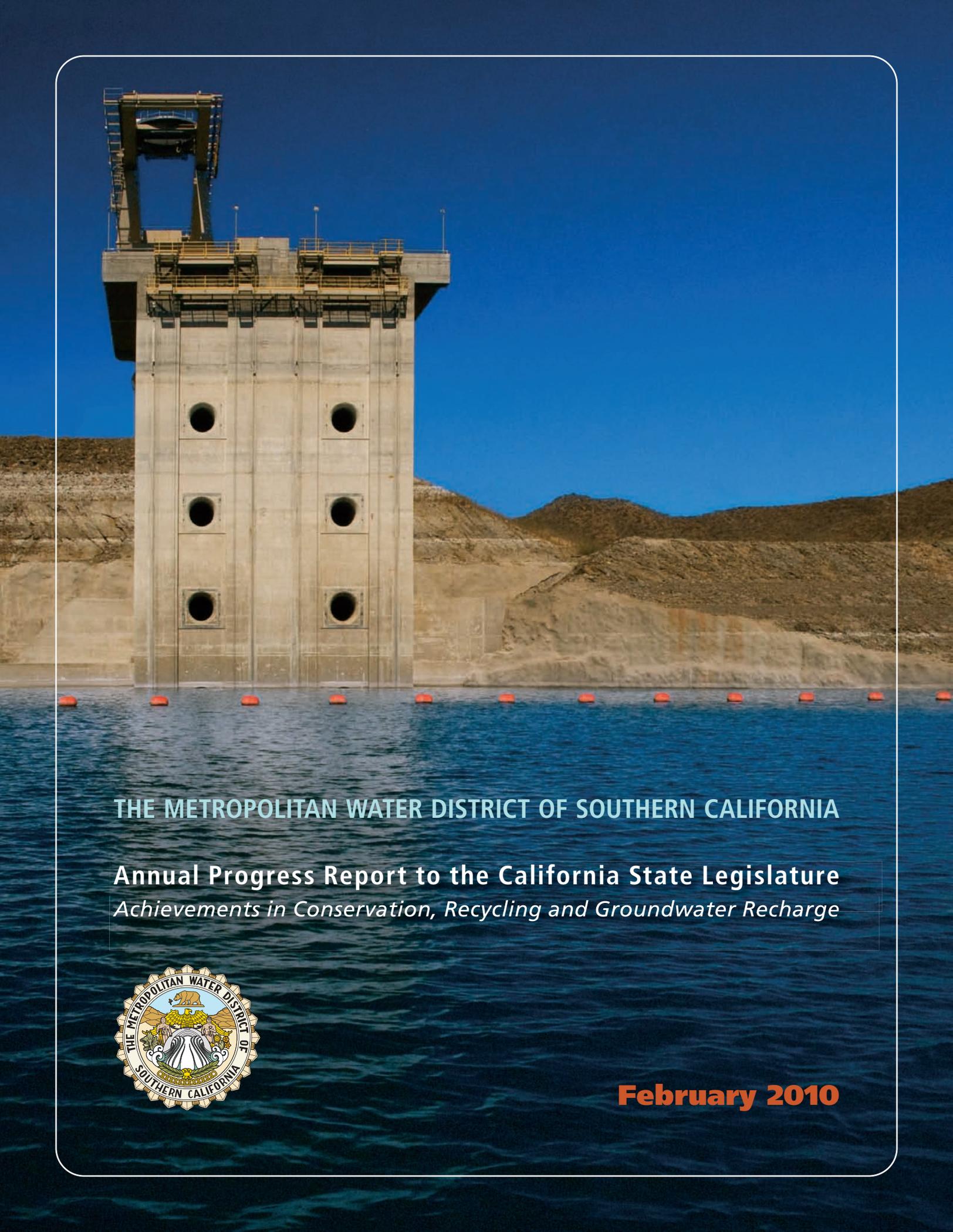


Joined Metropolitan  
November 12, 1954



*THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA*

[www.mwdh2o.com](http://www.mwdh2o.com)  
[www.bewaterwise.com](http://www.bewaterwise.com)

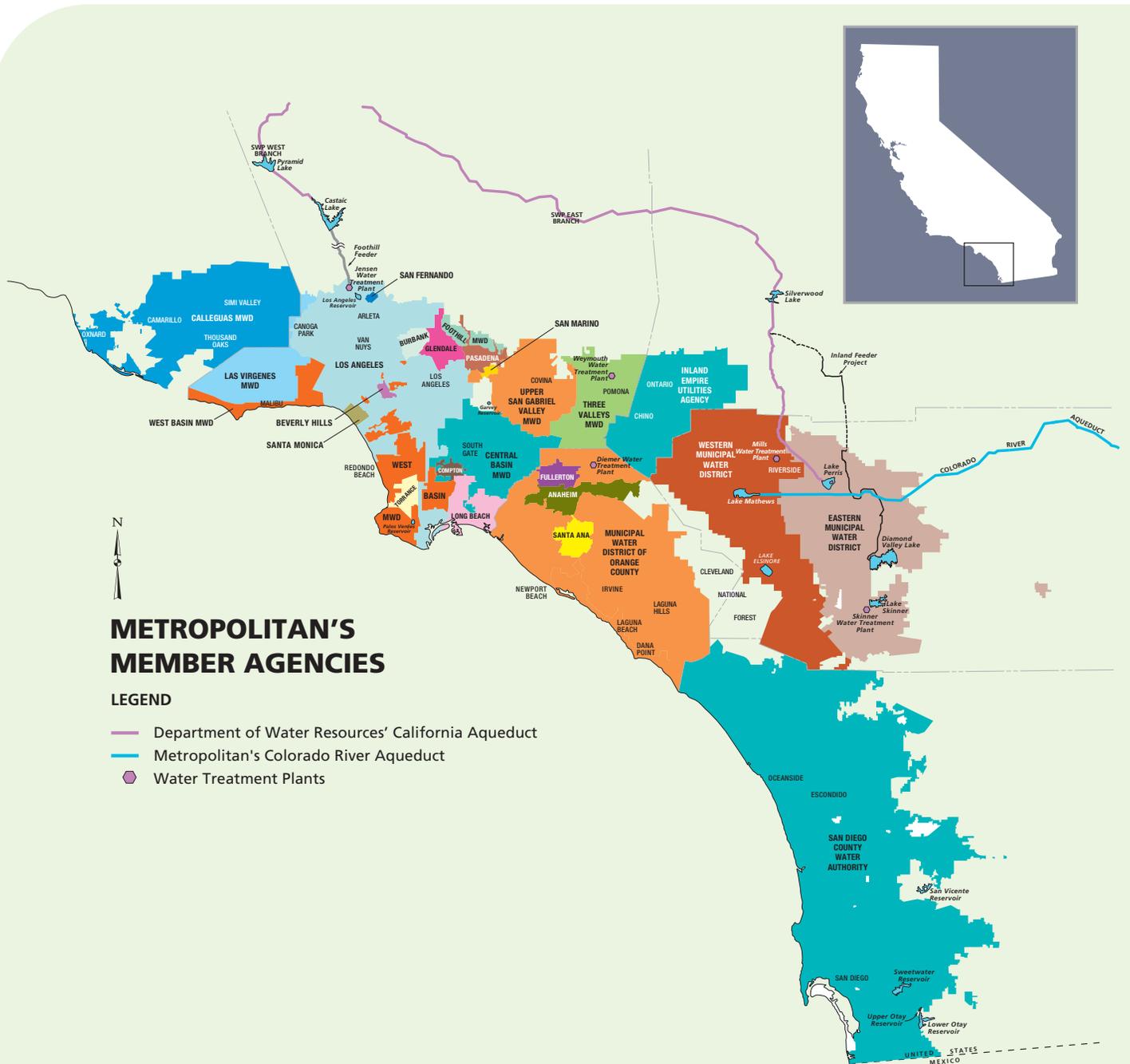


## THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

**Annual Progress Report to the California State Legislature**  
*Achievements in Conservation, Recycling and Groundwater Recharge*



**February 2010**



## METROPOLITAN'S MEMBER AGENCIES

### LEGEND

- Department of Water Resources' California Aqueduct
- Metropolitan's Colorado River Aqueduct
- Water Treatment Plants

The Metropolitan Water District of Southern California was established in 1928 under an act of the state Legislature to import water supplies for the Southland. Metropolitan is a public agency and a regional water wholesaler.

It is governed by a 37-member board of directors representing 26 member public agencies that purchase some or all of their water from Metropolitan and serve nearly 19 million people across six Southern California counties.

The mission of Metropolitan is to provide its 5,200-square-mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Metropolitan draws supplies through the Colorado River Aqueduct, which it owns and operates. Water supplies also come from Northern California via the State Water Project and from local programs and transfer arrangements. An increasing percentage of Southern California's water supply comes from conservation, water recycling and recovered groundwater, which are further described in this report.

Pictured on the cover:  
Like storage reservoirs across the state, Metropolitan's Diamond Valley Lake located in Riverside County was lowered to meet demand in the face of three consecutive dry years and environmental restrictions on water imported from the Sacramento-San Joaquin Delta.

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# Executive Summary



## **DROUGHT**

California faced the third year of drought and growing challenges posed by the region's limited water reserves and worsening environmental and regulatory conditions in Northern California's Sacramento-San Joaquin Delta.

## **RESERVES**

Since 2006, Metropolitan has drawn down reserves set aside for dry cycles by more than half. Storage reservoirs are approaching critical levels. Reserve levels serve as one of the key triggers for an allocation plan that limits water usage.

## **CONSERVATION**

Metropolitan's board of directors doubled funding for conservation programs, which included an outreach component, as well as additional funding for regional rebate programs that saw a record number of applicants.

Dramatic images of Diamond Valley Lake, Metropolitan and the Southland's largest storage reservoir located in Riverside County, contrast current (Oct. 09) reserve levels with the reservoir at full capacity (inset). Extraordinary conservation would help preserve and recover storage reserves.

**F**iscal year 2008/09 found Metropolitan facing ongoing water supply challenges. There was a record dry spring in the Sierra Nevada that resulted in diminished snowmelt and runoff levels. There were environmental restrictions imposed on water imports from the Sacramento-San Joaquin Delta. By year's end, mandatory conservation was in place across much of the Southland. The restrictions on water use, however, also generated a record demand for water-saving rebates and refocused efforts to increase development of local water resources.

