Annual Progress Report to the California State Legislature

Achievements in Conservation, Recycling and Groundwater Recharge

Metropolitan Water District of Southern California
February 1, 2001

Executive Summary: The Story

This is the first year that the Metropolitan Water District of Southern California has formally reported to the State Legislature on the progress of water resource management programs that include conservation, recycling and groundwater recharge. This information is required annually hereafter by Senate Bill 60, signed into law September 16, 1999, and incorporated into the Metropolitan Water District Act.

Our progress in local resource development continues a legacy of financial commitment and leadership. Metropolitan supports what has become a nationally recognized regional effort to maximize the use of our precious water resources.

Central to all of Metropolitan's new program initiatives is public involvement. Public workshops and comment periods are common to all programs instituted at Metropolitan — from changes in the rate structure to changes in planning strategies.

Metropolitan has become a hub for dialogue on a number of current issues — inviting different perspectives to discuss challenging topics like watershed protection, the potential pitfalls of deregulation and improved water quality.

Continuing this new, beneficial dialogue, Metropolitan suggests a number of proposals for consideration by the State Legislature this year. They include a water quality general obligation bond measure; a new requirement for the regional urban water management plan; and funding for several research topics concerning drinking water safety, water quality and new conservation technologies. Details of these proposals are included in Section Four.

Between the lines of this report — aside from the numbers and charts and bullets — is a serious commitment to prudent water resource management that will continue to grow.

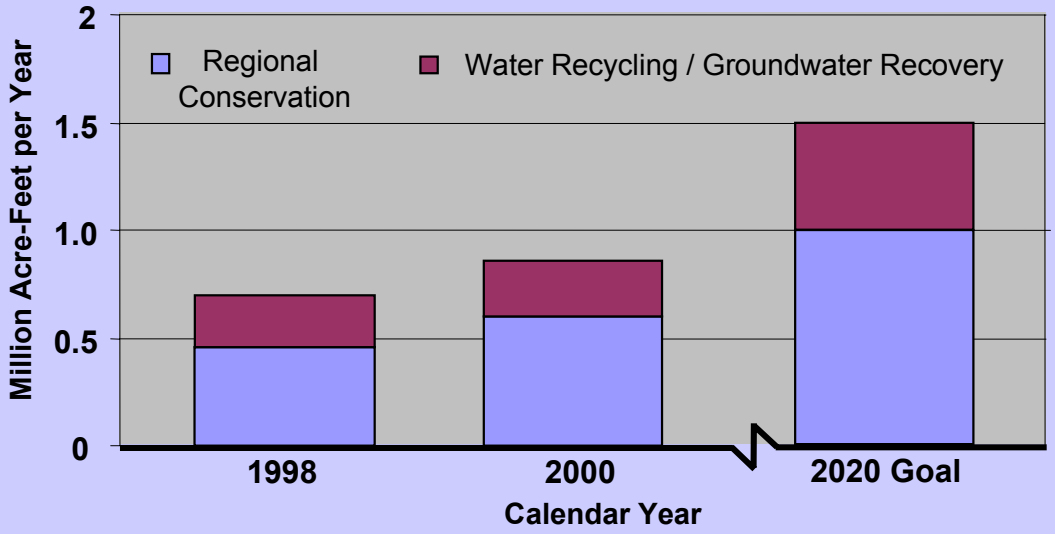
***Sacred Chalice with Ouroboros*, one of two water displays at Metropolitan by designers Paul Hinkley, Jayme Odgers and tile artist Thomas Barter.**

Executive Summary: The Numbers

Metropolitan-Assisted Local Resources			
Conservation	$144 million	To Produce	65,000 AFY*
Recycling	$67 million		70,000 AFY
Groundwater Recovery	$15 million		16,000 AFY

Metropolitan-Assisted Groundwater Programs			
Contractual Storage	$21 million	To Store	275,000
Water Rate Incentives	$145 million		AF

This table lists Metropolitan's cumulative local resources investments to date, and the annual yield produced. These investments represent early milestones in the overall long-term regional water resource development picture, as projected by the Integrated Resources Plan and Strategic Planning Process.



Increase in Total Regional Conservation, Water Recycling and Groundwater Recovery

*** AFY= Acre-feet per year**
An acre-foot is equal to 325,851 gallons

Metropolitan's Service Area

Metropolitan's Service Area

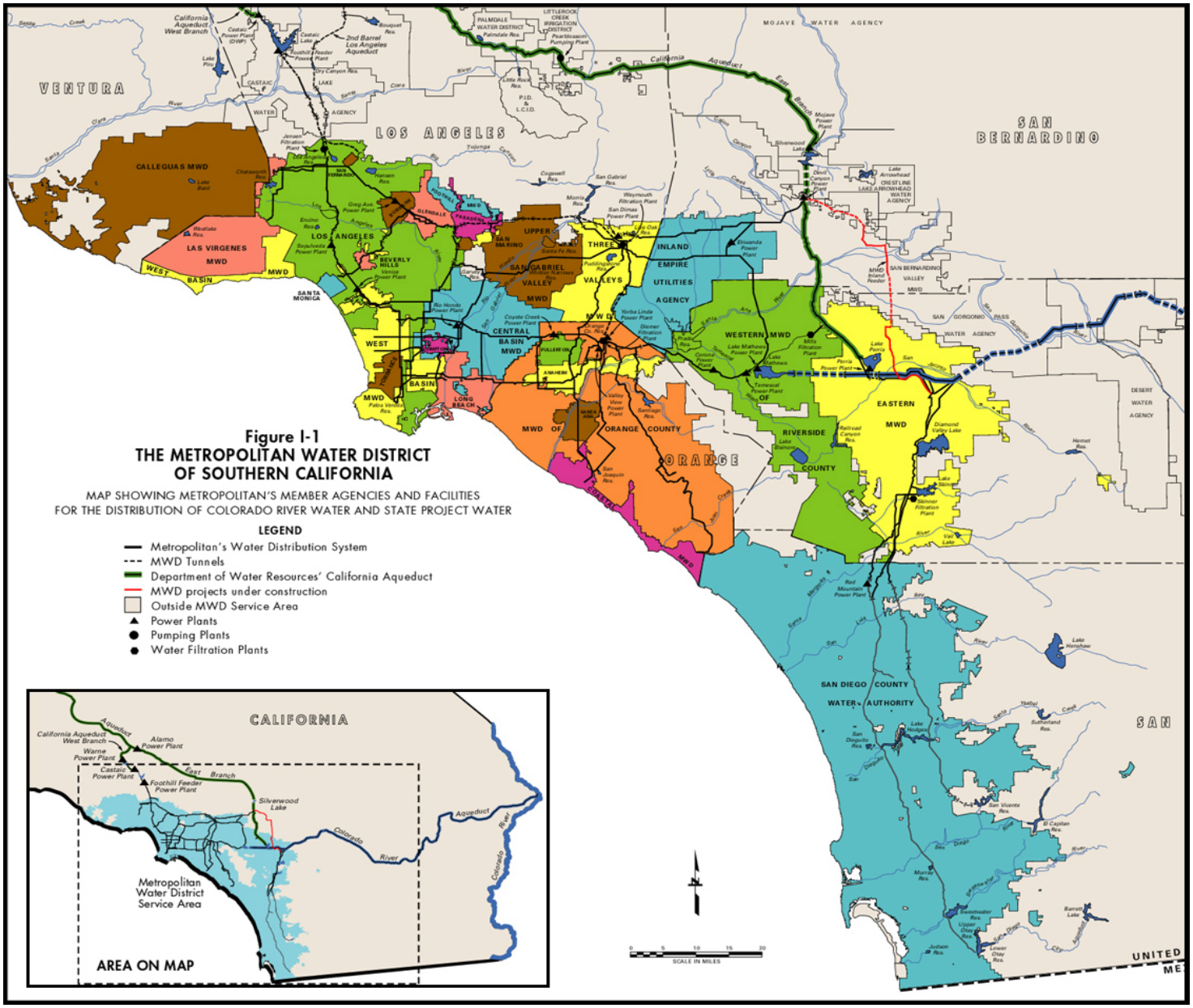


Table of Contents

1. Overview Page 6
   - Metropolitan Water District
     - A Brief History
     - Purpose of This Report
     - Metropolitan's Service Area
     - Timeline of Achievements

2. Investments Page 10
   - Conservation Achievements
     - Guiding Policies
     - Partnering with Agriculture
   - Conservation Credits Program
     - Metropolitan's Hand in Conservation Extends Beyond the Region
   - Conservation Program Highlights
   - Water Recycling
   - Groundwater Recovery
   - Groundwater Recharge/Conjunctive Use
   - Metropolitan Water Stored in Southern California
   - Groundwater Basin Production
     - Forecast Increases for Annual Groundwater Production

3. Policy Principles Page 19
   - Strategic Plan
     - Rate Structure/Water Stewardship Rate
   - Metropolitan Board Policies
   - Water Quality Initiative
     - About Salinity
   - Water Reliability Initiative

4. Program and Policy Development Initiatives Page 23
   - Climate Change Workshop (May 2000)
   - Conservation Program Workshops (year-round)
   - Watershed Activities (year-round)
     - Watersheds Decision Makers Dialogue
     - L.A. & San Gabriel River Watershed Council Study (on going)
   - Metropolitan's Legislative Proposals for 2001

5. Performance Results Page 27
   - Increases in Conservation, Water Recycling and Groundwater Recovery

6. Appendix Page 28
   - Strategic Plan Public Workshop Locations
   - Public Comment Excerpts
   - Metropolitan's Groundwater Storage Principles
   - Ultra-low-flow Toilet Saturation Map
   - Landscape Projects
   - Status of Metropolitan's Conservation Programs
   - Text of Senate Bill 60, September 16, 1999

For additional information, contact Kathy Cole at (619) 650-2642

Overview

Metropolitan Water District

A Brief History

Metropolitan Water District of Southern California is a public agency established under a Legislative act in 1928 to secure imported water supplies. Today Metropolitan serves a population of 17 million people living in six counties from Ventura to San Diego.

So much has changed since Metropolitan's formation--both the landscape and the Southern California mindset. To be a responsible water manager today requires much more than technical oversight of the importation, storage and delivery.

Metropolitan began to support local resource development in the late 1950s with a discounted rate offered for water used to recharge groundwater basins.

Metropolitan's commitment to conservation, recycling and groundwater programs has expanded over the years. The existing investment plan (outlined by the Integrated Resources Plan) is to further expand these programs and expenditures.

Local resource projects are so fundamental to the vision of Metropolitan today, that a "water stewardship" charge has been integrated into a recently adopted proposed water rate structure.

The stewardship charge is a new mechanism for providing a dedicated revenue stream with funds earmarked specifically for local resource programs.

Eloy Torres' mural depicts the history of water in California and is part of the Metropolitan art collection on display at its downtown Los Angeles headquarters.

Metropolitan Water District

Purpose of This Report

This report provides an overview of Metropolitan's accomplishments in 2000 as prescribed by Senate Bill 60, and details the latest steps in an on going exercise of prudent resource management. (Full text of SB60 is included in the Appendix.)

One of the overriding considerations in SB60 is the need to include the public in the development of Metropolitan's programs and policies. While this practice is not new to Metropolitan, it has been viewed as especially important this year because of the strategic planning process that is underway.

For Metropolitan to be responsive to its customers and constituents, the agency had to know what they wanted and expected. Throughout the planning process, Metropolitan's Board of Directors has sought their input and approval.

