MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Report

Water Resource Management Group

- **Transmittal of February 2006 Metropolitan Annual Progress Report to the California State Legislature on Achievements in Conservation, Recycling and Groundwater Recharge**

Summary

Section 130.5 of the Metropolitan Water District Act requires Metropolitan to prepare and submit, on or before February 1 of each year, an annual report to the California State Legislature on our progress in achieving the goals of increased emphasis on cost-effective conservation, recycling, and groundwater recharge.

Attachments

Relationships Work: Achievements in Conservation, Recycling, and Groundwater Recharge, Annual Progress Report to the California State Legislature, February 2006

Detailed Report

Section 130.5 of the Metropolitan Water District Act requires Metropolitan to prepare and submit, on or before February 1 of each year, an annual report to the California State Legislature on Metropolitan's progress in achieving the goals of increased emphasis on cost-effective conservation, recycling, and groundwater recharge. This is Metropolitan's sixth annual progress report. The attached report presents the achievements during the year 2005 (**Attachment 1**). Metropolitan will be submitting this report to the California State Legislature by February 1, 2006, as required by the Act.

Summary of Activities

Metropolitan continued to advance its conservation goals with water-saving device incentives, public awareness campaigns and, more recently, the expansion of California Friendly™ landscape and model home development programs. In FY 2005 Metropolitan-assisted conservation programs helped save over 112,000 acre-feet of water, bringing cumulative device-based conservation savings to over 827,000 acre feet. Also in FY 2005, Metropolitan-assisted water recycling and groundwater recovery programs produced 114,000 acre-feet of water with an additional 152,000 acre-feet of water produced by non-Metropolitan funded projects in the region. In addition to the K through 12 school programs, conservation-oriented education programs like *Protector Del Agua* continued to expand and promote awareness of water-efficient landscaping and native and drought-tolerant plants, while Community Partnering and City Makeover Programs continued to engage larger communities and cities in developing greater water resources awareness and water use efficiency.

Consistency with Published Reports

The data included in this report are consistent with Metropolitan's 2005 Regional Urban Water Management Plan and the 2005 Integrated Resources Plan Implementation Report. Data on locally developed supplies were obtained from, and coordinated with, member agencies.

Public Hearing

In conjunction with this report and in accordance with Section 130.5, Metropolitan held a December 12, 2005 public hearing on this matter, where Metropolitan reviewed its achievements in promoting cost-effective conservation, recycling, and groundwater recharge. Metropolitan invited to the public hearing knowledgeable persons from the fields of water conservation and sustainability. Individuals present at the hearing included:

- Nancy Steele, Executive Director, Los Angeles & San Gabriel River Watershed Council
- John Van Egmond, Egmond Associates
- Bob Yoder, Shea Homes
- Gerald Robinson, Loyola Marymount University
- Marcus Lee, Los Angeles Unified School District
- Mike Huck, representing the Southern California Golf Association
- Rob Starr, Director, Strategic Technologies, The Toro Company
- Connor Everts, P.O.W.E.R.
- Frances Spivy-Weber, Mono Lake Committee
- Testimony received at the public hearing, and written comments submitted to staff, are provided in the attached report.