On April 14, 2009, Metropolitan's board of directors voted to reduce water deliveries to its member agencies for the first time since 1991. As the region's wholesale supplier of water imported from Northern California and the Colorado River, Metropolitan provides water to its 26 member public agencies and helps supplement local supplies to meet the needs of 19 million Southern California residents. Mandatory restrictions went into effect July 1, 2009 to ensure regional demands remain in balance with limited resources.

As awareness of depleted water storage reserve levels and the need for conservation grew, Metropolitan issued a record number of residential and commercial rebates for water-saving devices in fiscal year 2008/09. Metropolitan's total fiscal year investment of \$44.5 million in rebates and other conservation activities resulted in new water savings of more than 16,000 acre-feet annually. Combined with water-saving devices rebated in prior years, the total annual water savings is about 134,000 acre-feet. (An acre-foot is equal to the annual water needs of between six to seven Southland residents.)

Metropolitan's rebate programs target residential, commercial and landscape water use. The programs are supported by public outreach and educational activities that bring the conservation message to a broad audience.

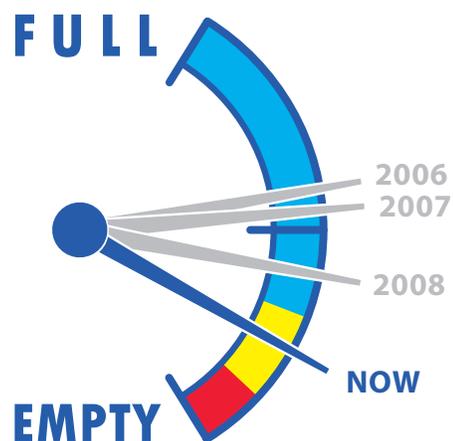
Metropolitan's new region-wide residential program, SoCal Water\$mart, completed its inaugural year of operation and far exceeded expectations as residents took advantage of available rebates in record numbers. Metropolitan funded 54,000 residential rebates in fiscal year 2008/09. The residential program, of which SoCal Water\$mart is a major component, accounted for annual water savings of about 5,500 acre-feet.

Save Water, Save A Buck (Save A Buck), Metropolitan's commercial and multi-family conservation program, provided rebates for more than 145,000 device retrofits which included water-saving plumbing fixtures, landscaping equipment, cleaning equipment, HVAC (heating, ventilating, air conditioning) and medical equipment. The program also funded high-efficiency washers and toilets, and irrigation equipment improvements for multi-family dwellings. The commercial program, of which Save A Buck is a major component, accounted for annual water savings of about 10,600 acre-feet.

Both rebate programs – SoCal Water\$mart and Save A Buck – were temporarily suspended in June 2009. Even while consideration for additional funding took place, some of Metropolitan's member agencies continued to fund rebates within their respective service areas. Both Metropolitan rebate programs were reinstated on September 21, 2009.

In addition to funding these two regional rebate programs, Metropolitan provided about \$8 million to member agencies for both residential and commercial programs. Metropolitan plans to continue its commitment to provide conservation incentives in the coming year for as long as funding lasts. This will build on an investment of more than \$268 million since 1990.

Metropolitan continued its ongoing conservation education program with the creation of the "Move the Needle" advertising education campaign. This campaign ran from February 23 to June 30, 2009 throughout Southern California, and is planned to continue through fiscal year 2009/10.



Metropolitan's water recycling and groundwater recovery programs continue to supplement the region's resource portfolio. In fiscal year 2008/09, about 155,000 acre-feet of recycled water was delivered for non-potable uses and about 46,000 acre-feet of degraded groundwater was treated and recovered for municipal use. A recap of Metropolitan's investment in local resources and a tabulation of water saved is listed in the Achievements Scorecard on page 3.

Watershed management and restoration are still a key focus of Metropolitan. Considerable effort was made this year to address issues related to the hub of California's water system – Northern California's Sacramento-San Joaquin Delta. About 30 percent of Southern California's water supply moves across the Delta, where the rivers of the western Sierra Nevada converge and move into the aqueduct system of the State Water Project. The Delta's declining ecosystem, caused by a number of factors that include agricultural runoff and operation of water pumps that can alter flows, has led to historic restrictions in water supply deliveries. The California State Legislature approved an historic package in early November 2009 that provides for Delta and statewide water management reforms as well as an \$11 billion water bond slated for the November 2010 ballot. The five successful bills related to a Delta governance plan that included a pathway for a conveyance fix; the November 2010 water bond; a mandate for local groundwater monitoring; a water-use efficiency program to lower by 20 percent per-capita urban water use statewide by 2020; and the water rights/Delta diversion bill.

Some Southland water agencies benefited from the \$1 billion in water infrastructure investments by the U.S. Department of the Interior under the American Recovery and Reinvestment Act of 2009. Twenty-seven projects throughout the West will share nearly \$135 million in ARRA funding through the Bureau of Reclamation's Title XVI program. Projects within California will receive 98 percent of the federal funding, with more than 70 percent of the state's projects located within Metropolitan's six-county service area. Nearly \$100 million in funds will help expand water reclamation and reuse programs in Southern California and create more long-term sustainable sources of supply.

Henry Kaiser, an American industrialist who was considered the father of modern American shipbuilding said, "Trouble is only opportunity in work clothes." Certainly these are troubling times. Metropolitan faces the first water allocation reduction in 18 years, mounting restrictions to water supplies, climate change and a global economic crisis with far-reaching impacts. We are challenged, but at the same time energized to find opportunity disguised as difficulty.



Photo courtesy of the California Department of Water Resources

The Sacramento-San Joaquin Delta, where the rivers of the western Sierra Nevada merge before heading into San Francisco Bay, is the hub of California's water system. The Delta's declining ecosystem has led to historic reductions in water supply deliveries to Southern California making the need all the more urgent to both improve the Delta environment and water system to help sustain the state's economy.

# Achievements Scorecard

## Metropolitan-Assisted Local Resources

### Active Conservation<sup>1</sup>

FY 2008/09 New Water Saved From Active Conservation Programs	16,000 acre-feet
FY 2008/09 Water Saved From New & Existing Active Conservation Programs <sup>2</sup>	134,000 acre-feet
Cumulative Water Saved From Active Conservation Programs <sup>3</sup>	1,271,000 acre-feet
FY 2008/09 Active Conservation Investment <sup>4</sup>	\$44.5 million
Cumulative Active Conservation Investment	\$268 million
Total FY 2008/09 Conservation Investment <sup>5</sup>	\$50 million

### Water Recycling<sup>6</sup>

FY 2008/09 Production	155,000 acre-feet
FY 2008/09 Investment	\$26.7 million
Cumulative Production	1,200,000 acre-feet
Cumulative Investment	\$220.6 million

### Groundwater Recovery<sup>6</sup>

FY 2008/09 Production	46,000 acre-feet
FY 2008/09 Investment	\$8.9 million
Cumulative Production	474,000 acre-feet
Cumulative Investment	\$89.4 million

## Metropolitan-Assisted Groundwater Programs

### Conjunctive Use Program

Metropolitan Cumulative Investment through December 2009	\$54.7 million
Metropolitan Appropriated Funds for Programs	\$63.4 million
Proposition 13 Grant Funds Administered by Metropolitan <sup>7</sup>	\$45.0 million
Conjunctive Use Storage Program Balance as of December 2009	125,000 acre-feet

### Cyclic Storage

Cyclic Storage Balance as of December 2009	0 acre-foot
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### Supplemental Storage

Supplemental Storage Balance as of December 2009	0 acre-foot
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### Water Rate Incentives For Groundwater Replenishment<sup>8</sup>

Cumulative Investment through December 2009	\$363.1 million
Replenishment Certified January through December 2009	0 acre-foot

1. Active conservation is water saved directly as a result of conservation incentives by Metropolitan and other water agencies, and includes device retrofits, process improvements, landscape efficiency improvements and other efficiency measures utilized in commercial, industrial and residential sectors. Additional water is conserved as a result of plumbing codes and other laws governing appliances and other products' efficiency standards.

2. Water savings from devices installed in fiscal year 2008/09 and from devices installed in prior years. It also includes water savings initially achieved through Metropolitan's active programs and then maintained through plumbing codes.

3. Cumulative water savings from active conservation programs since 1991. It also includes water savings initially achieved through Metropolitan's active programs and then maintained through plumbing codes.

4. Active conservation investment includes program vendor administrative fees.

5. Total conservation investment includes the Conservation Credits program plus education and advertising campaigns to promote conservation.

6. Metropolitan has provided financial incentives to its member agencies to develop new water recycling projects and groundwater recovery projects (that make degraded groundwater potable) through its Local Resources Program; figures reflect deliveries for all Metropolitan-assisted projects and payments reported through June 2009.

7. Proposition 13 refers to Chapter 9 of the Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act of 2000.

8. Water Rate Incentives represent the discount in water rates Metropolitan provides to its member agencies to encourage groundwater storage.

# Conservation



## CONSERVATION

Metropolitan continues to build on a nearly 20-year investment in conservation of more than \$268 million, reflecting a long-term commitment to water conservation.

## REBATES

Metropolitan's rebate programs target residential, commercial and landscape water use. A record number 54,000 rebates for residential customers and 145,000 rebates for commercial customers were issued as awareness of water conservation requirements increased.

## OUTREACH

Metropolitan continued its ongoing conservation education program with the creation of the "Move the Needle" advertising education campaign. This campaign ran from February 23 to June 30, 2009 throughout Southern California, and is planned to continue through fiscal year 2009/10.

Metropolitan in partnerships with its member agencies issued about 60,000 rebates for consumers to replace standard clothes washers with high-efficiency models. Also, in fiscal year 2008/09, multi-stream rotary nozzles saw a ten-fold increase in rebates compared to the prior year.

**M**etropolitan and its member agencies have long been leaders in water conservation. Metropolitan encourages water-use efficiency through research and development, financial incentives, programs to influence consumer behavior, education, support for new plumbing and compliance codes, and tiered pricing. The Integrated Water Resources Plan, Metropolitan's planning blueprint, calls for an annual water conservation goal of 1.1 million acre-feet by 2025. Towards that target, about 300,000 acre-feet will come from incentive-based conservation (also referred to as active conservation) with the balance of approximately 800,000 acre-feet saved through the impacts of water rates and compliance with plumbing codes, device standards and other laws.