Another important milestone for Metropolitan this year was the preparation of the 2000 Regional Urban Water Management Plan (RUWMP). This blueprint for managing water resources was influenced by public comment and subsequently adopted. As part of SB60, Metropolitan invited a panel of individuals knowledgeable in the fields of water conservation and sustainability to its public hearing on the RUWMP.

The panel included:

- Mary Ann Dickenson, California Urban Water Conservation Council (CUWCC)
- Earle Hartling, LA County Sanitation District
- Peter MacLaggan, WateReuse Association
- Joseph Grindstaff, Santa Ana Watershed Project Authority
- William Mills, Assoc. of Groundwater Agencies

A copy of the RUWMP report can be obtained by calling the contact number listed at the front of this report.

Overview

Timeline of Achievements

1975

Pre 1960
First Year That Incentives Were Provided for Delivery of Wet Year Supplies to Encourage Groundwater Recharge

1976-1977:
Drought
Metropolitan Initiates Several Conservation Incentive Programs

1980

1981:
Implemented Interruptible Program (Provided a reduced price incentive to encourage storage of surplus water)

1982:
Started Local Projects Program (Spurred Development of Recycled Water Supply Projects)

1985:
Adopted First Regional Urban Water Management Plan (RUWMP)
This is updated every five years

1985

1987-1992:
Drought

1988:
Started Toilet Retrofit Program

Started Conservation Credits Program
(Funding for conservation-related activities)

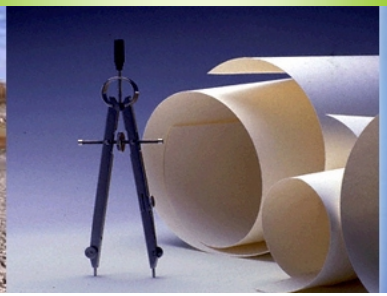
1989:
Implemented Seasonal Storage Program
(Encouraged greater conjunctive use of supplies)

1990

1990:
Adopted RUWMP

1991:
Started Groundwater Recovery Program
(to encourage recovery of degraded groundwater)

Signed MOU Establishing Conservation Best Management Practices (BMPs)


Timeline of Achievements

1990 - 1993

Voluntary Conservation Practices Became Widespread in Southern California

Widespread Implementation of the Toilet and Showerhead Retrofit Program

1995

1995:
Adopted RUWMP

Signed Las Posas North Groundwater Storage Agreement

1996:
Adopted Metropolitan's Integrated Resource Plan (IRP)

1998
Metropolitan Staff Appointed to Serve as Watershed Council Board Liaison

1999

Adopted Water Surplus and Drought Management (WSDM) Plan

SB 60 Signed into Law

Formed Salinity Management Coalition

Adopted Strategic Plan Policy Principles

2000

2000:
Adopted RUWMP

Hosted Watersheds Dialogue Conference

Adopted New Rate Structure Plan, Including Stewardship and Growth Rates

On going Participation in Water Augmentation Study L.A. & San Gabriel Rivers Watershed Council

Hosted Climate Change Workshop

Received Acclaim from the National Drought Policy Commission

2005

2001:
Review of IRP

2002:
Anticipated Implementation of New Rate Structure Plan, Including Stewardship and Growth Rates





Conservation Achievements

Guiding Policies

Metropolitan's conservation policies have their foundation in two documents — Metropolitan's Integrated Resource Plan (IRP) and the Memorandum of Understanding Regarding Urban Water Conservation in California, to which Metropolitan is a signatory.

On paper and in practice, Metropolitan is committed to providing assistance to local water conservation efforts. Over the last decade, Metropolitan and its member agencies have shared costs while investing more than $220 million in regional conservation programs.

Metropolitan's involvement in conservation extends to the greater water community in California. The agency has contributed to the development and coordination of numerous conservation activities throughout the state and has been recognized for its efforts in the form of "Gold Star" certification from the Association of California Water Agencies and several awards from the U.S. Bureau of Reclamation.

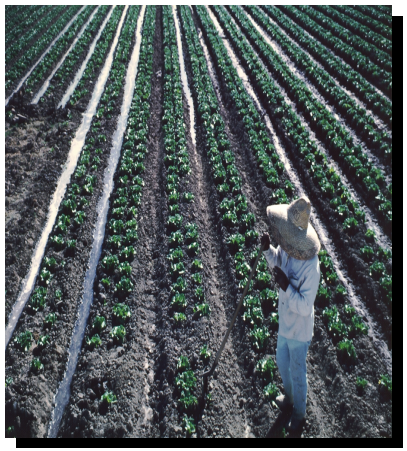
Metropolitan also has been instrumental in the development and continued promotion of legislation that supports water-saving activities.

A summary of conservation activities that Metropolitan has helped to implement in its service area over the past decade is included in the Appendix.

Partnering with Agriculture

Parallel to its urban conservation efforts, Metropolitan embarked on a pioneer agricultural program in 1988 with Imperial Irrigation District (IID). Metropolitan provided the funds to implement fourteen different conservation projects, the last of which IID completed in September 1998. Metropolitan will continue to fully fund the operations and maintenance costs of these projects for at least 35 years. To date, Metropolitan has invested more than $171 million on these projects to conserve more than 106,800 acre-feet of agricultural water every year.

To facilitate the transfer of up to 200,000 acre-feet of conserved agricultural water to urban Southern California, Metropolitan entered into an exchange agreement with San Diego County Water Authority (SDCWA) in 1998. Under this agreement, SDCWA would receive from Metropolitan an amount of water equal to the amount of water conserved by IID under the SDCWA/IID Agreement for Transfer of Conserved Water (1998). Metropolitan would divert the water conserved by IID into Lake Havasu.



Conservation Credits Program: July 1998 to Present

Participating Agencies	
City of Anaheim	
City of Burbank	
Calleguas MWD	
Central Basin MWD	
Coastal MWD	
City of Compton	
Eastern MWD	
Foothill MWD	
City of Fullerton	
City of Glendale	
Inland Empire Utilities Agency	
Las Virgenes MWD	
City of Long Beach	
City of Los Angeles	
MWD of Orange County	
City of Pasadena	
San Diego CWA	
City of San Marino	
City of Santa Ana	
City of Santa Monica	
Three Valleys MWD	
City of Torrance	
Upper San Gabriel Valley MWD	
West Basin MWD	
Western MWD	
Total Credits	**$31,312,690**

The Conservation Credits Program

Metropolitan's Conservation Credits Program provides financial support to member agency conservation programs by paying either $154 per acre-foot of water conserved or one-half of the program cost, whichever is less. This program was initiated in 1988.

Metropolitan's Hand in Conservation Extends Beyond the Region

CUWCC (California Urban Water Conservation Council)
This group is comprised of the signatories to the Conservation Best Management Practices (BMP) and is responsible for guiding the funding, reporting and implementation of BMP requirements. Metropolitan serves on the Executive Steering Committee and various technical committees.

Governor's Advisory Drought Planning Panel
Convened in July 2000 and chaired by the Director of the Department of Water Resources, this group was formed to develop a contingency plan to reduce the impacts of critical water shortages. Metropolitan's Board Chairman Phillip J. Pace was a member of this panel, which is publishing its report in 2001.

Investments

Conservation Program Highlights

Conservation Program Objectives:

1. To **develop programs** that can be implemented by local agencies
2. To **spearhead research** into new opportunities
3. To **quantify benefits** and identify potential for future conservation program expansion

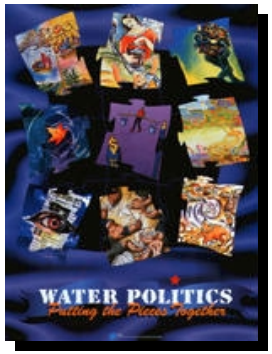
Year 2000 Accomplishments

Hardware Retrofits

- Replacement of more than 200,000 high- volume flush toilets with conservation models; program total to date of 1.6 million (geographic distribution of Metropolitan's saturation rate of these toilets is included in the Appendix)
- Installation of more than 1,800 low-flow showerheads; program total to date of 3.2 million
- Replacement of 7,500 clothes washers with high efficiency models; program total to date of 15,500
- Establishment of a $2.5 million commercial, industrial and institutional program to encourage replacement of fixtures that have the greatest potential for water savings
- Continuation of hotel laundry reduction program in Orange County

Education

- Completion of more than 4,500 residential water-use efficiency surveys; program total to date of more than 57,000
- Expansion of existing landscape training and education programs to include new lesson topics
- Development of a new educational program called, "Thinking More About Using Less" for grades 6 -12 to be initiated in 2001
- Continuation of school education programs including water-related materials to teach students about droughts, conservation, water quality and the physical properties of water



Research

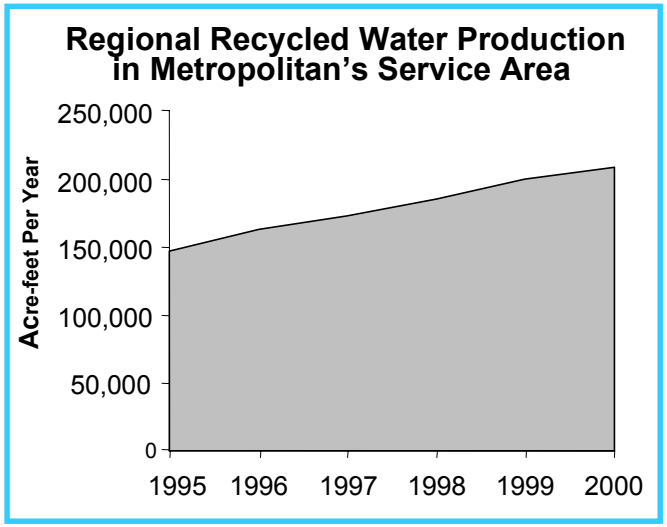
- Funding for research and development projects that include a saturation study in Orange County to determine new potential for conservation

Water Recycling

Local water agencies realized long ago that recycled water was a valuable and potentially inexpensive source of supply. This vision has led to the development of more than 200,000 acre-feet per year of recycled water with a history that dates back to the 1920s. Increasingly tougher requirements for recycled water use, coupled with the need to build more expensive distribution systems, began to challenge the development of recycled water in the 1980s.

For eighteen years, Metropolitan has provided funding for water recycling projects throughout its service area. There are currently 35 recycled water projects in Southern California receiving funds from Metropolitan, and producing about 70,000 acre-feet per year. Also, contracts for 18 additional projects have been issued. To date, Metropolitan has contributed approximately $67 million towards Southland recycled water projects.

In June 1998, Metropolitan established a new Local Resources Program that fosters competitiveness to encourage the development of cost-effective recycled and groundwater recovery projects.



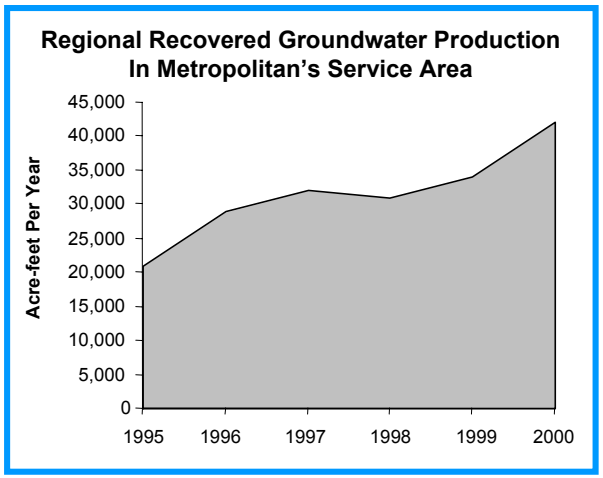
Metropolitan not only supports the use of recycled water for industrial and irrigation purposes, but also its use as a seawater barrier and source of water for groundwater replenishment.