January 10, 2006

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

ANNUAL PROGRESS REPORT TO THE CALIFORNIA STATE LEGISLATURE

ACHIEVEMENTS IN CONSERVATION, RECYCLING AND GROUNDWATER RECOVERY

FEBRUARY 2006

In Memory

Dennis Underwood

1944-2005

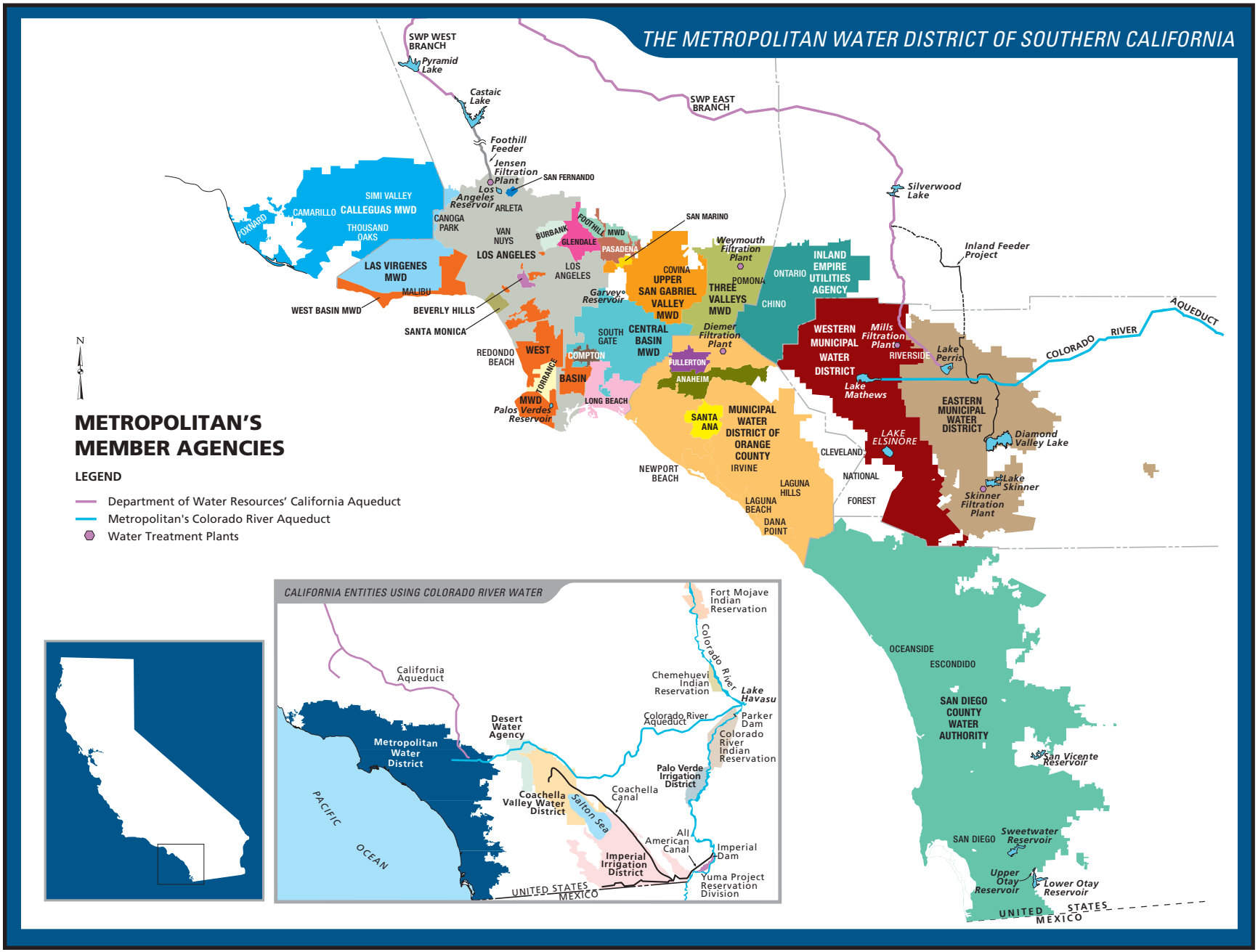
CEO/General Manager

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
SWP WEST BRANCH
Pyramid Lake
Castaic Lake
Foothill Feeder
Jensen Filtration Plant
SAN FERNANDO
Los Angeles Reservoir
ARLETA
SWP EAST BRANCH
Silverwood Lake
Inland Feeder Project
SIMI VALLEY
CAMARILLO
CALLEGUAS MWD
THOUSAND OAKS
POINT MUGU
CANOGA PARK
VAN NUYS
BURBANK
FOOTHILL MWD
GLENDALE
PASADENA
SAN MARINO
LOS ANGELES
LOS ANGELES
LAS VIRGENES MWD
MALIBU
WEST BASIN MWD
BEVERLY HILLS
SANTA MONICA
Garvey Reservoir
COVINA
UPPER SAN GABRIEL VALLEY MWD
Weymouth Filtration Plant
THREE VALLEYS MWD
POMONA
ONTARIO
INLAND EMPIRE UTILITIES AGENCY
CHINO
WESTERN MUNICIPAL WATER DISTRICT
Mills Filtration Plant
RIVERSIDE
Lake Perris
COLORADO RIVER AQUEDUCT
Lake Mathews
EASTERN MUNICIPAL WATER DISTRICT
Diamond Valley Lake
LAKE ELSINORE
CLEVELAND NATIONAL FOREST
Lake Skinner
Skinner Filtration Plant
SOUTH GATE
CENTRAL BASIN MWD
Diemer Filtration Plant
REDONDO BEACH
WEST BASIN
COMPTON
FULLERTON
ANAHEIM
TORRANCE
LONG BEACH
MWD Palos Verdes Reservoir
SANTA ANA
MUNICIPAL WATER DISTRICT OF ORANGE COUNTY
IRVINE
NEWPORT BEACH
LAGUNA HILLS
LAGUNA BEACH
DANA POINT
OCEANSIDE
ESCONDIDO
SAN DIEGO COUNTY WATER AUTHORITY
San Vicente Reservoir
SAN DIEGO
Sweetwater Reservoir
Upper Otay Reservoir
Lower Otay Reservoir
UNITED STATES MEXICO
N
METROPOLITAN'S MEMBER AGENCIES
LEGEND
Department of Water Resources' California Aqueduct
Metropolitan's Colorado River Aqueduct
Water Treatment Plants
CALIFORNIA ENTITIES USING COLORADO RIVER WATER
Fort Mojave Indian Reservation
Colorado River
California Aqueduct
Chemehuevi Indian Reservation
Lake Havasu
Parker Dam
Colorado River Aqueduct
Colorado River Indian Reservation
Desert Water Agency
Metropolitan Water District
Palo Verde Irrigation District
Coachella Canal
Coachella Valley Water District
Salton Sea
All American Canal
Imperial Dam
Imperial Irrigation District
Yuma Project Reservation Division
PACIFIC OCEAN
UNITED STATES MEXICO