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### **Fiscal Year 2008/09 Activities**

In fiscal year 2008/09, Metropolitan issued a record number of rebates for the installation of water-saving devices in homes and businesses through two incentive programs, SoCal Water\$mart (residential water customers) and Save Water, Save A Buck (commercial, industrial, institutional and multi-family water customers). This, along with Metropolitan's other conservation programs, resulted in savings of more than 16,000 acre-feet of water, or more than 5.2 billion gallons annually. Metropolitan continued its commitment to fund conservation incentives bringing the total investment to about \$268 million since 1990.

The early months of 2008 saw extremely high demand for water-saving rebates attributed to growing public awareness of conservation and the launch of residential rebate programs. In June 2008, Metropolitan's board of directors declared a Water Supply Alert throughout its six-county service area. The board's action was in response to drought conditions and severe water supply challenges occurring on a statewide level. The Alert encouraged cities, counties, local public water agencies, and retailers to achieve extraordinary conservation by adopting and enforcing drought ordinances, accelerating public outreach, and developing additional local water supplies.

Public education and outreach campaigns sponsored by the state of California, Metropolitan, the Association of California Water Agencies, California Department of Water Resources, and many local agencies combined with increased news coverage throughout the state, brought significant attention to water supply conditions.

In response to a strong initial demand for rebates, Metropolitan's board of directors doubled funding with an additional \$20 million in February 2009 to support the regional rebate programs. By the third quarter of the fiscal year, demands for the SoCal Water\$mart and Save A Buck rebate programs surpassed the additional funding. As a result, Metropolitan temporarily suspended the programs. Even as consideration for additional funding took place, some of Metropolitan's member agencies, including Anaheim Public Utilities, Burbank Water and Power, Los Angeles Department of Water and Power, Municipal Water District of Orange County, Pasadena Water and Power, and San Diego County Water Authority, continued to fund local rebates within their respective service areas, as did several water purveyors within member agency service areas. Metropolitan reinstated both rebate programs on September 21, 2009.

## Residential Programs

Metropolitan residential conservation consists of three major programs: SoCal Water\$mart, Save Water, Save A Buck multi-family and member agency implemented residential programs. Table 1 lists the devices rebated through Metropolitan's Residential Program and the annual water savings.

### SoCal Water\$mart

Metropolitan's new region-wide residential program SoCal Water\$mart completed its first year of operation. Rebate activity in this program exceeded expectations as many residential customers became increasingly aware of the financial incentives available to them to help offset the purchase of water-efficient fixtures. Metropolitan issued a record 54,000 rebates for residential fixtures totaling \$10 million in fiscal year 2008/09, resulting in approximately 2,300 acre-feet of water to be saved annually.



### Member Agency Residential Programs

In addition to regional programs implemented by Metropolitan, member and retail agencies may also implement local water conservation programs within their respective service areas and receive Metropolitan incentives for qualified retrofits and other water-saving actions. Typical projects include toilet replacements, locally administered clothes washer rebate programs, and residential water audits. Metropolitan has provided nearly \$6.5 million in fiscal year 2008/09, resulting in annual water savings of 1,500 acre-feet.

### Save Water, Save A Buck Program (Multi-Family)

Metropolitan's regional Save A Buck program extends rebates to multi-family dwellings. More than 40,000 rebates were issued fiscal year 2008/09 for high-efficiency toilets and washers for multi-family units within Southern California. Metropolitan has provided nearly \$7.5 million in fiscal year 2008/09, resulting in annual water savings of 1,700 acre-feet.

**Table 1. Devices rebated under Metropolitan's Residential Programs in fiscal year 2008/09**

Device	Acre-Feet/Year
High-Efficiency Clothes Washer	1,689
High-Efficiency Toilet	2,884
Irrigation Evaluation	26
Residential Survey	24
Rotating Nozzle	214
Ultra-Low-Flush Toilet	91
Weather-Based Irrigation Controller	271
Synthetic Turf	313
<b>Total</b>	<b>5,512</b>

## Commercial Programs

Metropolitan's commercial program provides rebates for water-saving plumbing fixtures, landscaping equipment, food-service equipment, cleaning equipment, HVAC (heating, ventilating, air conditioning) and medical equipment. As indicated in Table 2, the commercial program provided rebates for device retrofits throughout Southern California, resulting in an annual water savings of about 10,600 acre-feet. The commercial program was comprised of the Save A Buck program, the Public Sector Demonstration program, member agency administered programs, and the Water Savings Performance program.

### *Save Water, Save A Buck Program*

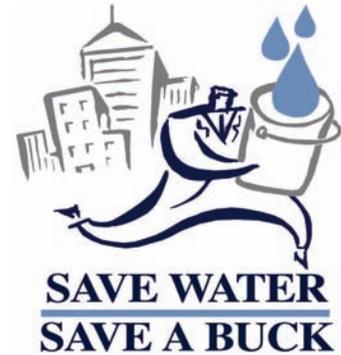
The majority of this year's commercial conservation activity came from Metropolitan's regional Save A Buck program which also extends rebates to multi-family dwellings. Though budget limitations required Metropolitan to suspend the program 10 months into the fiscal year, the Save A Buck program provided about \$8.8 million in rebates for about 145,000 device retrofits and water savings of about 3,600 acre-feet.

### *Accelerated Public Sector Water Efficiency Partnership Demonstration Program*

In August 2007, Metropolitan created a one-time program to provide up-front funding to increase water-use efficiency in public buildings and landscapes within its service area. The program was designed to reinforce the region's conservation message by demonstrating willingness for public agencies to respond to the call to save water. Participants included various special districts, school districts, state colleges and universities, municipalities, counties and other government agencies. In fiscal year 2008/09, Metropolitan issued \$9.5 million in rebates for water-efficient devices and new recycled water hook-ups, reaching the program's \$15 million cap this past fiscal year and achieving annual water savings of about 2,400 acre-feet for fiscal year 2008/09.

### *Member Agency Commercial Program*

Member and retail agencies implemented local commercial water conservation programs using Metropolitan incentives. Projects targeted specific commercial sectors, with many programs also receiving assistance from state or federal grant programs and using Metropolitan incentives as the basis for meeting cost-share requirements. To date, Metropolitan has provided nearly \$1.5 million in fiscal year 2008/09 funds to support locally implemented commercial programs administered by member and retail agencies resulting in annual water savings of about 4,400 acre-feet.



Installation of low-flow urinals in bathrooms on the University of California at Los Angeles campus is one of many Metropolitan-assisted projects in the Public Sector Program which demonstrates leadership in water-use efficiency by public agencies.

**Table 2. Devices rebated under Metropolitan's Commercial Programs in fiscal year 2008/09**

Device	Acre-Feet/Year
California-Friendly Landscape	7
Connectionless Food Steamer	1
Cooling Tower Conductivity Meter	87
Dry Vacuum Pump	2
High-Efficiency Clothes Washers	288
High-Efficiency Toilet	506
High-Efficiency Urinal	11
Landscape Audits	1,741
Landscape Water Use Accountability	2,154
Large Rotors - High Efficiency Nozzle	351
Multi Stream Rotating Nozzles	197
pH Cooling Tower Controller	68
Prerinse Spray Head	115
Recycled Water Hook-Up	801
Research and Development	2
Steam Sterilizer	7
Synthetic Turf	363
Ultra-Low-Flush Toilet	203
Ultra-Low-Flush Urinals	1
Water Broom	396
Water Savings Performance Program	187
Weather-Based Controller	2,201
X-ray Processor	3
Zero Water Urinal	868
<b>Total</b>	<b>10,560</b>

### **Water Savings Performance Program**

The Water Savings Performance Program is a branch of the commercial program that provides financial incentives for documented water savings for landscape irrigation and industrial process improvements. This program allows large-scale water users to customize their conservation projects and receive incentives for five years of water savings for proven water-use efficiency improvements. In fiscal year 2008/09 Metropolitan provided \$340,000 for expected annual savings of 200 acre-feet.

Metropolitan has entered into 16 agreements with projects that include:

- A correctional facility in Otay Mesa that installed automated toilet flush controls and expects annual water savings of about 250 acre-feet when the project is complete. Metropolitan will provide up to \$246,000 for the project.
- A Los Angeles textile dyeing-and-finishing facility that will upgrade its equipment to more water-efficient dye machines. The project expects to save about 60 acre-feet annually and receive a financial incentive of up to \$60,000.
- A California State University campus in the Los Angeles area that has retrofitted the campus irrigation system with weather-based irrigation controllers and is moving toward operation. Metropolitan will provide up to \$64,000 for the project, which expects to save about 65 acre-feet annually.

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## Water/Energy Partnerships

Metropolitan collaborated with regional energy utilities such as Southern California Edison and Sempra Energy to co-market water- and energy-saving devices in Metropolitan's service area. Potential collaborative efforts present a significant opportunity for Metropolitan to leverage the utilities' ties to commercial and industrial water users and existing rebate marketing campaigns designed to achieve greater water savings within Metropolitan's service area. As part of a California Public Utilities Commission pilot program, Metropolitan is co-funding with SCE the installation of high-efficiency toilets in low-income multi-family housing units. Data from this pilot project will be used to help determine the energy usage savings from water efficiency improvements. Also, as part of the CPUC pilot program, Metropolitan collaborated with SCE to co-market cooling tower pH controllers and weather-based irrigation controllers to commercial customers. Outside of the pilot program, Metropolitan worked in partnership with the energy utilities to promote its Water Savings Performance Program to large customers. For marketing efficiency programs to customers, the energy utilities have a Mobile Energy Unit that travels to hundreds of fairs, workshops and trade shows each year. Metropolitan partnered with the energy utilities to have a section inside the MEU to promote water efficiency and Metropolitan's water conservation Web site [bewaterwise.com](http://bewaterwise.com)

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## New Construction Programs

With grants from the U.S. Bureau of Reclamation and the state of California, Metropolitan offered financial incentives through the California Friendly® New Home Program. Builders of new single family model homes and multi-family developments are encouraged to incorporate water efficient fixtures and landscapes, including high-efficiency toilets and clothes washers, smart irrigation controllers, and landscapes designed with appropriate plant palettes and efficient irrigation systems. California Friendly model homes showcase residential water efficiency, helping to increase consumer awareness of water-conserving features and provide inspiration for water-conserving landscapes. Despite the severe impact of the recession on the building industry, in fiscal year 2008/09 Metropolitan provided incentives for four new model homes and approved incentives for a 254-unit apartment project designed to maximize water and energy efficiency. Since program inception in 2003, Metropolitan has provided incentives to eight homebuilders for more than 220 new homes with over 300,000 square feet of landscape.



Financial incentives provided through the California Friendly New Home Program encouraged builders of new single family model homes and multi-family developments to incorporate water efficient fixtures and landscaping into design plans.