Metropolitan has partnered with seven local water agencies and the State of California to join the U.S. Bureau of Reclamation in a regional planning process called the Southern California Comprehensive Water Reclamation and Reuse Study. The purpose of the six-year study (2000-06) is to identify the long-term potential to match recycled water needs with available resources.

Investments

Groundwater Recovery

The natural reservoirs that lie beneath the Earth's surface are an important storage feature for Southern California. When the water they hold becomes polluted, water agencies have to rely more heavily on imported supplies.



Treatment for degraded groundwater is typically quite costly and can create a whole new set of problems when it comes to proper disposal of the concentrated waste that gets produced during treatment.

Metropolitan has provided funds for groundwater clean-up programs since initiating the Groundwater Recovery Program in 1991. The program's purpose is to strengthen the region's reserves for future droughts or emergency interruptions on the imported water system.

Metropolitan encourages local agencies to treat the recovered water and use it for municipal purposes.
Over the last nine years, Metropolitan has executed 22 agreements to support groundwater recovery projects. Metropolitan's total investment to date is approximately $15 million to produce about 16,000 acre feet of recovered groundwater per year. The region also produces about 19,000 acre-feet per year of recovered groundwater without financial assistance from Metropolitan.

One of the most promising partnerships in this area is the Desalination Research and Innovation Partnership (DRIP). It brings public and private water and power organizations together to look for innovative technologies to desalt groundwater at a reasonable cost.

The Tustin Desalter is one of 22 groundwater recovery projects receiving funding from Metropolitan.

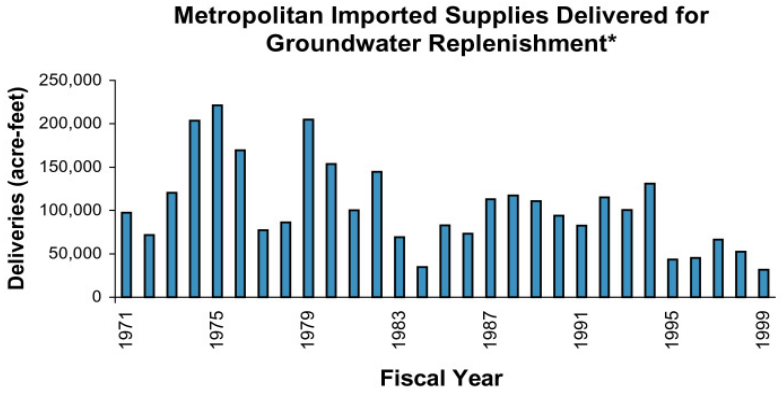
Groundwater Recharge/Conjunctive Use

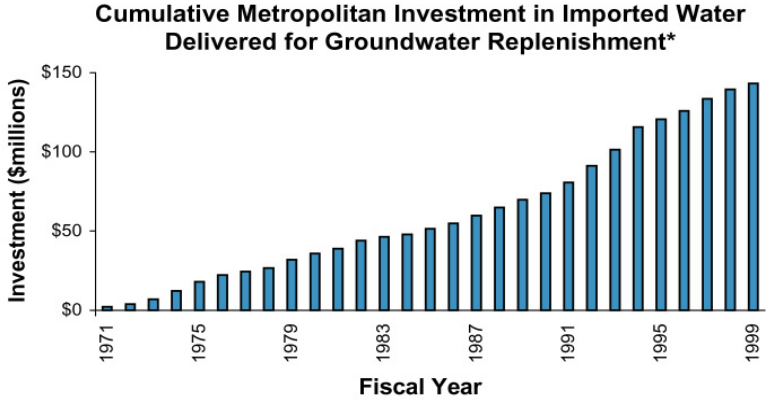
Groundwater basins in Metropolitan's service area yield an average annual 1.3 million acre-feet of supply. The water withdrawn is replenished by both natural processes and engineered methods.

Taking advantage of years with plentiful water supplies for the times when there are shortages is nothing new for Metropolitan. Since the 1950s, Metropolitan's local water management strategy has included conjunctive use of surface water and groundwater sources. Conjunctive use refers to the practice of storing imported surface water in groundwater basins during years when there is an overabundance of supply, for use during times of drought or other unforeseen supply interruptions.

There are many local groundwater storage programs in urban Southern California. Metropolitan encourages conjunctive use by discounting the price of replenishment water delivered for groundwater basins, when supplies are plentiful.

A more detailed explanation of Metropolitan's strategy for regional groundwater storage is found in the Policy Principles section.





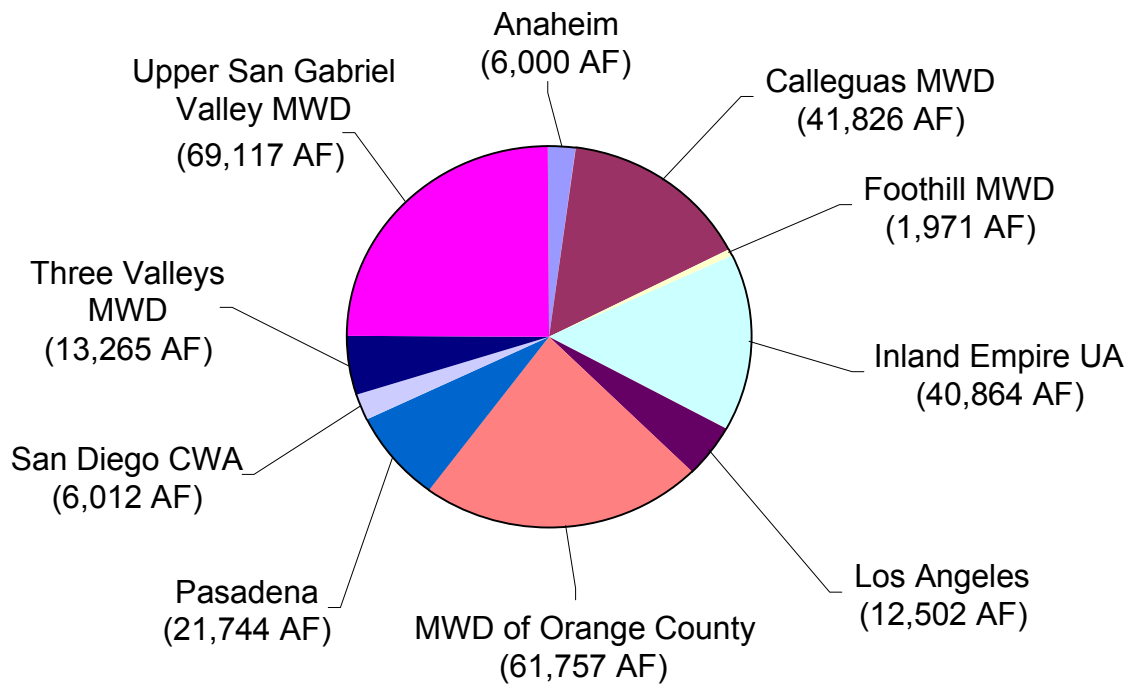
* Does not include delivery of 2,658,268 acre-feet in the period 1949 to 1971; associated Metropolitan discount cannot be readily determined from available data and is not included.

Investments

Metropolitan Water Stored in Southern California

Metropolitan Water Stored in Southern California Groundwater Basins and Local Agency Reservoirs

Total Storage: 275,058 AF
(As of November 30, 2000)



Groundwater Basin Production

Groundwater Basin Clean-up: Another Potential Source of Water

A decade ago, water quality problems in the Southland's groundwater basins raised serious concerns about the ability to sustain normal production. Today, the U.S. Environmental Protection Agency's Superfund program is beginning to show significant progress toward maintaining and increasing Southland groundwater basin production through extensive clean-up programs.

Metropolitan and its member agencies encourage the recharge of groundwater basins and the recovery of degraded groundwater. This joint effort is projected to increase groundwater production by about 262,000 acre-feet per year over the next twenty years.

Forecast Increases in Annual Groundwater Production Due to Basin Remediation (AF/YR)

Groundwater Basin	Forecast Increases in Production
San Fernando	40,000
Orange	60,000
Chino	50,000
West Coast	20,000
Central	25,000
Main San Gabriel	30,000
SDCWA[1]	37,000
Total	**262,000**

1. Cumulative in all basins in San Diego County Water Authority Service Area

Policy Principles

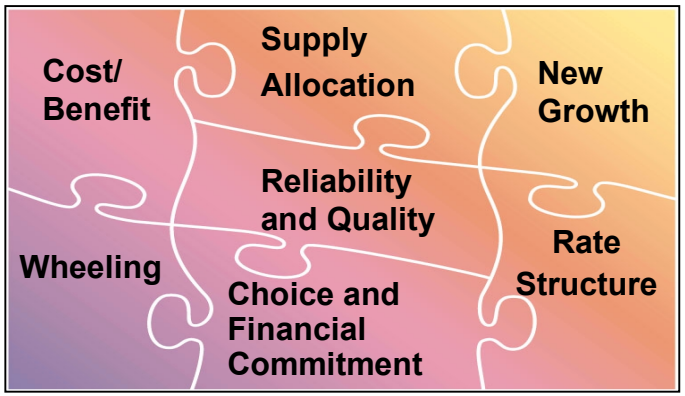
Strategic Plan

Metropolitan has been involved in a Strategic Planning process for more than two years. It is a comprehensive evaluation of how Metropolitan will conduct business and better meet the needs of its customers and constituents. Throughout the process, Metropolitan's Board of Directors has sought extensive public input. *

At the heart of the Strategic Plan and the Board's vision is "choice" — the opportunity for member agencies to manage their supply and demand for water competitively while ensuring reliability, quality and fairness.

Competitive choices, according to the Board's vision, are anchored in responsible stewardship of water resources as mandated by the State Constitution. Public stewardship is supported by Metropolitan to help customers manage market variations, emergencies and drought.

PUTTING THE PIECES TOGETHER



Rate Structure/Water Stewardship Rate

In December 2000, the Board adopted an action plan for a conceptual framework that will offer a fundamental change in the way imported water is sold throughout Southern California.

The framework offers long-term security, water contracts, a water stewardship rate, opportunity for the development of water markets, and a mechanism for dealing with growth.

Long-term security comes as a fixed revenue source to help protect Metropolitan and its member agencies from the fluctuation of sales from year to year, assuring effective water management.

For the first time in the agency's 73-year history, Metropolitan will offer contracts to its members allowing for greater flexibility. A tiered rate structure provides price incentives for the local development of water resources.

A water stewardship rate will provide a dedicated revenue stream to support Metropolitan's continued investment in conservation, water recycling, desalination and groundwater conjunctive use programs. Adoption of the rate structure is expected in March 2002 after a series of public workshops.

* A list of the public workshops for the strategic plan, and excerpts of comments received, is included in the Appendix.

Metropolitan Board Policies

Metropolitan's Board of Directors has adopted a variety of policy principles to address issues of water reliability, quality and fairness. Highlights include:

WATER CONSERVATION

- Support the water use efficiency standards for toilets, showerheads, faucets, and urinals contained in the Federal Energy Policy and Conservation Act of 1992
- Support bill calling for conservation-type drought planning in the RUWMP report

WATER RECYCLING

- Support federal and state proposals to provide financial assistance for water recycling
- Support expansion of the types of recycled water uses consistent with protection of public health
- Support Propositions 12 & 13 to fund ground-water clean-up, recycling and storage programs

WATERSHED MANAGEMENT

- Support federal and state legislative and regulatory proposals to establish watershed management programs
- Support involvement in watershed management programs as a stakeholder

GROUNDWATER MANAGEMENT

- Support legislation that would provide low-interest loans for groundwater treatment plants
- Support legislation that would provide State funding for regional brine disposal projects (brine disposal being a major cost in groundwater treatment)
- Support expansion of regional storage programs per Board principles adopted January 2000 (see Appendix for detailed explanation).