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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 groundwater 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 Management 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 groundwater 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 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.

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 statewide 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,

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 million 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

Metropolitan's 2005 Achievements Scorecard

Metropolitan-Assisted Local Resources

Active Conservation:

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

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.

Water Recycling:

73,000 AF	FY 2005 Production
$14 Million	FY 2005 Investment
746,000 AF	Cumulative Production
$138 Million	Cumulative Investment

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).

Groundwater Recovery:

41,000 AF	FY 2005 Production
$7 Million	FY 2005 Investment
280,000 AF	Cumulative Production
$49 Million	Cumulative Investment

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.

Metropolitan-Assisted Groundwater Programs

Contractual Storage:

$37.5 Million	Cumulative Investment Through 2005
$64.3 Million	Metropolitan Funds Earmarked for Programs
$45 Million	Prop. 13 Grant Funds Administered by Metropolitan

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

Water Rate Incentives:

$334 Million	Cumulative Investment Through 2005

Water Rate Incentives represent the discount in water rates Metropolitan provides to its member agencies to encourage groundwater storage

Conjunctive Use Storage & Replenishment

December 2005 Delivery Storage: 303,150 AF

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.

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.

Metropolitan'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 Metropolian'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 Instititutional 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, 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/home01.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 California 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 inquires 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.

Conservation

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 statewide 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.

Water 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.

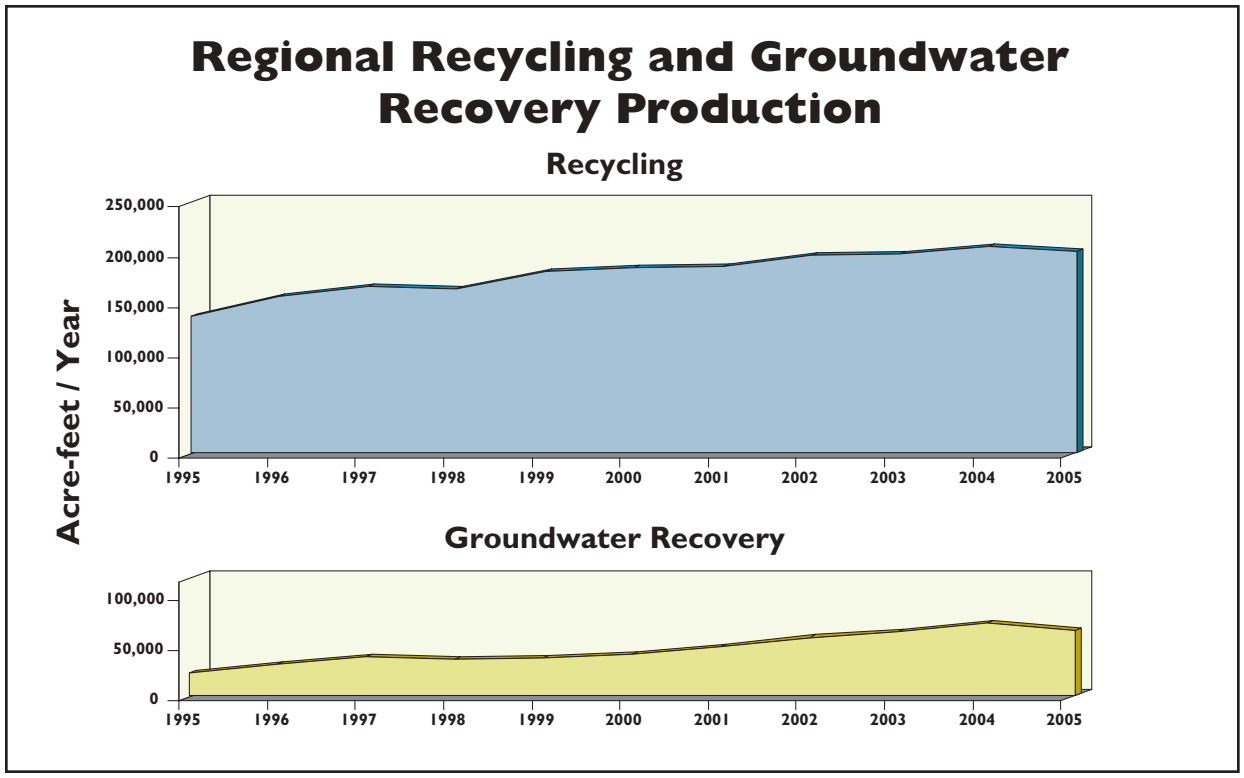
Metropolitan has agreements with its member agencies and their subagencies for 59 water recycling projects; 44 were in operation in fiscal year 2005. Metropolitan's funding contribution was over $14 million. Member agencies and other local agencies also