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## Research and Development Programs

Metropolitan fosters two programs to encourage research and development of new and creative ways to conserve water: the Innovative Conservation Program provides funding to individuals and organizations; and the Enhanced Conservation Program provides funding directly to Metropolitan's member agencies to encourage new and creative approaches to implement urban water conservation.

In fiscal year 2008/09, Metropolitan received 24 new proposals with approximately \$3 million in funding requests for the Innovative Conservation Program. A review committee consisting of water agencies, the Bureau of Reclamation and Metropolitan have recommended projects for funding. Under the Enhanced Conservation Program, five of the 20 existing projects have been completed and the remaining projects are expected to be completed by the end of 2010.

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## Water Use Ordinances

In June 2008, following Governor Arnold Schwarzenegger's proclamation of a statewide drought, Metropolitan adopted a Water Supply Alert resolution. Among other provisions, the Alert encouraged cities, counties, local public water agencies, and retailers to adopt and enforce local water conservation ordinances. To facilitate ordinance adoption, Metropolitan compiled a library of available local ordinances, developed a model water conservation ordinance and hosted several workshops. As of June 2009, approximately half of the 19 million residents in Metropolitan's service area are covered by adopted ordinances, and an additional one-third reside in jurisdictions that have taken action toward adoption of ordinances. Metropolitan is projecting about 200,000 acre-feet per year of water savings in the next few years from adoption and enforcement of local water conservation ordinances.

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## Communications and Outreach

In fiscal year 2008/09, Metropolitan continued its ongoing conservation education program with the creation of the "Move the Needle" advertising education campaign. Ads and education materials using a water supply gauge depicting the region's water reserves were developed following a series of focus groups conducted in January 2009 in English and Spanish. This campaign ran from February 23 to June 30, 2009, throughout Southern California, and is planned to continue through fiscal year 2009/10. It involved the creation of four radio ads, three television commercials, two print and outdoor ads and multiple online banner ads.

The ads ran on 10 broadcast channels and three cable networks, 106 radio stations and more than 50 Web sites and search engines. Seven television weathercasters including KNBC-TV's Fritz Coleman and KCAL-TV's Jackie Johnson taped video vignettes that aired during the campaign promoting water conservation and the gauge. Messages were delivered in English, Spanish, Mandarin, Cantonese, Korean and Vietnamese. Social network marketing was done through creation of profiles, sites, and postings on Facebook, YouTube, Photobucket, Care2, StumbleUpon, Reddit, Digg, Squiddo, and HubPages.



Three television commercials (a screen capture from one pictured above) along with radio, print, outdoor and online banner ads worked to underscore the conservation message in the media and imprint the message in consumer minds.

The advertising has had a significant impact. In an online and phone survey conducted in July 2009 among 1,000 residents, eight of 10 Southern Californians recalled seeing the ads, and seven in 10 were aware of mandatory conservation. Among those who saw the ads, more than nine in 10 took action to save water.

Approximately 490,000 unique visitors came to [bewaterwise.com](http://bewaterwise.com) during the period of July 1, 2008 to June 30, 2009, resulting in more than three million page views. The [bewaterwise.com](http://bewaterwise.com) Facebook page had nearly 600 fans as of September 17, 2009, and the [bewaterwise.com](http://bewaterwise.com) YouTube channel had about 1,500 views. Nearly 2,000 visitors came to view [bewaterwise.com](http://bewaterwise.com) as a result of postings on blogs, Q&As, forums, bookmarking sites and social networking or group sites.

### **Community Events**

To continue to promote its water conservation programs, Metropolitan organized and staffed educational booths at numerous community events throughout its service territory. These included the California Construction Expo, the Orange County Children's Water Festival, the Los Angeles Parks Foundation Conservation Forum, the Los Angeles County Water Summit and the Colorado River Water Users Association.

### **Education Programs**

During fiscal year 2008/09, Metropolitan and its member agencies reinforced their conservation message through the distribution of educational materials, outreach activities and events for more than 60,000 K-12 students and more than 400 new program teachers throughout the service area. Key opportunities included: the seventh annual Solar Cup® boat race with 33 high school teams; the Southern California World Water Forum College Grant Program's completion of its funding cycle with the presentation of 17 completed water conservation projects from community college and university teams at the World Water Forum Expo; the 16th year of Metropolitan's Diamond Valley Lake Education Program; and the Student Water Conservation Art Program and the 2009 "Water is Life" calendar. Additionally, Metropolitan completed the redesign of its Education Programs Web site.



Solar Cup involves high school teams totaling about 800 students in the building and racing of solar-powered boats at Lake Skinner, in Temecula Valley.

### **California Friendly® Landscape Irrigation Efficiency Training**

Metropolitan's California Friendly Landscape Training program provided classroom and online water-wise landscaping classes to more than 900 professional landscapers and about 3,000 residents in fiscal year 2008/09. The classroom and online training is now provided in English and Spanish. Since the program's inception in 1994, more than 50,000 people have participated in the classes.

### **Community Partnering Program**

The Community Partnering Program continues to support water-related and educational community projects, programs and events. CPP funding supports Metropolitan's overall mission and results in expanding partnerships and collaboration with nonprofit community organizations, public agencies, professional associations and educational institutions. These co-sponsorships emphasize water conservation, watershed education, and other programs that support Metropolitan's California Friendly landscape conservation campaign and overall water conservation efforts.

# Local Resources



## LOCAL RESOURCES

Local resource projects help reduce demand on Metropolitan's imported water supplies. Metropolitan provides financial incentives under its Local Resources Program for the development and use of recycled water and recovered groundwater.

## RECYCLING

Wastewater is treated to a suitable standard for specific uses such as non-potable uses, groundwater recharge, and seawater intrusion barriers. About 155,000 acre-feet of recycled water was developed this year.

## RECOVERY

Degraded groundwater is recovered for potable use through treatment techniques that reduce high salt contents or other contamination. About 46,000 acre-feet of degraded groundwater was recovered for municipal use.

A revised agreement with the Orange County Water District extends Metropolitan's financial incentives to maximize the output of OCWD's Groundwater Replenishment System (pictured above). Reverse osmosis (inset) is a part of the advanced treatment process.

**W**ater recycling and groundwater recovery, along with seawater desalination and groundwater storage are increasingly important assets in the region's diverse local resource portfolio and help bring greater water supply reliability to Southern California. Local water agencies have largely led the development of water recycling and groundwater recovery projects with newer projects incentivized by Metropolitan's Local Resources Program. Seawater desalination is considered an important part of the regional resource mix. In 2009, Metropolitan's board of directors created a Special Committee on Desalination and Recycling to evaluate Metropolitan's role in the regional development of these resources. Metropolitan's investment in groundwater storage is available to offset imported supply reductions due to drought and environmental restrictions.

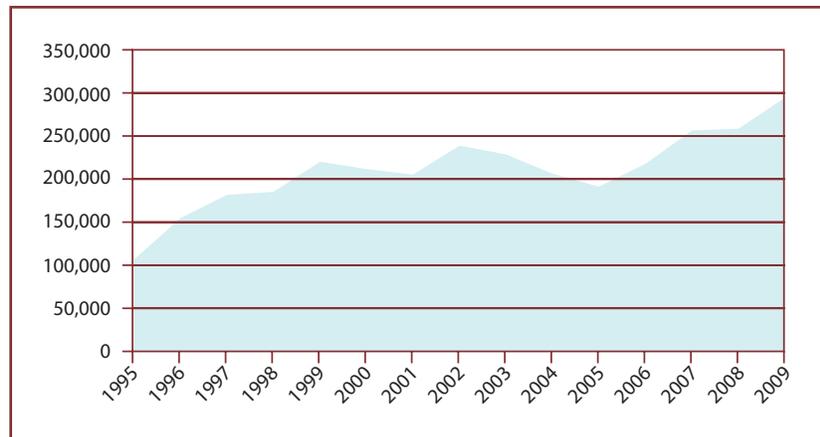
### Local Resources Program: Water Recycling and Groundwater Recovery

Metropolitan's Local Resources Program is a performance-based incentive program designed to expand water recycling and the recovery of degraded groundwater. Projects help achieve regional water supply reliability by reducing or preventing new demand on Metropolitan's imported water supplies through either direct replacement of potable water or increased regional groundwater production. Funded in part by the Local Resources Program, about 155,000 acre-feet of recycled water was developed for non-potable uses and about 46,000 acre-feet of groundwater was recovered for municipal use in fiscal year 2008/09. Figures 1 and 2 represent total recycled water and groundwater recovery production in Metropolitan's service area including local agency funded projects.

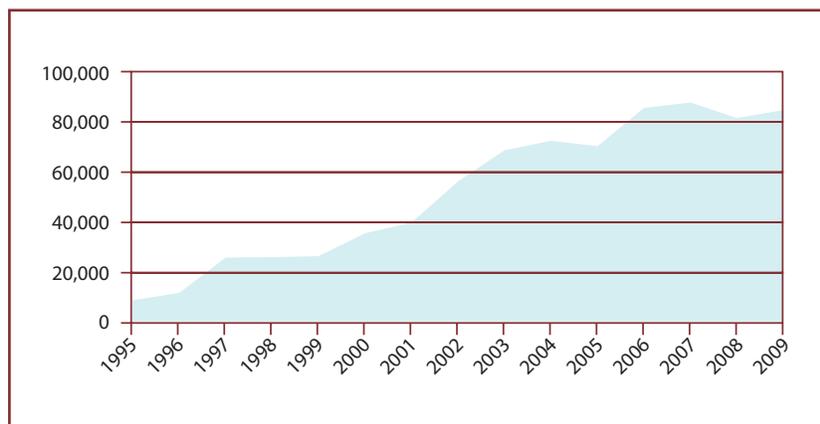
#### Fiscal Year 2008/09 Local Resources Program Highlights

Metropolitan amended an agreement with the Municipal Water District of Orange County and the Orange County Water District for the Groundwater Replenishment System to provide additional funding for increased recycled water production up to 70,000 acre-feet per year. The recycled water will be used for groundwater replenishment and seawater intrusion barrier. Metropolitan will provide incentives on a per acre-foot basis of actual yield for 23 years or a total of 713,000 acre-feet of production, whichever occurs first.