SOURCE WATER-QUALITY PROTECTION

- Support federal and state legislative and regulatory proposals to establish source-water quality protection programs
- Support legislation to assure effective remediation and clean-up of perchlorate, MTBE, other gasoline additives, or other contaminants that have affected groundwater and surface water

CALFED WATER USE EFFICIENCY

- Support water use efficiency strategies for all water use sectors including urban, agricultural, and environmental in the overall CALFED solution

Policy Principles

Water Quality Initiative

Metropolitan has implemented a "Water Quality Initiative" to advance a water quality agenda for Southern California. This initiative is a key component of Metropolitan's supply reliability efforts. At its core is a checklist of water quality needs that drive specific programs and advocate for certain Legislative actions, including:

- Control of salinity in the Delta and Colorado River
- Accelerated banning of MTBE (gasoline additive)
- Clean up of radioactive mine tailings at Moab, Utah, protecting the Colorado River from radioactive seepage
- Protection and maintenance of source-water quality

Protecting Water Quality at the Source So You Can Trust it at the Tap

About Salinity

The management of salt in our drinking water is both a water supply and water quality problem. Water high in salts has limited use in recycling and groundwater management. That is one of the key reasons why a group of Southern California water and wastewater agencies have joined together in the Salinity Management Coalition. This group works together to coordinate salinity management efforts and identify ways to reduce salt levels in imported water sources.

By limiting salts in our water supplies from the Colorado River and Northern California, the Southern California economy and environment both benefit. For every 100 milligrams of salt in our water, the region incurs an additional $100 million in treatment and incidental costs — such as the replacement of plumbing lines that have been corroded by salt.

Water Reliability Initiative

In the spirit of sustainable water resource management, Metropolitan has renewed its call for increased water reliability with a "Water Reliability Initiative." Launched in 2000, the initiative calls for the wise use of resources including imported water supplies.

The primary focus of the initiative is Metropolitan's supplies from the Colorado River and the State Water Project. And while improved reliability is the main objective, improved water quality is a tangential goal. The two are inter-related because poor water quality depletes the pool of available water resources. When water is scarce due to drought, high quality water is even more important because poor quality water is difficult to recycle.

Support for California's Colorado River Water Use Plan (which will allow the state to live within its legal entitlement of Colorado River water), as well as support for operational changes and quality protection for water coming from Northern California, are critical elements of the Southland's future water reliability outlook.

West Dam View of Diamond Valley Lake (DVL), the Southland's newest and largest reservoir. When completely filled, DVL will double the storage capacity for Southern California and provide six months of emergency supply.

Reliability Comes With Cooperation

Metropolitan holds positions with many policy-making groups to voice the Southland's concerns and contribute towards solutions.

- Co-chair of the National Drought Council
- Official liaison to the Board of Directors for the Los Angeles and San Gabriel Rivers Watershed Council
- Co-founder with member agencies of Southern California Water Dialogue Group
- Vice Chair of the Conservation Division of the American Water Works Association
- Appointed committee member for national advisory panel on MTBE

Climate Change Workshop

In May 2000, the Metropolitan Water District's Board of Directors hosted internationally known experts on climate change to discuss their predictions of a 20 to 30 year potential shift in weather patterns based on global warming trends. The scientists, in a forum that received widespread news coverage, warned that the time to plan for the consequences of climate change is now.

That same month, Metropolitan's drought-proofing efforts received acclaim in the National Drought Policy Commission report issued to the President and U.S. Congress. The convergence of these two events in a single month point to the fact that Metropolitan's considerable contribution to conservation, recycling and other local resource programs has put the agency on sound footing for the challenges that may lie ahead.

San Luis Reservoir during drought.

"The six-county, multi-municipal Metropolitan Water District of Southern California incorporates drought planning and preparedness in its comprehensive Integrated Resources Plan and Water Surplus and Demand Management Plan.

Testimony at our hearing in Los Angeles noted that the District emphasizes citizen and customer participation in water conservation as well as long-term water supply and resource management programs for a region receiving 10 to 15 inches of rainfall in an average year.

Metropolitan's plans ensure reliable water supplies for more than 16 million people despite weather, regulatory or disaster-based drought pressures."

Excerpted from May 2000 report by the National Drought Policy Commission that is the basis for federal drought policy.

Conservation Program Workshops

Water Awareness Month

Metropolitan hosted a Water Awareness Month open house and extended invitations to local businesses to come to the District's headquarters to learn about low-water-use plants and the latest water-efficient fixtures. Elementary and high school education materials were also on display.

Commercial/Industrial/institutional (CII) Conservation Workshops

Metropolitan held seven workshops for member agency conservation coordinators, plumbers, facilities managers, and field inspectors on Sloan toilet valves for commercial building installations. Participants were taught how the valves function and how to adapt them for greater efficiency.

Presentations on the CII region-wide rebate program were given to many organizations, including the Coin Laundry Association and the American Professional Energy Managers.

Conservation Workgroup Meetings

Conservation coordinators from a number of member agencies developed a "Water Use Efficiency Statement of Agreement." This document recommends programmatic guidelines for inclusion in Metropolitan's Strategic Plan and considerations for the conservation element of a proposed water stewardship rate.

Technical Workshops

Metropolitan periodically holds technical workshops for member agency conservation coordinators to provide updates on new conservation devices, pilot projects, research projects or new program approaches.

California Urban Water Conservation Council

In addition to its role on CUWCC's governing board, Metropolitan has historically provided staff time and funding to support CUWCC's efforts. Metropolitan staff sit on the following governing committees:

Steering, Plenary, Landscape, Commercial, Industrial and Institutional, Measurement and Evaluation, and Reporting

Watershed Activities

Watershed Decision Makers Dialogue

Metropolitan hosted a Watersheds Decision Makers Dialogue in November 2000. The conference brought together land use and water decision makers, elected officials and top appointees to discover areas of common interest and opportunity.

State Senator Sheila Kuehl was the keynote speaker on the two-day agenda that included legislative perspectives, resource agency program overviews, success stories from both Northern and Southern California watersheds, and practical ways to meet the emerging stormwater pollution regulations.

Comments from conference attendees are included in the Appendix.

State Senator Sheila Kuehl addresses the need for coordinated leadership to solve California's watershed challenges.

L.A. & San Gabriel Rivers Watershed Council Water Augmentation Study

Metropolitan is currently participating in a Water Augmentation Study initiated by the Los Angeles and San Gabriel Rivers Watershed Council. The study looks at how to both augment water quantity and improve water quality in the watershed.

Metropolitan has embraced watershed issues as a stakeholder and is a member of the Los Angeles and San Gabriel Rivers Watershed Council and serves as a liaison to their Board of Directors.

Metropolitan's Legislative Proposals for 2001

SB60 requires that the report to the Legislature include any Metropolitan recommendations for actions with regard to policy or budget matters. This is to facilitate the shared goals of increased emphasis on cost-effective conservation, recycling and groundwater recharge.

Metropolitan seeks Legislative sponsorship for the following proposals:

A WATER QUALITY GENERAL OBLIGATION BOND MEASURE.
This is proposed for the June or November 2002 ballots to provide funds to ensure safe drinking water for future generations and to improve consumer confidence in public drinking water supplies.

NEW REQUIREMENT FOR THE URBAN WATER MANAGEMENT PLAN.
Water agencies would be required to include information on the relationship of source water quality to supply reliability. This will focus greater attention on the need for source water protection.

SECURE STATE FUNDING FOR R & D OF NEW WATER CONSERVATION TECHNOLOGIES AND BEST MANAGEMENT PRACTICES.
This will focus primarily on the commercial and industrial sectors.

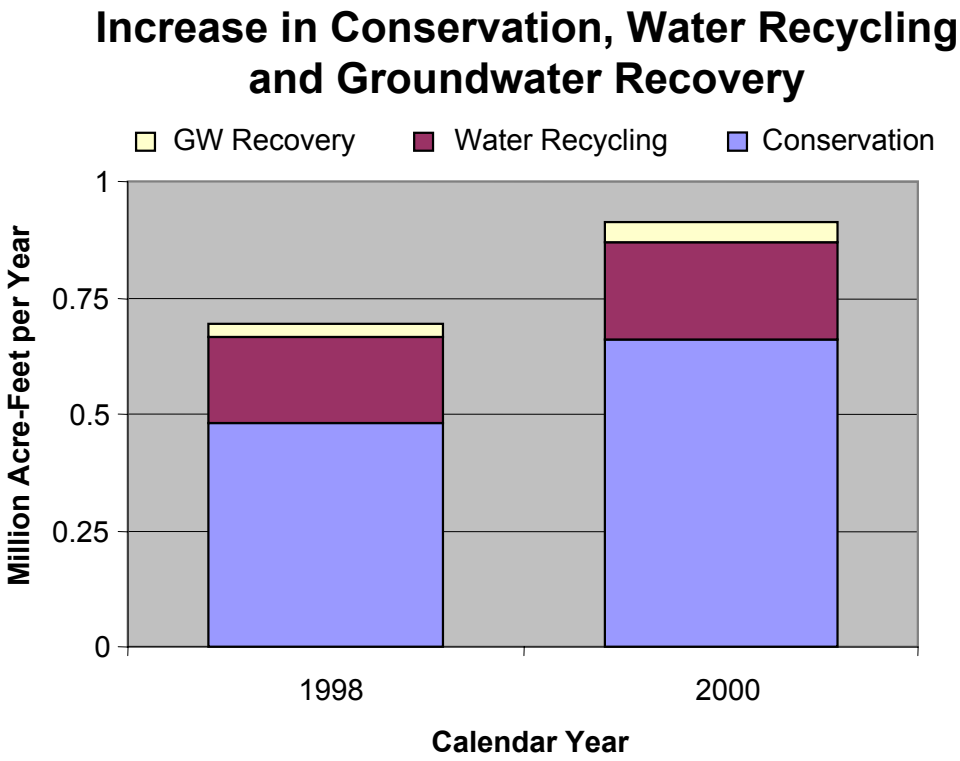
FUNDING FOR A TWO-YEAR UNIVERSITY OF CALIFORNIA RESEARCH STUDY.
The study will evaluate traditional centralized drinking water treatment methods and the alternative distribution of drinking water through bottled water and home treatment systems. The results of the study could be used to guide state policy and expenditure of public funds to ensure safe drinking water.

FUNDING FOR THE IMPLEMENTATION OF MTBE MANAGEMENT SOLUTIONS.
Funding will be sought to implement solutions to MTBE contamination and to perform feasibility studies on proposed solutions for pathogen problems arising from body-contact recreation at Lake Perris.

Performance Results

Increases in Conservation, Water Recycling & Groundwater Recovery

SB 60, SEC. 3/ Section 130.5 (a) (2) added to the Metropolitan Water District Act:
It is the intent of the Legislature that the Metropolitan Water District of Southern California expand water conservation, water recycling, and groundwater recovery efforts.