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

1982

Start of Metropolitan's Local Projects Program, now the Local Resources Program

73,000

Acre-feet of recycled water produced in FY 2005 with Metropolitan funding

$14 million

Metropolitan's FY 2005 funding for recycled water projects

$138 million

Metropolitan's 23-year investment in recycled water projects

$7 million

Metropolitan's FY 2005 contribution to local groundwater recovery efforts

$49 million

Metropolitan's cumulative groundwater recovery financial assistance to date

66,000

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

Metropolitan 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 financial 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 Subbasin 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

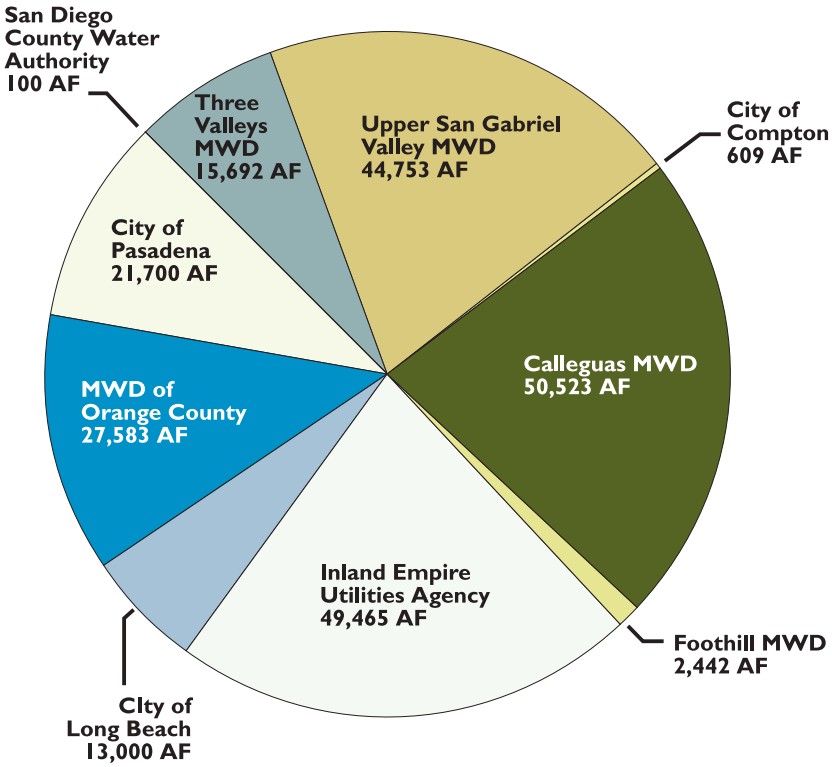
These eight agreements will provide a total of 194,000 acre-feet of storage for dry-year needs in Southern California. Some of these agreements also provide funding for treatment of contaminated groundwater, ensuring that stored water can be readily used. In the west San Gabriel Valley, Metropolitan 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 and Local Agency Reservoirs