**Figure 1. Recycled water produced in Metropolitan's service area including projects funded by the Local Resources Program (acre-feet).**



**Figure 2. Groundwater recovery produced in Metropolitan's service area including projects funded by the Local Resources Program (acre-feet).**



Upper San Gabriel Valley Municipal Water District received a \$5 million grant from the State Water Resources Control Board to develop a segment of the City of Industry's Regional Recycled Water Project. This project is part of the Local Resources Program and will receive up to \$350,000 from Metropolitan for approximately 4,400 acre-feet of recycled water produced annually for 25 years.

Metropolitan executed an incentive agreement with Inland Empire Utilities Agency that will contribute up to \$3.6 million to distribute 14,400 acre-feet per year of recycled water for non-potable and indirect potable uses. The agreement includes an option for a second phase that would require Metropolitan board approval to increase the production threshold by 18,600 acre-feet and provide additional funding of \$4.6 million annually.

The Irvine Ranch Water District Recycled Water System Project Upgrade commenced operation in November 2008, producing up to 8,500 acre-feet for recycled water for municipal use. This project will receive \$117 per acre-foot of recycled water produced from Metropolitan for 30 years. Irvine Ranch Water District is a retail agency of the Municipal Water District of Orange County.

The Harrison Well Groundwater Treatment Project commenced operation in September 2008, treating degraded groundwater for potable use. This project will receive \$100 per acre-foot of treated water from Metropolitan for up to 1,100 acre-feet annually for 25 years. The project is owned and operated by the city of Pomona, a retail agency of Three Valleys Municipal Water District.

### Seawater Desalination

Seawater desalination represents a potentially reliable, locally controlled supply and could prove an important component of Southern California's and the state's future water supply portfolio. Metropolitan currently supports member agency efforts to develop local seawater desalination projects as a regional facilitator.

In 2001, Metropolitan solicited proposals from member agencies for desalination projects. The projects proposed by five member agencies will provide up to 142,000 acre-feet annually with Metropolitan to provide incentives up to \$250 per acre-foot of water produced. In addition to these projects, there are three more under consideration by member agencies.

Tables 3 and 4 summarize the status of seawater desalination projects.

**Table 3. Seawater desalination projects in Metropolitan's Seawater Desalination Program**

Project Name	Member Agency	Acre-Feet/Year	Status
Long Beach Seawater Desalination	Long Beach	10,000	Pilot study <sup>1</sup>
Los Angeles Seawater Desalination	Los Angeles Department of Water and Power	28,000	On hold
South Orange Coastal Ocean Desalination	Municipal Water District of Orange County	16,000-28,000	Pilot study
Carlsbad Seawater Desalination	San Diego County Water Authority	56,000	Permitting Complete
West Basin Seawater Desalination	West Basin Municipal Water District	20,000	Pilot study <sup>1</sup>
<b>Total</b>		<b>130,000-142,000</b>	

<sup>1</sup> Full scale feasibility studies are underway at these locations.

**Table 4. Other potential seawater desalination projects in Metropolitan’s service area**

Project Name	Member Agency	Acre-Feet/Year	Status
Huntington Beach Seawater Desalination	Municipal Water District of Orange County	56,000	Initiating Permitting
Camp Pendleton Seawater Desalination	San Diego County Water Authority	56,000 to 168,000	Planning
Rosarito Beach Seawater Desalination	San Diego County Water Authority	28,000 to 56,000	Feasibility study
<b>Total</b>		<b>140,000 to 280,000</b>	

## **Groundwater Management**

### **Conjunctive Use**

Metropolitan’s dry-year conjunctive use program involves storing surplus imported supplies within the service area to maintain reliability during dry, drought and emergency conditions. This provides Metropolitan with about 422,000 acre-feet of additional storage from which Metropolitan is allowed to withdraw about 115,000 acre-feet per year during shortage years. Metropolitan has placed 225,000 acre-feet in storage since the program’s inception. Nearly 80,000 acre-feet have been withdrawn to date, underlining the importance of this program for maintaining supply reliability in times of resource cutbacks and drought.

### **Cyclic Storage**

In addition to the conjunctive use program, Metropolitan has cyclic storage agreements in two major groundwater basins in its service area, allowing for up to 240,000 acre-feet of imported water storage. These agreements provide for pre-delivery of surplus replenishment water, allowing for storage of surplus on short notice. The basins purchase the replenishment water over time to offset groundwater pumping. This storage has been used to support continued groundwater production, and the accounts are now depleted.

### **Supplemental Storage**

During fiscal year 2005/06 when California received significant precipitation, Metropolitan offered the Supplemental Storage Program to encourage the storage of surplus water. Metropolitan originally had about 36,000 acre-feet in storage through agreements with the Los Angeles Department of Water and Power and Municipal Water District of Orange County. The 16,000 acre-feet with MWDOC have been withdrawn to meet municipal water needs. Next fiscal year, 10,000 acre-feet stored by the Los Angeles Department of Water and Power will be withdrawn.

Metropolitan held a series of groundwater workshops with its member agencies and groundwater basin managers to review needs and develop recommendations for continued reliability of groundwater production and enhancement of storage and conjunctive use. Currently, Metropolitan staff and workshop participants are developing basin models to evaluate effects of changing patterns of available imported water on groundwater basins.

# Watershed Initiatives

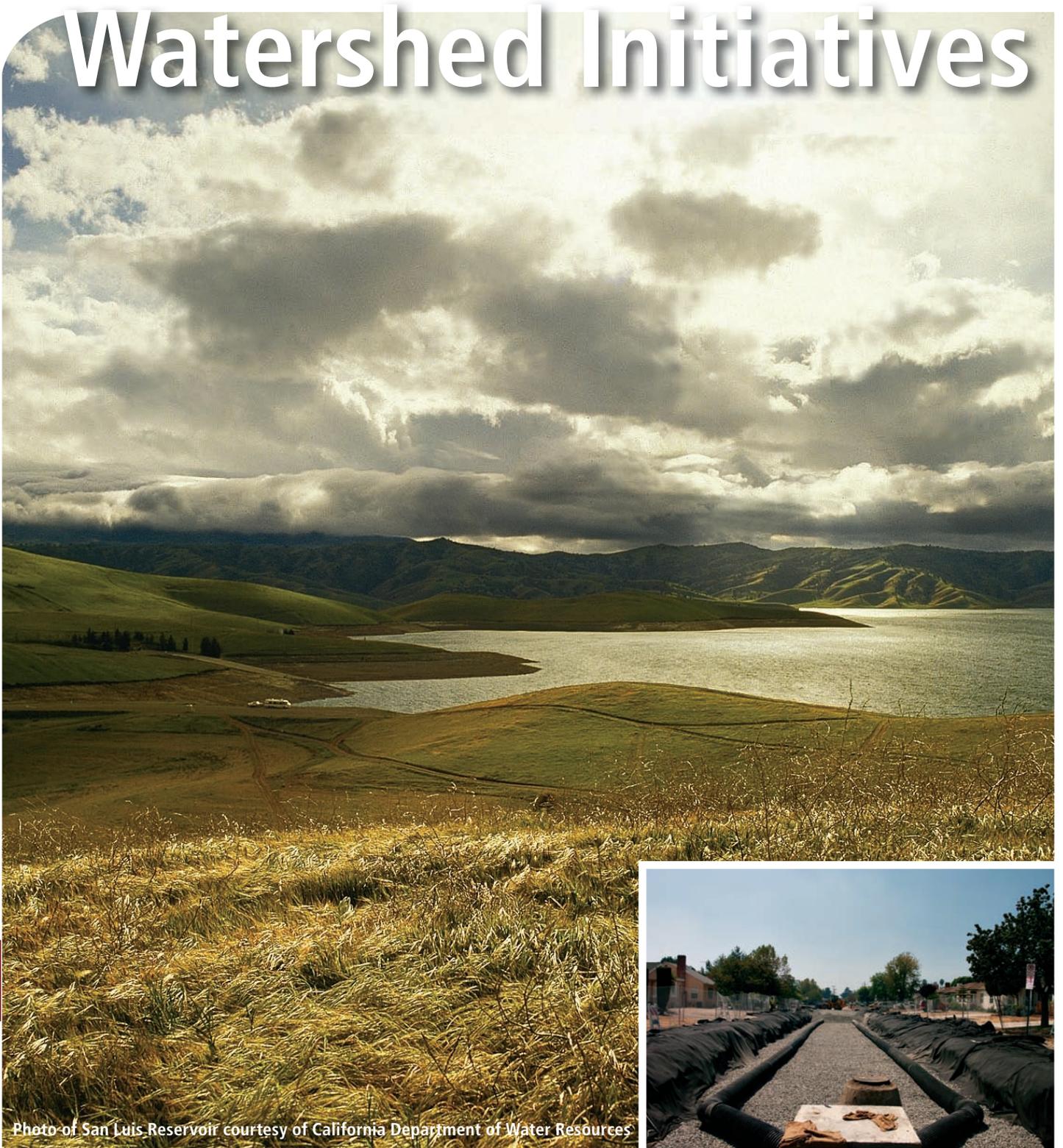


Photo of San Luis Reservoir courtesy of California Department of Water Resources



## WATERSHED

A watershed is the area of land where water from rain or snowmelt collects and drains into a body of water like a river, lake, reservoir or wetland. Metropolitan has been a long-time support of local projects that benefit different watersheds in support of water quality and supply reliability objectives.

## LOCAL INITIATIVES

Metropolitan provides technical assistance to Regional Water Management groups that address a range of issues including growing water demands, supply reliability, water quality, storm water management, open space and habitat, and project financing.

## SACRAMENTO-SAN JOAQUIN DELTA

Metropolitan continued to work with agencies and stakeholders throughout the Bay-Delta watershed to conduct studies and develop policies, programs and legislation that will protect drinking water quality and aquatic wildlife.

A demonstration project (pictured above) on Elmer Street in the Sun Valley neighborhood is designed to capture urban runoff and provide groundwater recharge. The project is a joint effort of the Los Angeles and San Gabriel Rivers Watershed Council, TreePeople, the City of Los Angeles, Metropolitan, U.S. Bureau of Reclamation, Los Angeles County Department of Public Works and other agencies, and public supporters.

**M**etropolitan is active on planning boards and organizations formed to improve watershed management and restoration. Metropolitan works with stakeholders in the Sacramento-San Joaquin Delta watershed, and participates in the Greater Los Angeles County Integrated Regional Water Management Plan and the Los Angeles and San Gabriel Rivers Watershed Council.