Strategic Plan Public Workshop Locations (Year 2000)

May 16
Calleguas MWD
Thousand Oaks, CA

May 18
Foothill MWD
La Canada Flintridge, CA

June 1
Las Virgenes MWD
Calabasas, CA

June 7
Three Valleys MWD
Upper San Gabriel MWD
Irwindale, CA

June 13
Metropolitan Water District
Los Angeles, CA

June 14
West Basin Recycling Plant
Hosted by West Basin Municipal Water District
and Central Basin Municipal Water District
El Segundo, CA

June 15
MWD Mills Filtration Plant
Hosted by Eastern Municipal Water District and
Western Municipal Water District
Riverside, CA

June 20
Municipal Water District of Orange County
Fountain Valley, CA

June 21
Central Basin MWD
Whittier, CA

June 27
Inland Empire Utilities Agency
Hosted by Cucamonga County Water District
Rancho Cucamonga, CA

June 28
San Diego County Water Authority
Helix Water District
La Mesa, CA

Appendix

Public Comment Excerpts

Public Comments on the Regional Urban Water Management Plan at the November 13, 2000 Public Hearing

"The Metropolitan Urban Water Management Plan, especially the water recycling component -- we were pleased to see it in there in such detail. …Metropolitan funding in conjunction with the United States Bureau of Reclamation, Title 16 funding, low interest loans from the State through Proposition 13 and 204 have allowed a number of projects that were not able to go ahead…to be completed in our service area, therefore decreasing the need for imported water supplies."

— Earle Hartling, Water Recycling Coordinator, Los Angeles County Sanitation Districts

"On behalf of the Board of Directors [of WateReuse Association] I wish to thank Metropolitan very much for the leadership provided by Metropolitan Water District, its members, their customers, making water recycling a reality in Southern California…I had the pleasure to serve on the local resources review committee for the last round of funding and there were some things that came out of that program that are worth mentioning and are really meritorious, perhaps a model for CALFED and others that want increased recycling throughout California…"

— Peter MacLaggan on behalf of WateReuse Association

Public Comments at the December 12, 2000 Strategic Plan Workshop

"We are very interested as we have been for many years in water and we would like to alert you to keep us informed in this process during this next year. We are also participating with the California Water Dialogue Group that meets here at Met and would like to continue to be very much involved."

— Hazel Scotto, League of Women Voters

"Thank you, I am the executive director for policy for the Mono Lake Committee and want to urge you to adopt the rate structure action plan today. . . I think that it's wonderful that the rate structure plan lays out the various elements that you will address. We will be particularly watching for the elements that bring in the environmental component as you discuss how to also provide water in a reliable way . . . We will also be looking carefully at the capacity for encouraging the investment of other agencies regionally, nationally, and at the state level in multiple benefit projects that come from your investment in water. . . We will also be looking at the impact of the rate structure on other areas, on other parts of California and other parts of the western states. These are the interests that the Mono Lake Committee has and we look forward to working with you.
— Frances Spivy-Weber, Executive Director, Mono Lake Committee

Public Comment Excerpts

Public Comments at the December 12, 2000 Strategic Plan Workshop (continued)

"Education for Sustainable Living thanks you all who have worked to developing the Rate Structure Action Plan, we believe that the proposed Rate Structure Action Plan will support better resource management in Southern California and providing strong price signals for efficient use of water by encouraging the development of local resources and conjunctive use."

— Herley Jim Bowling - Coordinator for Education for Sustainable Living

"The Chamber has followed its [Metropolitan's] changes to the Plan and is thankful to the MWD Board for allowing the public to participate in the Plan's development. The new Rate Structure creates an incentive system for member agencies to develop local resources and conjunctive use programs while at the same time, supporting continued investment and water quality reliability, recycling, conservation, and ocean desalination. …The Plan is a fair plan, efficient, and flexible. …I ask that the Board continue to seek public guidance as the process of the new rate structure is adopted and the details are flushed out over the next year."

— Juan R. Gonzalez, Los Angeles Area Chamber of Commerce

"We are very happy to see that the Board has worked very close with the member agencies and be involved with the public in the process and we hope that this will continue in developing the details of the Plan. …It encourages investment in water conservation and the development of local resources and these are important in supplementing existing water resources and allows member agencies the flexible to choose the services in the combination that fits their needs and pay accordingly. …So we support the plan and we urge the Board to adopt it and to continue to allow the public to participate."

— Carolyn Casavan, Valley Industry and Commerce Association

"…I think you have an opportunity where you are trying to step ahead before we go into our next drought, and I do support the basic terms of your rate restructure, especially the water stewardship charge. …I hope you include us [in the environment growth community] who have worked with you up to this point on the Strategic Plan… We also appreciate that you are working with us now."

— Conner Everts, POWER

Appendix

Public Comment Excerpts

Public Comments at the December 12, 2000 Strategic Plan Workshop (continued)

"The Central City Association of Los Angeles strongly supports the Rate Structure Plan that would take effect on January 1, 2002; we would like to thank the MWD Board and its member agencies for allowing the public and business organizations to play a role on the crafting of the proposed rate structure. …This Plan has sound environmental controls that would encourage funding of conservation while also examining the feasibility of water recycling and groundwater management systems. …This new Plan would ensure water quality where it is more important—at the source. The public wants to be assured that their water quality is best. This plan sends a message that the MWD is serious—not just about cost, but more importantly about water quality."

— Victor M. Franco, Deputy Director of Legislature Affairs, Central City Association:

Public Comments on Watersheds Decision Makers Workshop

"Many thanks for your continuing support for the Watershed Council and most especially for the Watershed Dialogue Conference held at your headquarters building last week. …the conference was a huge success. …I am anxious to continue our conversation about how best to build on the outreach program you have begun, and to help spread the word. It is a delight working with you and your organization. Thank you, again, for being there, and being so supportive of the work that we mutually care about."

— Dorothy Green, President, The Los Angeles & San Gabriel Rivers Watershed Council, in a December 5, 2000 letter to General Manager Ron Gastelum

Metropolitan's Groundwater Storage Principles

Regional Benefit - Groundwater storage programs must provide regional benefits to increase dry-year supply [in accordance with the board's Water Surplus and Drought Management Plan] and reduce capital costs associated with Metropolitan's distribution system. Benefits must outweigh the risks involved with developing the program.

Partnership - Groundwater storage programs must have strong local support in order to be successful. Partnership might also involve coordination of funds from other sources (e.g., state/federal funds).

Address Local Needs - When developing groundwater storage programs, Metropolitan must consider the individual needs of the groundwater basin and local communities. Programs should consider issues such as water quality, reliability of supply financial benefits and groundwater level.

No Negative Water Supply or Water Quality Impact - Groundwater storage programs should be designed so there are no negative water quality or supply reliability impacts to Metropolitan's member agencies.

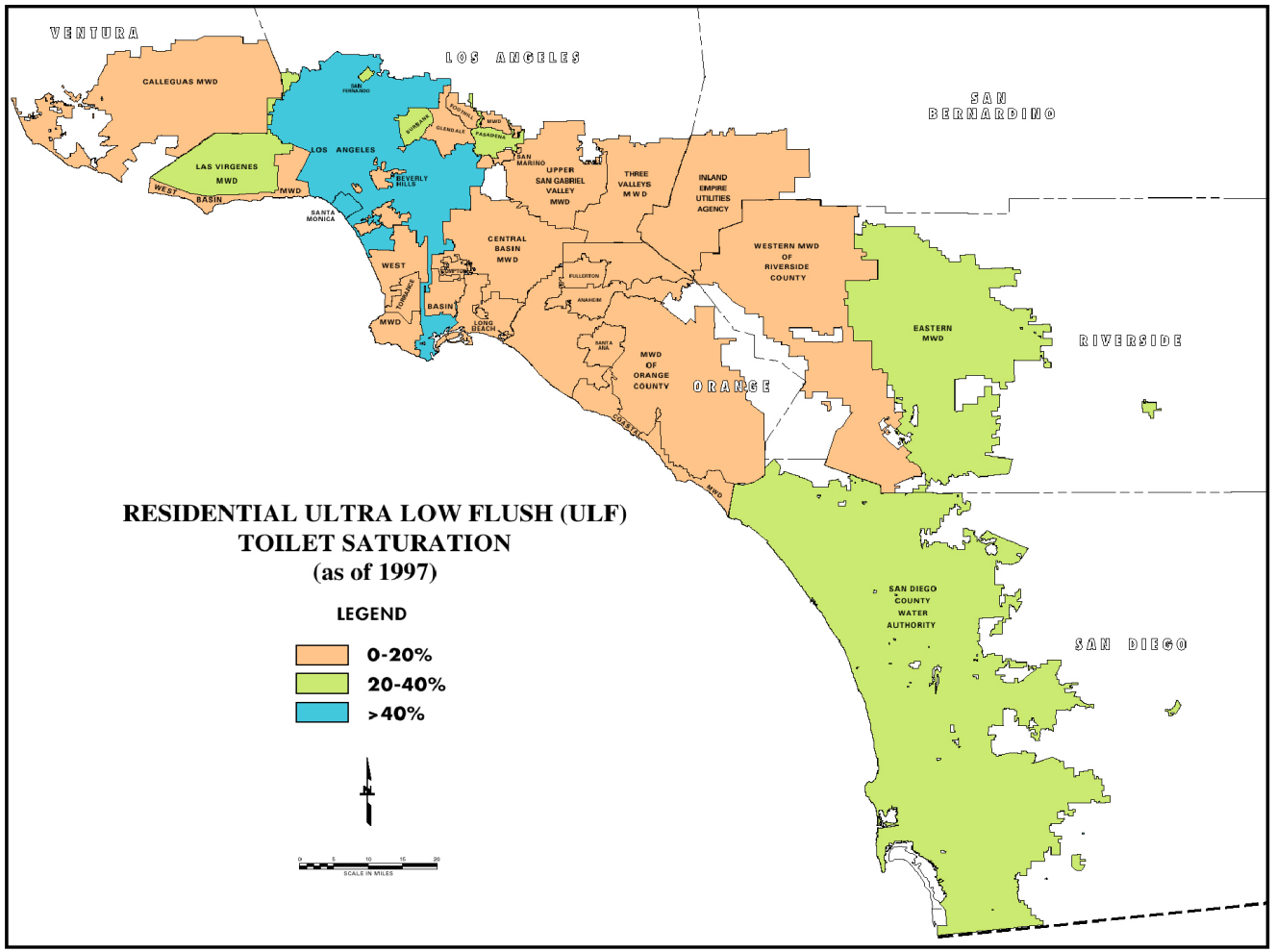
Financial Integrity - Programs should ensure the financial integrity of Metropolitan and its member agencies consistent with the Strategic Plan Policy Principles (Principles) which were approved by the Board on December 14, 1999. The Principles will be included in a new Strategic Plan to be adopted next year. Investments made by Metropolitan for storage will not be used by local agencies to reduce their demands for Metropolitan's imported supply in a manner that threatens financial integrity. Participating member agencies would commit to the purchase of fixed amounts of imported water from Metropolitan.

Phased Approach - Groundwater storage programs should be implemented in phases. At first, smaller-scale programs should be designed to meet overlying demand in lieu of Metropolitan's surface deliveries. As the programs are operated, levels of trust can be established and technical issues resolved. If successful, these programs can be expanded to the point where groundwater can be exported to other parts of the service area.

Shared Risk - There are risks associated with developing any water resource program, including groundwater storage. Metropolitan should be willing to share the appropriate risk of implementing groundwater storage programs with local entities to the extent benefits outweigh the risks.