As Of December 2005

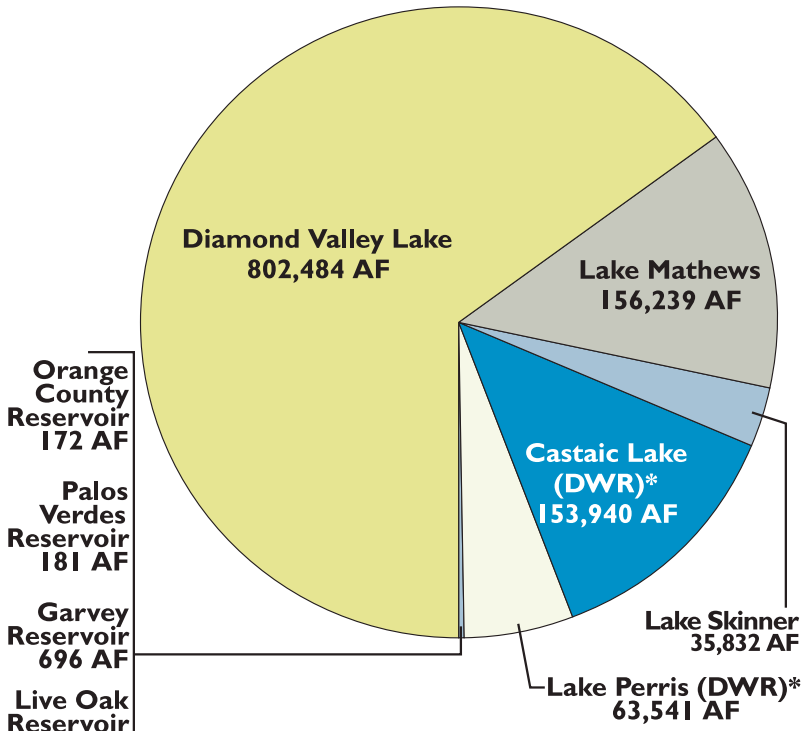


NOTE: Totals include conjunctive use and cyclic storage programs

Metropolitan Water Stored in Metropolitan & DWR Reservoirs in Southern California

Total Storage : 1,201,764 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.

Although 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.

Under 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.

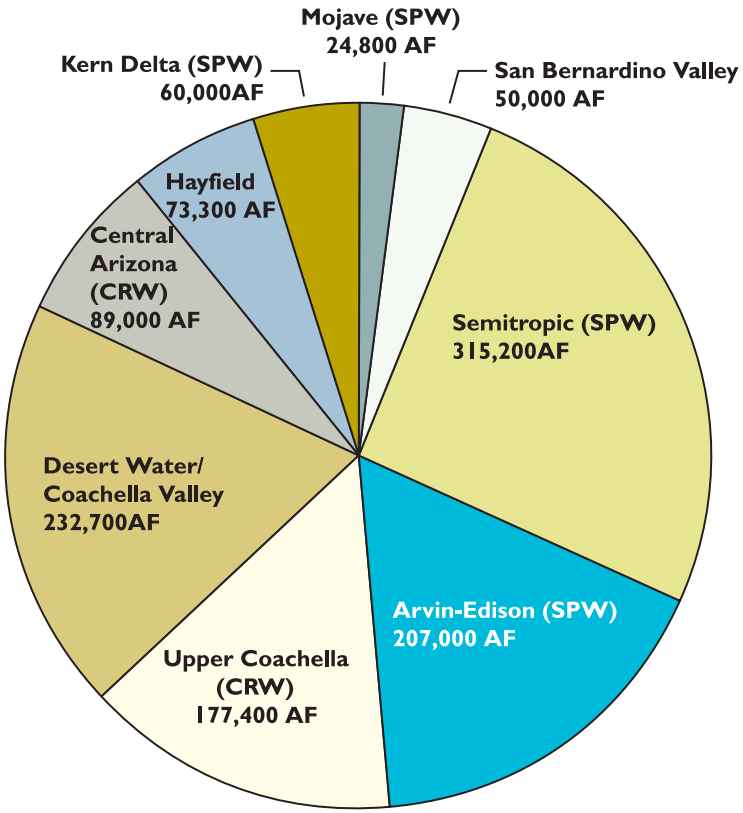
State Water Project Programs

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.