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### **Integrated Regional Water Management Planning**

Regional Water Management groups typically consist of public agencies with water or wastewater authorities, cities, counties, special districts and non-governmental organizations that address a broad range of issues including growing water demands, water supply reliability, water quality, stormwater management, open space and habitat, and financing of projects. The RWMG develops plans called the Integrated Regional Water Management plans that emphasize high-quality water supply development to meet the region's water needs. Local agencies can implement IRWMPs by utilizing grant funds from the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 (Proposition 50) and the Safe Drinking Water, Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84).

In Metropolitan's service area, the following Regional Water Management Groups have received Proposition 50 grants: the Greater Los Angeles County region; South Orange County Water Management Area; Santa Ana Watershed Planning Authority; the San Diego Region; and the Watershed Coalition of Ventura County. Grant applications for Proposition 84 funding are due in mid-2010.

Metropolitan has been monitoring and providing technical assistance as requested to its member agencies that serve on various Regional Water Management groups within the service area. Metropolitan has been participating as the surface water management area representative on the Greater Los Angeles County region leadership committee.

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### **Los Angeles and San Gabriel Rivers Watershed Council Water Augmentation Study**

Metropolitan has been a participant in the Water Augmentation Study, a 10-year research study on stormwater runoff measurement which began in 2000. The study investigates the benefits, costs, and risks of capturing stormwater to augment water supply through infiltration. The study demonstrated that stormwater infiltration does not adversely impact groundwater quality when best management practices are implemented on site. The research effort also generated a computer model for users to assess infiltration potential (quantity of stormwater captured) based on physical characteristic of an area, land use, soil type and additional runoff capture; a list of best management practices and suitability based on land use and other physical constraints; a report on the valuation of stormwater infiltration as a local supply source; and specific criteria for selection of applicable neighborhoods for retrofit.

The study now includes a demonstration phase with 15 residential properties retrofitted on Elmer Street in the Los Angeles neighborhood of Sun Valley. The project will capture urban runoff and provide groundwater recharge, flood management and water quality benefits with the inclusion of rain gardens, California Friendly plants, underground runoff capture devices and a meandering pathway in lieu of a concrete sidewalk. The final steps of the study will include monitoring results and a regional strategy report for implementation.

## Sacramento-San Joaquin Delta Watershed

The Sacramento-San Joaquin Delta watershed is an important source of water supply delivered to Metropolitan through the State Water Project. Due to the large size of the watershed, the diversity of land uses and the projected population growth, many watershed activities affect or have the potential to affect Delta water quality. Metropolitan continued to work with agencies and stakeholders throughout the Bay-Delta watershed to conduct studies and develop policies and programs that protect Delta water quality for drinking water uses and for aquatic wildlife.

Metropolitan continued to support the California Department of Water Resources' Municipal Water Quality Investigations Program, which implements water quality monitoring and special studies in the Delta and its tributaries to develop a better understanding of the sources and effects of drinking water quality constituents of concern. This DWR program continued important studies assessing the potential water quality impacts of urban runoff from a rapidly urbanizing city in the Delta watershed and evaluating the effects of agricultural management practices on the water quality of discharges from Delta islands.

Through its involvement in water coalitions such as the California Urban Water Agencies and State Water Contractors, Metropolitan also participated in stakeholder processes addressing drinking water quality protection, and supported ongoing studies of toxic contaminants in the Delta and their possible role in the Delta fishery decline observed in recent years. Metropolitan continued to work with the Central Valley Regional Water Quality Control Board; California Department of Public Health; U.S. Environmental Protection Agency Region 9; CALFED Bay-Delta Program; CUWA; and key wastewater, urban runoff and agricultural stakeholders to develop a drinking water policy for surface waters in the Delta watershed. This program is a multi-year effort and the schedule for completion of watershed studies and policy development has been delayed by the state's freeze on bond funding. Once adopted, the drinking water policy will provide a more effective regulatory framework for implementing drinking water quality protection activities in the Delta watershed.



Photo courtesy of California Department of Water Resources

Metropolitan participates in the Bay-Delta Conservation Plan process, a collaborative effort to restore the Delta ecosystem and protect water supplies.

Metropolitan also continued to participate in the Bay-Delta Conservation Plan process, which is a collaborative effort to restore the Delta ecosystem and protect water supplies. The main goal of the BDCP is to provide for both endangered species and habitat protection and improved reliability of water supplies. Metropolitan participates on the BDCP Steering committee with state and federal agencies, water agencies, and environmental and conservation organizations. One of the key BDCP Steering Committee accomplishments this year included the completion and release of the draft conservation strategy, which includes conservation strategies for water operations, Delta habitat restoration, and for other Delta ecosystem stressors such as toxic contaminants and other water quality issues, non-native invasive species, and harvest. Metropolitan and the other BDCP participants also supported the Department of Water Resources' efforts to initiate the environmental review process for the BDCP.

# Ethics Office



The Metropolitan Water District  
of Southern California



Ethics and Leadership: A New View

## **ENFORCEMENT**

The Ethics Office provides leadership through enforcement of ethics related laws, rules and mandates.

## **EDUCATION**

Directors, staff and contractors are provided with seminars, workshops, self-study opportunities and online training in compliance with state rules to help clarify expectations for ethical conduct. An interactive Web site and internal news publications are also available as learning tools.

## **ENHANCEMENT**

The Ethics Office enhances the ethical culture of Metropolitan by encouraging ethics over mere compliance. This is accomplished with a values recognition program, member agency ethics interchange program and an ethics library open to all access.

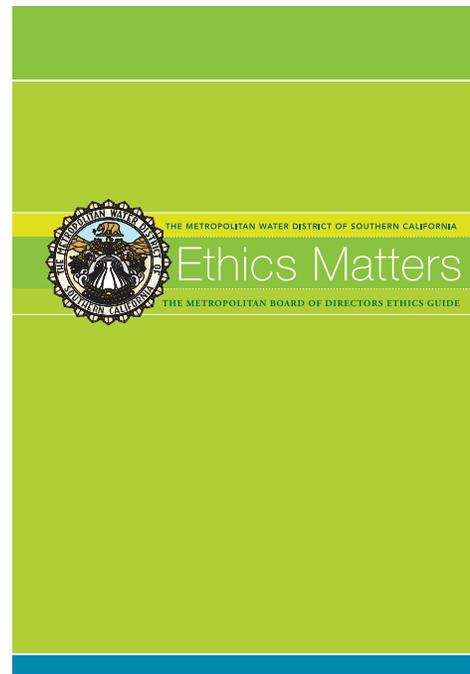
**T**he Ethics Office seeks to enhance the ethical culture of Metropolitan by encouraging directors, officers and employees to see themselves as people with the ability to affect Metropolitan's ethics.

In addition, the Ethics Office enforces ethics-related rules, regulations and laws and provides online and face-to-face education programs and training designed to promote a value-based workplace.

In fiscal year 2008/09, Metropolitan's Ethics Office accomplished the following:

- Responded to more than 90 questions and expressions of concern from stakeholders, with an average turnaround time of three days for questions involving research and review, and seven days for concerns;
- Updated relevant sections of Metropolitan's Administrative Code to include a section on harassment and to update the Ethics Office investigation and enforcement procedures;
- Revised Metropolitan's Ethics Policy including Operating Policies to clarify those relating to involvement in community and political activities and those relating to romantic or sexual relationships with co-workers;
- Provided AB 1234 training to Metropolitan board of directors and designated management with 100 percent compliance;
- Provided ethics education at field locations outside of the Los Angeles headquarters to more than 500 employees and managers;
- Created Web-based ethics training for the board of directors' Web site as well as the employee internal Web site;
- Distributed monthly Ethics posters and annual reminders for Ethics Policy review by employees;
- Collaborated with Human Resources and Legal Department to formulate questions regarding employee awareness of ethics for inclusion in a new Metropolitan employee survey;
- Conducted member agency phone surveys to assess awareness of Metropolitan ethics resources and to learn about programs at the member agency level.

Detailed manuals for directors provide real-life scenarios and situational advice to help maintain an ethical culture at Metropolitan. There are also manuals for employees and for issues related to Metropolitan contracts, grants and sponsored programs.



# Public Hearing Comments



## **MWD ACT SECTION 130.5 (d)**

"The district shall invite to the hearings knowledgeable persons from the fields of water conservation and sustainability, and shall consider factors of availability, water quality, regional self-sufficiency, benefits for species and environment, the totality of life-cycle costs, including avoided costs, and short- and long-term employment and economic benefits."

## **ANNOUNCEMENT**

Metropolitan invited representatives from the fields of water conservation and sustainability to attend the public hearing on its annual progress report. In addition, announcement of the public hearing was posted via Metropolitan's board agenda on its Web site.

## **HEARING**

On December 7, 2009, Metropolitan held a public hearing on its achievements in conservation, recycling, and groundwater recharge at its Headquarters in Los Angeles.

The following excerpts are from the public hearing held on Dec. 7, 2009 and from comments submitted in response to Metropolitan's draft report on achievements in conservation, recycling and groundwater recharge for fiscal 2008/09 as required by section 130.5 of the MWD Act.

**Chris Brown, executive director, California Urban Water Conservation Council**

Thank you Mr. Chairman, members of the Committee. It's a pleasure to be able to speak to you today. As the largest wholesaler in the state and an original signatory to the Memorandum of Understanding which sets forth the best management practices that water utilities across the state of California pursue, I appreciate all the work that Met has supported over the years in terms of water conservation. I think that the financial assistance that you offer to your 26 member agencies and to basically more than half the citizens of this state is critical and needs to be continued on into the future. Among the particular programs that are called out in the report is financial assistance to residential users of water including high efficiency clothes washers. Metropolitan's program is really driving the market. The clothes washers which are the bulk of those you are rebating right now save more than twice the amount of water that front loading clothes washers saved just a decade ago.

On the commercial sector you have a wide variety of programs that reflect the variation in commercial demand for water. Again, I'd like to call your attention to one in particular. The pH controllers for cooling towers are pursuing not just water savings but new technology that decreases the maintenance and operations cost of cooling towers. This is the kind of thing that has environmental and economic benefits for the recipients of your program that go beyond simply the water saved, but also the carbon footprint. And of course no comment would be complete without pointing out all of the things you are doing on landscape water use. As the Governor's 20x2020 Task Force pointed out, if the state is to meet a 20 percent reduction in per capita demand by 2020, we are going to have to address landscape directly. And you are already there. You have multiple programs including the California Friendly Landscape conversion programs. You also have multiple head rotating irrigation nozzles, system retrofits, and training programs. Finally, the technical assistance that's called out in the report is essential both here in Southern California on your water-energy initiatives but also throughout the state for the leadership that you are showing.