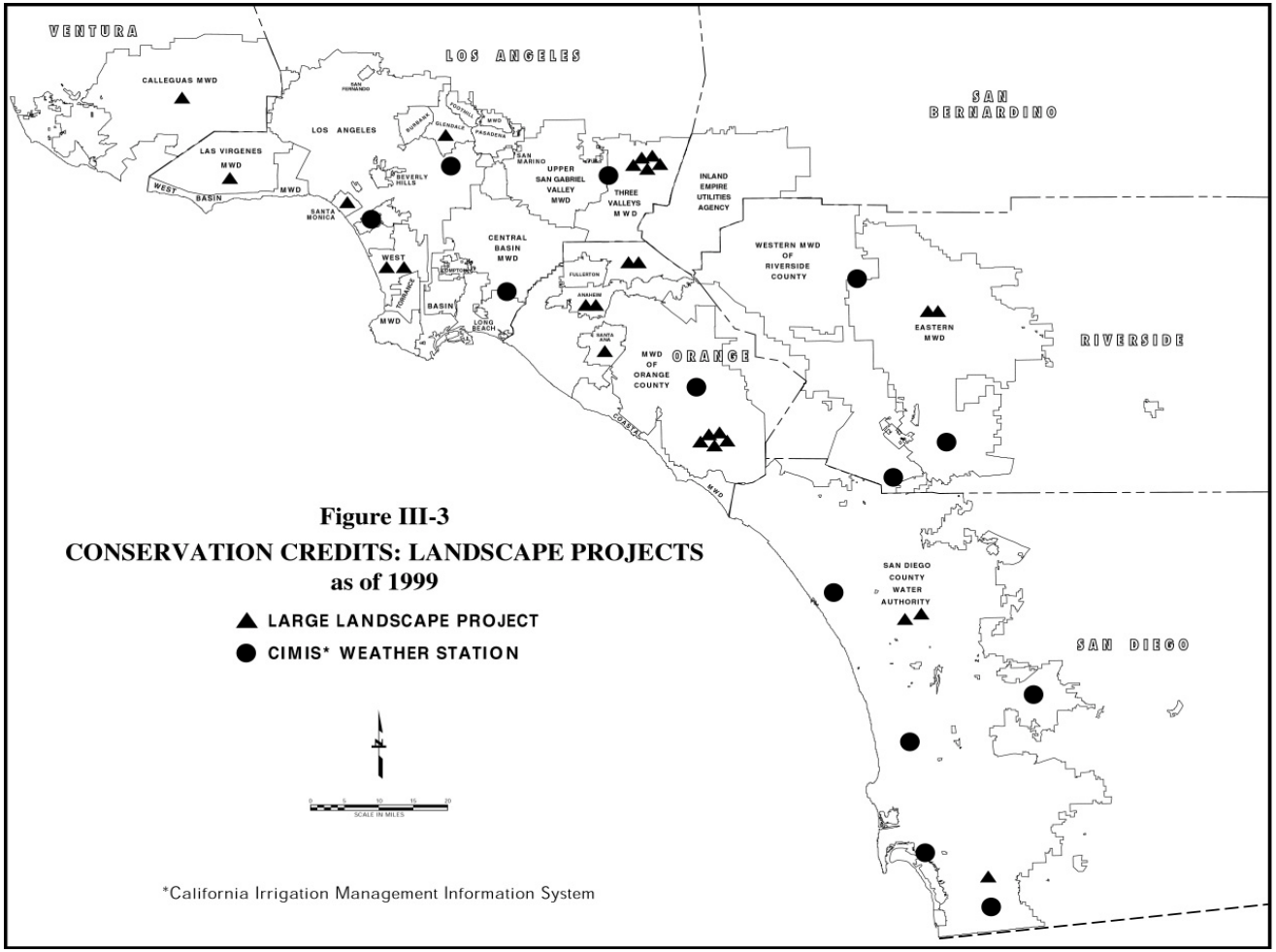
Appendix

Ultra-Low-Flush Toilet Saturation



Saturation is the term used to describe the percentage of potential toilet retrofit locations that have actually exchanged existing toilets for ultra-low-flush models. For example, if there is a 60 percent saturation in an area, that means that 60 percent of all homes or businesses with non-conserving toilets have had them replaced with water-conserving models, leaving 40 percent still to make a change.

Landscape Projects



Metropolitan offers financial assistance to its member agencies for the purchase and installation of landscape retrofit equipment that saves water and improves irrigation efficiency. Landscape retrofits have included moisture sensors, controller upgrades and centralized computer-controlled irrigation systems.

To support the retrofit program, Metropolitan also funds, develops and coordinates training and education programs for landscape workers and professionals.

Appendix

Appendix

Status of Metropolitan's Conservation Programs

BMP Number	BMP Name	Metropolitan Program Description	Regional Program Status	Quantities and Dollars Through 6/30/2000	
1	Residential Water Surveys	financial support for surveys, retrofits,	SF Surveys	55,925	$1,654,387
		and research & development	MF Surveys	1,809	$75,623
			Flappers	1,362	$6,129
			Toilet Displacement Devices installed	16,885	$53,638
			Toilet Displacement Devices distributed	752,410	$1,222,666
			Toilet Leak Detection, Dye Tablets Distributed	356,337	$17,817
			Residential R&D (projects)	8	$299,799
2	Residential Plumbing Retrofits	financial support for retrofits and	Low Flow Showerheads installed	101,791	$487,547
		distributions	Low Flow Showerheads distributed	2,856,836	$11,879,583
			Faucet Aerators installed	7,082	$7,082
			Faucet Aerators distributed	197,710	$197,710
3	System Water Audits, Leak Detection	Distribution System Leak Detection Audits	MWD surveys own pipes & aqueducts	annually	$2,800,000
			MWD surveys pipes & aqueducts for member agencies	6	$280,000
4	Metering and Commodity Rates	all connections metered		N/A	yes
5	Large Landscape	financial support for retrofits, surveys,	Audits Conducted	1,305	$613,379
		education, and research & development	Moisture Sensors	499	$132,329
			Irrigation Controllers	45	$279,406
			Central Controllers	4	$462,664
			Protector del Agua Graduates	5,020	$574,874
			PDA: Plant Class Graduates	1,160	$34,920
			PDA: Residential Graduates	2,275	$25,407
			Landscape Education	24	$45,485
			Circuit Rider Program (cities)	240	$162,250
			Landscape R&D (projects)	10	$278,558
6	High Efficiency Washing Machines	financial support for rebates	Machines Placed - Member Agencies	9,141	$296,680
			Machines Placed - Energy Utilities	3,125	$109,375
7	Public Information	materials & programs provided		N/A	$10,678,160
8	School Education	full range of school curricula		N/A	$6,034,157
9	Commercial, Industrial, Institutional	financial support for retrofits, surveys,	ULFTs	26,000	$1,560,000
		workshops, and research & development	Urinals	500	$37,556
			Flush Valve Kits	185	$2,775
			Cooling Tower Retrofits	167	$83,500
			Clothes Washer Rebates	1,852	$185,200
			Surveys	905	$650,000
			Workshops on Com. Retrofits	7	$7,000
			CII R&D (projects)	10	$325,071
10	Wholesale Agency Assistance	financial support and assistance provided for BMPs 1-9 and 11-14		N/A	See Total Below
11	Conservation Pricing	Commodity rate structure in place		N/A	yes
12	Conservation Coordinator	staff size has varied from 12 to 23 people		N/A	$8,000,000
13	Water Waste Prohibition	Exempt, but acts as clearinghouse for information and example ordinances for its member agencies		N/A	N/A
14	Residential ULFT Replacements	financial support for retrofits and rebates	Toilets installed	1,618,481	$94,579,438
			Total Spent by Metropolitan Water District >>		**$144,140,165**

BILL NUMBER: SB 60 CHAPTERED BILL TEXT

CHAPTER 415
FILED WITH SECRETARY OF STATE SEPTEMBER 16, 1999
APPROVED BY GOVERNOR SEPTEMBER 16, 1999
PASSED THE ASSEMBLY AUGUST 31, 1999
PASSED THE SENATE MAY 6, 1999
INTRODUCED BY Senator Hayden

DECEMBER 7, 1998

An act to add Sections 126.5, 126.7, 130.5, and 130.7 to the Metropolitan Water District Act (Chapter 209 of the Statutes of 1969), relating to the Metropolitan Water District of Southern California.

LEGISLATIVE COUNSEL'S DIGEST

SB 60, Hayden. Metropolitan Water District of Southern California.

(1) The Metropolitan Water District Act authorizes the formation of metropolitan water districts and specifies the powers and purposes of a district.

This bill would require the Metropolitan Water District of Southern California to place increased emphasis on sustainable, environmentally sound, and cost-effective water conservation, recycling, and groundwater storage and replenishment measures, as prescribed, and, commencing February 1, 2001, to prepare and submit to the Legislature a prescribed annual report relating to water conservation. The bill would make related legislative findings and declarations.

The bill would require the district, in cooperation with specified entities, to 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 stormwater runoff from these rivers.

The bill would prohibit the district, and its member public agencies, from expending any public money for contracting with any private entity or person to undertake research or investigations with regard to the personal backgrounds or the statements of economic interest of, or the campaign contributions made to, elected officials who vote on public policies affecting the district, or advocacy groups or interested parties who may have matters pending before the board of the district or its member public agencies.

The bill would require the district to establish and operate an Office of Ethics and to adopt rules relating to internal disclosure, lobbying, conflicts of interest, contracts, campaign contributions, and ethics for application to its board members, officers, and employees, as prescribed. The rules would be required to address certain matters and would be required, for any association of individuals or entities that includes board members, officers, or employees of the district, or of a member public agency, which association is known by a name other than the Metropolitan Water District of Southern California or the name of a member public agency of the district, to prohibit any association structure or identification that is likely to mislead the public as to the association's true identity, its source of funding, or its purpose.

The bill would require the office to adopt those rules for approval by the board of directors, to educate the board, staff, and contractors concerning those rules, and to investigate complaints concerning the violation of those rules. The bill would require the office to propose, and the board to adopt, a schedule of penalties for violations of those rules by board members, officers, staff, or contractors. The bill would prescribe related matters.

By imposing additional duties on the district, the bill would impose a state-mandated local program. (2) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 126.5 is added to the Metropolitan Water District Act (Chapter 209 of the Statutes of 1969), to read: 126.5. (a) The Metropolitan Water District of Southern California and its member public agencies may not expend any public money for contracting with any private entity or person to undertake research or investigations with regard to the personal backgrounds or the statements of economic interest of, or the campaign contributions made to, elected officials who vote on public policies affecting the Metropolitan Water District of Southern California, or advocacy groups or interested parties who may have matters pending before the board of the Metropolitan Water District of Southern California or its member public agencies.

(b) Nothing in this section prevents any board member, officer, or employee of the Metropolitan Water District of Southern California or of a member public agency of that district from exercising the right to obtain public records pursuant to Chapter 3.5 (commencing with Section 6250) of Division 7 of Title 1 of the Government Code. SEC. 2. Section 126.7 is added to the Metropolitan Water District Act (Chapter 209 of the Statutes of 1969), to read: 126.7. (a) The Metropolitan Water District of Southern California shall establish and operate an Office of Ethics and adopt rules relating to internal disclosure, lobbying, conflicts of interest, contracts, campaign contributions, and ethics for application to its board members, officers, and employees consistent with the intent and spirit of the laws and regulations of the Los Angeles City Ethics Commission, the Fair Political Practices Commission, and the Los Angeles County Metropolitan Transportation Authority.

(b) The rules described in subdivision (a) shall address, and seek to avoid potential ethical abuses relating to, all of the following matters:

(1) The direct and indirect business relationships between board members, contractors, and vendors, and between board members and officers or employees of member public agencies.

(2) The solicitation of campaign contributions by board members, officers, or employees and the receipt of contributions from bidders, contractors, or subcontractors.

(3) Public notice and approval procedures for contracts of fifty thousand dollars ($50,000) or more.

(c) (1) The office shall operate as an independent entity that is not subject to political influence and shall be staffed with professional, qualified persons.