Metropolitan Water Stored in Groundwater Basins Outside its Service Area

As Of November 2005



CRW = Colorado River Water
SPW = State Project Water

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.

Metropolitan'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

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."

Metropolitan 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-

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.

Metropolitan'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.

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.

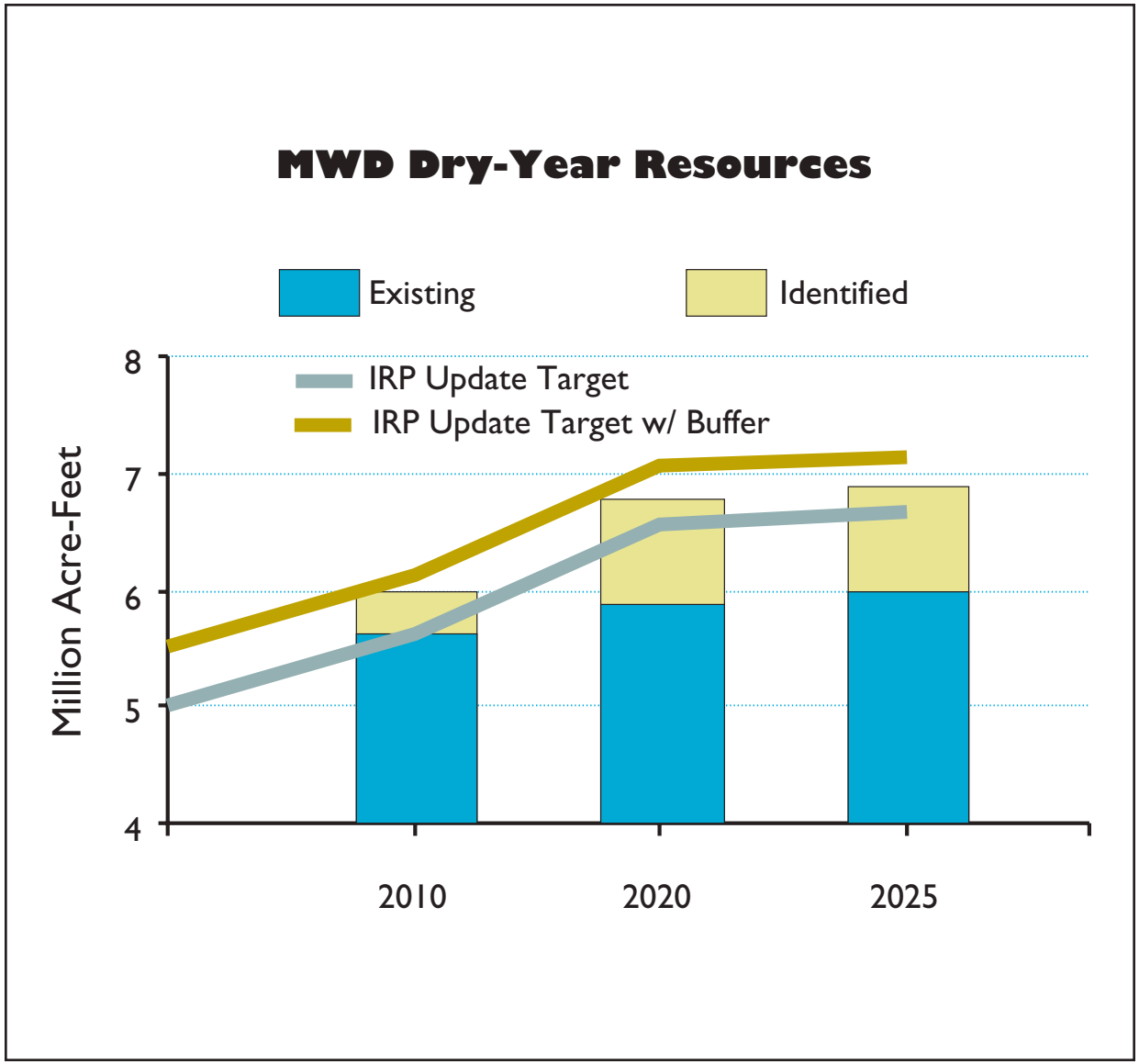
Changed Conditions

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.

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. 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 eco-logic 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 Kumeyyay 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 strollinggarden 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 runoff, erosion control, wildlife habitat, CO_2 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 out 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

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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

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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 Metropolitans 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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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, 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 efficience 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 quanitfy 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.