I encourage you to continue leadership into the future. It's important that the financial investment that you made in the past continue into the future.

**Greg Ray, vice president of landscape architecture, Pardee Homes**

Thank you, Mr. Chairman and the Committee. I'd just like to tell you real quickly what's happening on the development end of things other than all the bad news you've been hearing about how we're not selling homes. On the landscape side, I'm the Vice President of Landscape Architecture for Pardee Homes, and I've known Charles [Gale] for over four years, and when we first started the program California Friendly, we started talking about the homeowners and how the homeowners perceived the way they saw landscape. Where we're at now, in our communities, as well as others, we've got smart controllers going in all of our communities at Pardee. We've reduced the turf to 25 percent max in our front yards, and I'll talk a little bit more about that in a minute about the homeowner feedback on that. We've also taken the California Friendly idea and brought it to the offsites. We have over 4 million square feet of slope that was currently under plan check with exotic irrigated systems. We've now converted that, and we're with LA County, the City of Moorpark, the City of Lake Elsinore, and others. We've come full circle with them and we're bringing native plants all the way down to the edge of communities in our regions. As far as the front yard packages for

our homeowners, in talking about what the feedback is from our homeowners, right now they've always come back to us saying "we want more turf, we want more turf." So we have to show them, "here's another way to do it." What we're doing is spending a little bit more money because we're using smart controllers, we're using dry creeks, we're bringing in more exotic plants...not exotic but native plants, and succulents and things like that. We do appreciate the financial support we get from the credits for that. I guess in closing I'd just like to say thank you for all the support you've given us as developers. We're going through a hard time right now, both with water and with the economy, and so I just say thank you for your support.

**Conner Everts, co-chair, Desal Response**

First I'd like to compliment you on your report. I think that this is an important opportunity to review it. Now that it's done, and I think you've done a good job, in a very generous sense, in laying out the issues. The public hearing should include more people who have spoken to you before on this issue. I would suggest the Sierra Club, Food and Water Watch, Green L.A., and others who participated.

I implore you to move forward with backfilling the money that was owed on your incentives program for conservation programs and then put more into the budget. You did the former but not the latter. We continue to be in a drought and we really need to incentivize these programs.

The other item I'd like to add, and while I compliment you on what you've done here... desalination is not really an existing program providing water up to this point. It's speculative to the future, so I don't really see how it fits into this report. Those are my general comments.

I would like to follow up though as a former convener of the California Urban Water Conservation Council, as the Executive Director Chris Brown said, you've laid out a good variety of programs, in particular the Water Augmentation Study and the local watershed work is laid out nicely. You could look more to the watershed work done in some of your source watersheds, from both the Colorado and the work that's being done in Plumas (administration of the high meadows that provide water to the State Water Project through the Feather River and the Sacramento River).

**Andrew Henderson, vice president and general counsel, Building Industry Association of Southern California**

Thank you Mr. Chairman. My name is Andy Henderson. I'm the Vice President and General Counsel of the Building Industry Association of Southern California. The BIA has worked for many years in cooperation with the MWD in water conservation and I would like to touch very briefly on just four aspects of that. One is the in-home conservation efforts, and I think new home building has really made great strides in that regard. There is still a little bit of incremental benefit to be made in the area of dishwashers and washing machines and trying to get my family members to take shorter showers, but otherwise there have been great strides in lessening the consumption inside the homes.

There has also been a great deal of cooperation with the BIA in connection with the xeriscaping and trying to have developers do more in terms of developing ways that allow yards to use less water. There's obviously more work to be done there. There are questions of consumer acceptance but I think the BIA is working well with the MWD in that direction.

The third thing I wanted to discuss briefly was the question of capturing stormwater for use. It's extremely challenging in Southern California where we have flashy, largely semiarid lands and yet we have some policy imperatives being rolled out by now, for example, the Los Angeles Regional Water Quality Control Board that would ask people to capture and infiltrate stormwater on a lot-by-lot basis. And the reason why that should be of great concern to this group, is that it's not nec-

essarily the most optimal way to try to capture what little can be captured from stormwater. It may make much more sense to do it on a sub-regional or regional basis and to try to do the infiltration where it makes sense to do it as opposed to doing it on a much more expensive basis on a lot by lot basis. So, we look forward to working with the MWD hopefully in getting a larger discussion with the Water Boards, with the environmentalists, about a better way to look at capturing stormwater.

The last thing is recycling. I think the BIA is very much interested in getting over the political hurdle of recycling, I mean municipal wastewater. Look at examples like Tucson, or Aurora, Colorado. Aurora, Colorado basically doubled their use of their water by implementing municipal wastewater recycling. And so the BIA I think absolutely feels that is the future and something we look forward to working with the MWD on facilitating. Thank you.

**Steve Ruffner, president, Southern California Division, KB Home (written comments submitted)**

I am writing in support of the Metropolitan Water District's (MWD) successful efforts in promoting cost-effective water conservation programs. KB Home has partnered with MWD at several of our communities and offers their California Friendly Water Conservation program to our homebuyers. Our Built to Order home buying experience allows our homebuyers to choose from a full range of "My Home. My Earth." environmentally friendly options. These fall into four categories:

- Energy Efficiency options that help conserve energy or generate energy from renewable sources.
- Water Wise options that help conserve water.
- Inside Environment options that help promote cleaner indoor air and water quality or have antigerm properties.
- Sustainable Sources options that contain recycled, recyclable or renewable materials.

In addition, our homes are ENERGY STAR qualified and include:

- Energy Star qualified appliances to save on energy costs for years to come
- Programmable thermostats to help save on heating/cooling costs
- Low flow bath fixtures to save on water usage
- Low VOC paint to promote better indoor air quality
- Recyclable, low VOC carpets to promote better indoor air quality
- In California, drought tolerant/non invasive California native plants

To support increasing water efficiency in our homes, KB Home has implemented water conserving landscaping standards and builds to "California Friendly" program standards. We measure KB homeowners' perceptions of the energy efficiency of their new homes as part of our customer satisfaction surveys. As a result of implementing these measures into our building practices, KB Home has seen a strong increase in their ratings over the past few years.

KB Home's vision for sustainability is to become a leading environmentally friendly national company by working with organizations like MWD to minimize the impact of our business and homes on the environment, to increase positive change in the protection of our Earth and its resources, and to continue to make the dream of homeownership attainable.

KB Home supports and encourages MWD on their efforts promoting water conservation programs and looks forward to continuing our partnership into future years.

**Renée Maas, water programs organizer, Food & Water Watch (written comments submitted)**

It has come to our attention that MWD is seeking feedback from stakeholders to integrate into the draft report of "Achievements in Conservation, Recycling and Groundwater Recharge: Annual Report to the California State Legislature" for the 2008/09 fiscal year. We were only made aware of the process last week, and are therefore unable to complete an in-depth analysis. Nonetheless, our preliminary recommendations are as follows:

1. Increase the conservation rebate program to help meet increased demand.
2. Maximize the most energy-efficient, environmentally sound, and cost-effective methods for securing water before aggressively pursuing and subsidizing seawater desalination. (The Carlsbad project does not meet this requirement by our evaluation.)
3. Improve the public input portion of the SB60 process by inviting organizations and individuals in the Southern California area who have participated in MWD workshops and/or participated in public comment to attend the board meeting and to submit their comments and to post meeting announcements on the MWD website inviting the public to attend the meeting and/or submit comment.

*Conservation Rebate Program Recommendation:*

We urge MWD to increase the conservation rebate program to meet the demand for conservation measures. Last year's success, precipitating a 200 percent expansion in the conservation program, demonstrates that there is a significant demand to continue the rebate program. Unfortunately, it seems highly probable that MWD's current allocation of solely \$20 million will fail to meet the demand. Indeed, exactly one year after MWD required \$60 million dollars to satisfy the demand for rebates; it seems highly likely that the 2010 demand for rebate programs is going to be more than the allocated \$20 million. The need for water conservation rebates has clearly not yet been exhausted, as evidenced by last year's high demand. Water conservation is one of the most sustainable, environmentally sound, and cost-effective methods to ensure that Southern California is able to meet its future water needs. We urge MWD to proactively ensure that the program is able to meet the growing needs of the public.

*Seawater Desalination Recommendation:*

We call upon MWD to maximize the most energy-efficient, environmentally sound, and cost-effective methods for securing water before aggressively pursuing and subsidizing seawater desalination. These methods should include increased conservation and water efficiency programs, continued public education to help consumers reduce water consumption, assistance to water districts and municipalities to repair leaking infrastructure, groundwater clean-up, increased grey water use, and the creation and implementation of low-impact development ordinances.