(2) The office shall adopt the rules described in subdivision (a) for approval by the board, educate the board, staff, contractors, and subcontractors concerning those rules, and shall investigate complaints concerning the violation of those rules.

(3) The office shall adopt procedures for protecting the confidentiality of sources, the job security of "whistle blowers," and the due process rights of the accused.

(d) Subject to paragraph (3) of subdivision (c), the office shall make available to the public the results of the investigations that it undertakes.

(e) The office shall propose, and the board shall adopt, a schedule of penalties for violations of the rules described in subdivision (a) by board members, officers, staff, or contractors.

(f) For any association of individuals or entities that includes board members, officers, or employees of the Metropolitan Water District of Southern California or of a member public agency of that district that is known by a name other than the Metropolitan Water District of Southern California or the name of a member public agency of the district, the rules of ethics shall prohibit any association structure or identification that is likely to mislead the public as to the association's true identity, its source of funding, or its purpose.

(g) Nothing in this section prohibits the Metropolitan Water District of Southern California, a member public agency of that district, or a board member, officer, or employee of the Metropolitan Water District of Southern California or of a member public agency of the district, from participating in, or providing funding in a clearly identifiable way for, an association formed for the purpose of undertaking legitimate activities, including, but not limited to, advocating on behalf of that association before a local agency, the Legislature, or the United States Congress.

SEC. 3. Section 130.5 is added to the Metropolitan Water District Act (Chapter 209 of the Statutes of 1969), to read: 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.

SB 60 Text

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. SEC. 4. Section 130.7 is added to the Metropolitan Water District Act (Chapter 209 of the Statutes of 1969), to read: 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.

SEC. 5. No reimbursement is required by this act pursuant to Section 6 of Article XIIIB of the California Constitution because a local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the program or level of service mandated by this act, within the meaning of Section 17556 of the Government Code.

Notwithstanding Section 17580 of the Government Code, unless otherwise specified, the provisions of this act shall become operative on the same date that the act takes effect pursuant to the California Constitution.

ANNUAL PROGRESS REPORT TO THE CALIFORNIA STATE LEGISLATURE

Achievements in Conservation, Recycling, and Groundwater Recharge

February 2002

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
www.mwdH2O.com

THE STORY

This is Metropolitan Water District of Southern California's (Metropolitan) second annual report to the State Legislature on water resource management programs. It highlights progress made in the areas of conservation, recycling and groundwater recharge.

Metropolitan affirmed its commitment to regional water supply reliability in a newly adopted Strategic Plan that outlines how the agency will ensure reliable, high-quality water supplies for Southern California's future. The plan takes into account a new rate structure for investments in resources and infrastructure, new operating strategies on the Colorado River, large variations in State Water Project supplies, the impact of an unexpected energy crisis and reaction to terrorist concerns.

For its part, Metropolitan expects to be able to meet 100 percent of its member agencies' water needs for the next ten years, even during times of critical drought. Metropolitan and its member agencies have identified and are implementing programs and projects to assure continued reliable water supplies for at least the next 20 years.

How can Metropolitan make this promise of reliability? Metropolitan's strategy has been to develop a portfolio of diversified water sources that includes cooperative conservation, water recycling, and groundwater storage, recovery, and replenishment programs. It also includes water transfers, desalination and state and federal water initiatives, such as CALFED and California's Colorado River Water Use Plan.

All of these resources are linked together. For example, the water quality (salinity) from the Colorado River and the State Water Project affects the amount of water available for groundwater recharge or recycling. These linkages dictate management policies and encourage integrated planning.

The need for coordinated planning was underlined in new legislation this year with the passage of California Senate Bills 221 (Kuehl) and 610 (Costa) that require responsible land and water use policies and recognize the tie between water supply reliability and development.

Metropolitan has been working closely with member and local agencies to meet water demands of our existing and projected customers. Metropolitan is moving forward with plans to improve the regional water delivery infrastructure and implement a new rate structure that will strengthen financing capabilities for both local and imported supplies.

Periodic drought being a certainty, Metropolitan has built appropriate infrastructure improvements—such as Diamond Valley Lake—in advance of the time of need and with back-up capabilities to provide a margin of safety. These infrastructure improvements include those made in accordance with the CALFED Record of Decision to solve the long-term environmental and water supply problems of Northern California's Bay-Delta.

Cover Photo: "Blue Line Oasis" by artist Lynn Aldrich, at the Metro Rail Blue Line train station in the city of Artesia, is a large waterless mosaic and stone "well" that greets commuters with several images of water to remind them of the area's history of artesian wells. This photo is part of Metropolitan's Liquid Art Program, a celebration of water in public places. Photo by Tom Bonner.

THE STORY

A partnership with member agencies supports an aggressive local resources program. In 2001, Metropolitan developed more that 158,000 acre-feet per year of additional water supplies from local water recycling, groundwater recovery, and active water conservation programs. Also, a progressive request was issued for seawater desalination proposals.

Metropolitan's water management objectives are quality, reliability, and fairness. Metropolitan accomplishes these objectives based on cooperative partnerships in water management. This promises greater certainty of supply and a coordinated response to regional water needs.

Metropolitan initiated several cooperative-pricing programs to store water in local groundwater basins with the promise of about 200,000 acre-feet of water available during dry years. Metropolitan also agreed to develop nine more storage programs in Southern California groundwater basins that will produce about 100,000 acre-feet of supplies during a drought.

In an effort to shape California's competitive water market and to better plan for drought, Metropolitan initiated a series of water transfers and storage programs as a source of dry-year supplies. A water transfer is a change in the way water is allocated among water users, where one party with extra water agrees to transfer water to another party with temporary or ongoing water needs. Metropolitan recently developed water transfers with the San Bernardino Valley Municipal Water District. Metropolitan also participated in California State Department of Water Resources' drought water bank. Additional water transfers are planned with the Kern Delta Water Storage District and others in the Central Valley. These water transactions and the ongoing groundwater storage agreements with Semitropic Water Storage District and Arvin-Edison Water District will provide from 90,000 to 280,000 acre-feet of annual water supplies.

In addition, Metropolitan has cooperative groundwater storage programs with Coachella Valley Water District in the Coachella Valley and with the Central Arizona Water Conservation District in central Arizona. Additional water transfers are planned with the Palo Verde Irrigation District in Riverside County.

THE NUMBERS

Metropolitan-Assisted Local Resources Cumulative Investment Through 2001

			2001 Production
Active Conservation*	$155 million	To Produce	66,000 AFY
Recycling	$85 million		67,000 AFY
Groundwater Recovery	$21 million		25,000 AFY

Metropolitan-Assisted Groundwater Programs Cumulative Investment Through 2001

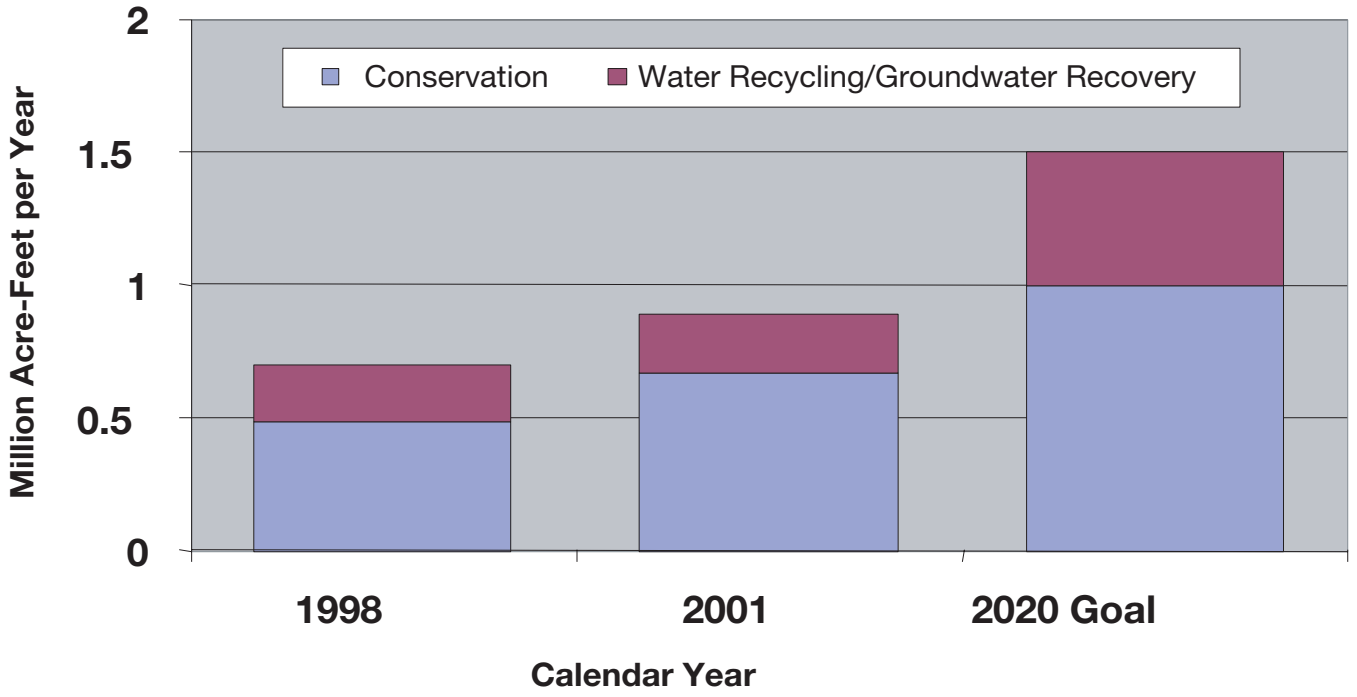
			Nov. 2001 Storage
Contractual Storage	$21 million	To Store	236,000 AF
Water Rate Incentives	$162 million		

This table presents Metropolitan's cumulative local resource investments to date and the annual yield produced. These investments represent early milestones in the overall long-term regional water resource development picture, as projected by the Integrated Resources Plan and Strategic Plan.

** Active conservation is reported on a fiscal year basis. Excludes large landscape conservation savings.*

AFY = acre-feet per year. An acre-foot is equal to 325,851 gallons, or enough to supply two average families for a year.

Increase in Total Regional Conservation, Water Recycling, and Groundwater Recovery with 2020 Integrated Resources Plan Goal



Regional conservation includes: active conservation, passive conservation (1988 model estimate), and price effects.

Active conservation = conservation resulting from water utility sponsored programs.

Passive conservation = conservation resulting from improved plumbing codes and legislative mandates.

FOR MORE INFORMATION...