*Public Input and Recommendation:*

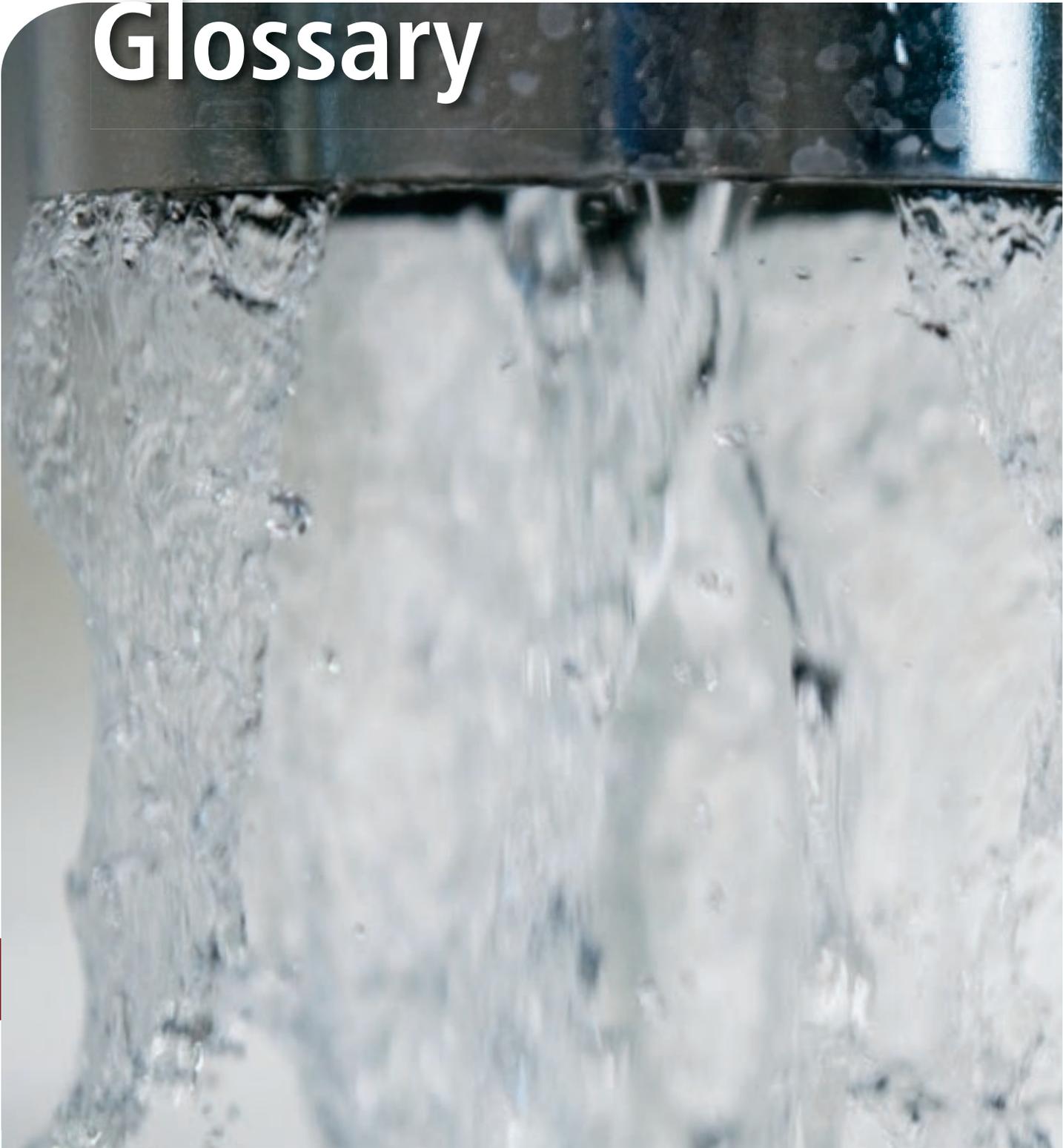
The process for seeking public input on the draft report is insufficient, resulting in a lack of meaningful public input and accountability. While there are numerous conservation and water policy groups with substantial expertise in the Southern California area that have participated in MWD meetings in the past, unfortunately these groups were not invited and/or absent at the public hearing on December 7, 2009.

- Invite all stakeholders in the Southern California area who have participated in MWD workshops and/or participated in public comment to attend the board meeting and ask them to submit their comments.

- Post the meeting announcement on the front page of the website and make it clear to the public they are invited to attend the meeting and/or submit public comment.

*Two attachments were submitted with written comments: a July 8, 2009 letter to the MWD Board of Directors concerning the Conservation Credits Program co-signed by numerous environmental agency leaders and a November 4, 2009 memo on the marginal cost analysis for proposed Carlsbad Desalination Project prepared by Mark Schlosberg, western regional director, Food and Water Watch.*

# Glossary



## **ACTIVE CONSERVATION PROGRAM**

Active conservation is water saved directly as a result of conservation incentives by Metropolitan and other water agencies, and includes device retrofits, process improvements, landscape efficiency improvements and other efficiency measures utilized in commercial, industrial and residential sectors.

## **LOCAL RESOURCES PROGRAM**

Metropolitan's funding mechanism for local recycling, groundwater recovery, and desalination projects.

## **GROUNDWATER PROGRAMS**

When supply and system conditions are favorable, Metropolitan can deliver surplus water to the Conjunctive Use, Cyclic Storage, and/or Supplemental Storage programs, in addition to providing interruptible water to its member agencies at reduced rates that are used to replenish local groundwater basins.

**Acre-foot:** The amount of water that would cover one acre of land, one foot deep. An acre-foot is 325,851 gallons. On average, an acre-foot supplies six to seven people in Southern California for one year.

**Bewaterwise.com:** A Web site sponsored by Metropolitan that has extensive information about how to use water more efficiently.

**California Friendly®:** A program that encourages Southern California residents to make their homes California Friendly by using native and drought-tolerant plants, smart irrigation systems and water-wise appliances that meet certain standards. Metropolitan also is working with home builders and the building industry on projects and programs that will spotlight state-of-the-art California Friendly features in current and future developments.

**Community Partnering Program:** Metropolitan's Community Partnering Program provides funding for water-related, educational outreach on regional water resources issues, such as conservation, watershed or water quality, educational material for California Friendly garden projects.

**Conjunctive Use:** The storing of imported water in a local aquifer, in conjunction with groundwater, for later retrieval and use.

**Desalination:** A process that removes salt and other minerals from seawater or brackish groundwater for potable use.

**Groundwater Recovery:** The extraction and treatment of groundwater making it usable for a variety of applications by removing chemicals and/or high levels of salts.

**HECW (High-efficiency Clothes Washers):** Washing machines that use less water than conventional washers and that are included in Metropolitan's incentive programs.

**HET (High-efficiency Toilet):** Newer generation toilets that on average use about 1.28 gallons per flush, saving about 8,000 gallons per year.

**IRP (Integrated Water Resources Plan):** Metropolitan's plan to ensure reliable water delivery to its member agencies despite population growth, dry spells and droughts. The IRP mix includes water storage, conservation, best management practices, recycling, desalination, and groundwater recovery, among others.

**LRP (Local Resources Program):** Metropolitan's funding mechanism for local recycling, groundwater recovery, and desalination projects.

**Potable/Non-Potable:** Drinkable and non-drinkable water according to California Department of Public Health standards, respectively.

**Replenishment:** When supply and system conditions are favorable, Metropolitan can deliver interruptible water supplies to its member agencies at reduced rates that are used to replenish local groundwater supplies through percolation and direct injection.

**Smart Controllers (Weather-Based Irrigation Controllers):** Smart controllers adjust automatically to current weather conditions, increasing efficiency of irrigation systems.

**Watershed:** Geographical portions of the earth's surface from which water drains or runs off to a single place like a river; also called a drainage area.

# MWD Act

Sections 130.5 and 130.7 of The Metropolitan Water District Act

Added by Statutes of 1999, Chapter 415 (SB 60 (Hayden))

130.5. (a) The Legislature finds and declares all of the following:

(1) The Metropolitan Water District of Southern California reports that conservation provides 7 percent of its “water resource mix” for 1998, and conservation is projected to provide 13 percent of its total water resources by 2020.

Conservation, water recycling, and groundwater recovery combined, provide 12 percent of the district’s total water resources for 1998 and those water resources are projected to increase to 25 percent of the district’s total water resources by 2020.

(2) It is the intent of the Legislature that The Metropolitan Water District of Southern California expand water conservation, water recycling, and groundwater recovery efforts.

(b) The Metropolitan Water District of Southern California shall place increased emphasis on sustainable, environmentally sound, and cost-effective water conservation, recycling, and groundwater storage and replenishment measures.

(c) The Metropolitan Water District of Southern California shall hold an annual public hearing, which may be held during a regularly scheduled meeting of the Board of Directors of The Metropolitan Water District of Southern California, during which the district shall review its urban water management plan, adopted pursuant to Part 2.6 (commencing with Section 10610) of Division 6 of the Water Code, for adequacy in achieving an increased emphasis on cost-effective conservation, recycling, and groundwater recharge in accordance with this section.

The Board of Directors of The Metropolitan Water District of Southern California may modify any ongoing program as necessary to meet that requirement, consistent with the district’s urban water management plan.

(d) The district shall invite to the hearings knowledgeable persons from the fields of water conservation and sustainability, and shall consider factors of availability, water quality, regional self-sufficiency, benefits for species and environment, the totality of life-cycle costs, including avoided costs, and short- and long-term employment and economic benefits.

(e) On or before February 1, 2001, and on or before each February 1 thereafter, The Metropolitan Water District of Southern California shall prepare and submit to the Legislature a report on its progress in achieving the goals of increased emphasis on cost-effective conservation, recycling, and groundwater recharge in accordance with this section, and any recommendations for actions with regard to policy or budget matters to facilitate the achievement of those goals.

(f) Nothing in this section shall diminish the authority of The Metropolitan Water District of Southern California pursuant to Section 25 or any other provision of this act, or otherwise affect the purposes of The Metropolitan Water District of Southern California as described in existing law.

130.7. (a) The Metropolitan Water District of Southern California, in cooperation with the following entities, shall participate in considering programs of groundwater recharge and replenishment, watershed management, habitat restoration, and environmentally compatible community development utilizing the resource potential of the Los Angeles River, the San Gabriel River, or other southern California rivers, including storm water runoff from these rivers:

(1) Member public agencies whose boundaries include any part of the Los Angeles River, the San Gabriel River, or any other river in southern California.

(2) The Water Replenishment District of Southern California.

(3) Local public water purveyors and other appropriate groundwater entities.

(4) The County of Los Angeles.

(5) The United States Army Corps of Engineers.

(b) Nothing in this section affects the powers and purposes of the Water Replenishment District of Southern California or any other groundwater management entity, the County of Los Angeles, local public water purveyors, or the United States Army Corps of Engineers.

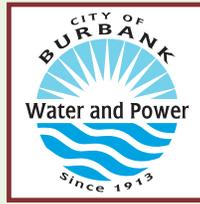
## METROPOLITAN'S MEMBER AGENCIES



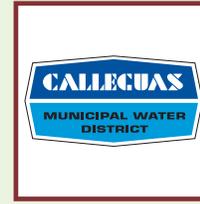
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December 6, 1928



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
December 14, 1960



Joined Metropolitan  
November 12, 1954



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
October 16, 1950



Joined Metropolitan  
January 15, 1953



Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
December 6, 1928



Joined Metropolitan  
November 26, 1951



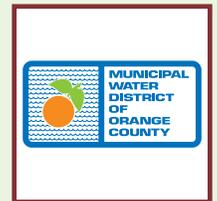
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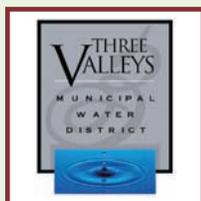
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December 6, 1928



Joined Metropolitan  
November 15, 1950



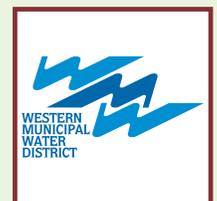
Joined Metropolitan  
February 27, 1931



Joined Metropolitan  
March 27, 1963



Joined Metropolitan  
July 23, 1948



Joined Metropolitan  
November 12, 1954



**THE METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA**

[mwdh2o.com](http://mwdh2o.com)

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