For More Information, Contact:

Ms. Kathy Cole 916-650-2642
Executive Legislative Representative
The Metropolitan Water District of Southern California
or visit our website at www.mwdH2O.com

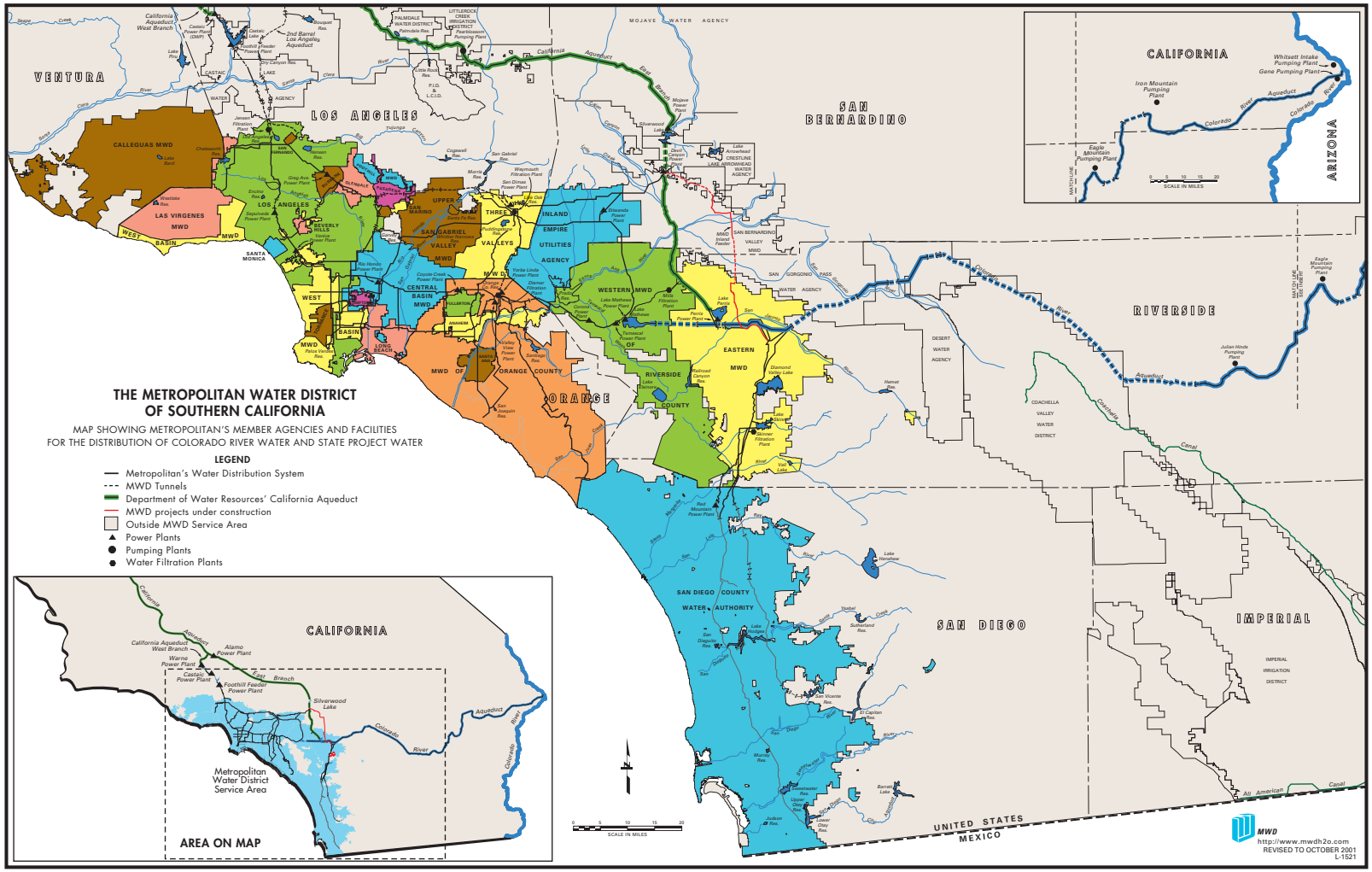


TABLE OF CONTENTS

1. OVERVIEW Page 8

2. INVESTMENTS Page 12

3. POLICY PRINCIPLES Page 28

4. PROGRAM AND POLICY DEVELOPMENT INITIATIVES Page 30

5. PERFORMANCE RESULTS Page 45

6. APPENDIX Page 47

METROPOLITAN WATER DISTRICT

A Brief History

The Metropolitan Water District of Southern California is a public agency established under a legislative act passed in 1928 to secure imported water supplies. Today, Metropolitan, through its 26 member public agencies, serves a population of about 17 million living in six counties from Ventura to San Diego.

A lot has changed since Metropolitan's formation. Shaped by public sentiment and regional need, Metropolitan has fulfilled its founding promise as regional provider and helped to create a coordinated vision and strategy to meet future water needs. This effort will be supported in part by a newly approved rate structure that provides financial surety for future resource investments.

Metropolitan's headquarters in downtown Los Angeles is adjacent to historic Union Station.

The mission of the Metropolitan Water District of Southern California is to provide its service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

The Purpose of This Report

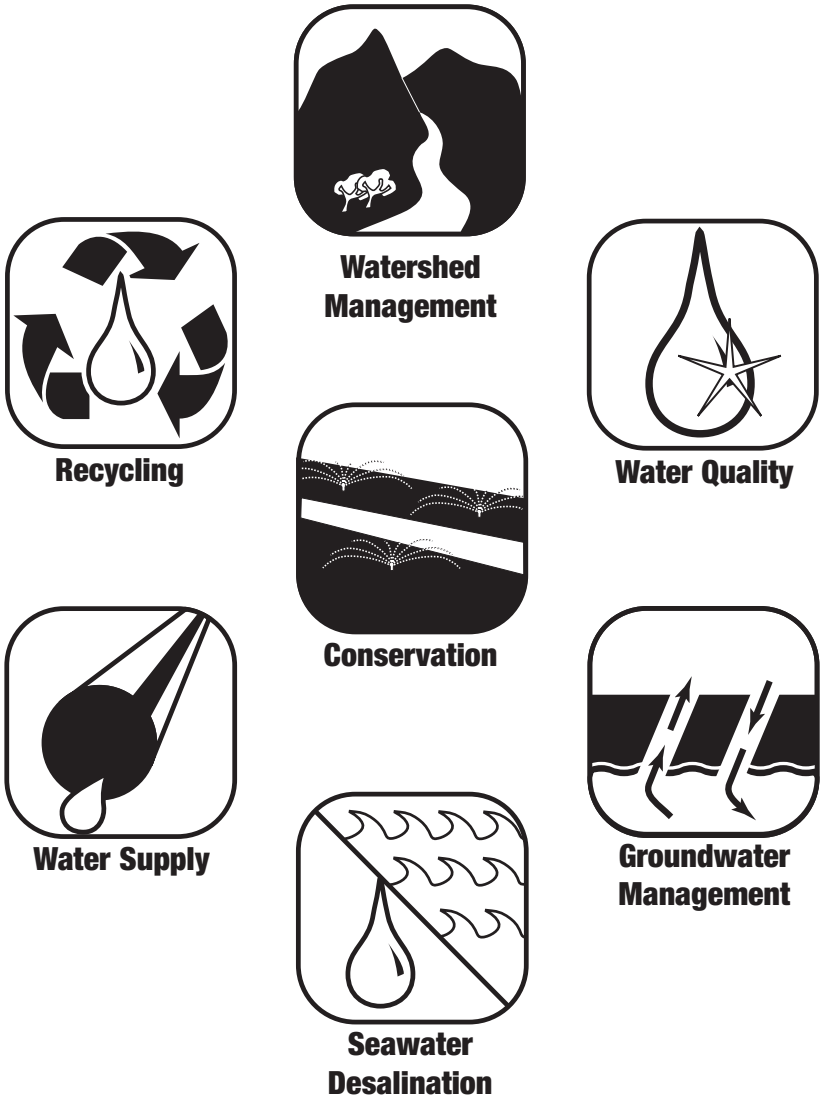
This report provides an overview of Metropolitan's accomplishments in 2001 as prescribed by the Metropolitan Water District Act (MWD Act), Sections 130.5 and 130.7 (see Appendix).

One of the features of MWD Act Section 130.5 is an emphasis on public involvement. Public input has never been more welcome or greater at Metropolitan. This year saw the conclusion of a very open, public process designed to revise Metropolitan's rate structure—one element of an interactive three-year strategic planning process. With member agency and public input, a new rate structure was approved that promises greater flexibility and financial security.

The need for the public to benefit from Metropolitan's integrated resource strategy has shaped the Community Partnering Program (CPP). Created in 1999 in partnership with Metropolitan's member agencies, the program provides sponsorships to agencies for projects and programs that educate the public about water conservation, water quality, and water reliability issues.

To date, nearly $1 million have been awarded by the CPP to projects including new demonstration conservation gardens and science fairs to historical exhibits.

This year, Metropolitan will update its Integrated Resources Plan (IRP), which was originally adopted in 1996. The IRP is the document that puts into words the interconnection between all of Southern California's water sources and how best to coordinate their use for maximum efficiency and reliability. The update includes public input and will guide future water resource management decisions.



TIMELINE OF ACHIEVEMENTS

1975

Pre 1960

First Year That Incentives Were Provided for Delivery of Wet Year Supplies to Encourage Groundwater Recharge

1974

Colorado River Basin Salinity Control Act

1976-1977

Metropolitan Initiates Several Conservation Incentive Programs

1980

1981

Implemented Interruptible Program (Provided a reduced price incentive to encourage storage of surplus water)

1982

Launched Local Projects Program (Spurred development of recycled water supply projects)

1985

1985

Adopted First Regional Urban Water Management Plan (RUWMP — This is updated every five years)

1988

Launched Toilet Retrofit Program

Launched Conservation Credits Program (Funding for conservation-related activities)

1989

Implemented Seasonal Storage Program (Encouraged greater conjunctive use of supplies)

1990

Adopted RUWMP

1990

1991

Launched Groundwater Recovery Program (to encourage recovery of degraded groundwater)

Signed MOU Establishing Conservation Best Management Practices (BMPs)

1990 - 1993

Voluntary Conservation Practices Became Widespread in Southern California

Widespread Implementation of the Toilet and Showerhead Retrofit Program

Metropolitan/Palo Verde Irrigation District Initiate Test Program to Not Irrigate Farmland

TIMELINE OF ACHIEVEMENTS

1995

1995

Adopted RUWMP

Signed Las Posas Groundwater Storage Agreement

1996

Adopted Metropolitan's Integrated Resources Plan (IRP)

1998

Metropolitan Staff Appointed to Serve as Watershed Council Board Liaison

Established New Local Resources Program for Development of Recycled Water & Recovered Groundwater

Imperial Irrigation District (IID)/San Diego County Water Authority (SDCWA) Water Transfer Agreement

Metropolitan/SDCWA Exchange Agreement re: IID/SDCWA Transfer

2000

1999

Adopted Water Surplus and Drought Management (WSDM) Plan

SB 60 Signed into Law

Formed Salinity Management Coalition & Hosted Salinity Summit I

Adopted Strategic Plan Policy Principles

Created Community Partnering Program

Final Rule Colorado River (CR) Offstream Storage

Metropolitan Adopts Long-Term Salinity Management Plan

2000

Adopted RUWMP

Hosted Watersheds Dialogue Conference

Ongoing Participation in Water Augmentation Study by L.A. & San Gabriel Rivers Watershed Council

2000

Hosted Climate Change Workshop

Recognized by the National Drought Policy Commission

Launched the Innovative Conservation Program

California's Colorado River Water Use Plan

2001

First Annual Report to the Legislature on Achievements in Conservation, Recycling & Groundwater Recharge

Salinity Summit II

Adopted New Rate Structure Plan

Launched CII Region-wide Program

Review of IRP

SB 221 & SB 610 Signed Into Law

Colorado River Record of Decision on Interim Surplus Guidelines

2005

2001

Metropolitan/Arizona Interim Surplus Guidelines Agreement

Metropolitan/PVID Principles for Land Mgmt., Crop Rotation, and Water Supply

Metropolitan Land Purchase in Palo Verde Valley

Metropolitan Approval of Funding for Conservation/Mitigation Measures for CR Transfers

Community Partnering Program Co-Sponsorships:

- ***Arroyo Seco Restoration Project***
- ***Heal the Bay Watershed Monitoring Program***
- ***Ballona Wetlands Science Symposium***
- ***Sacramento Watershed Education Program***

Turned over Bolsa Chica property to State for Wetlands and Watershed Protection

2002

Anticipated rebate for 2 Millionth ULF toilet retrofit

CONSERVATION ACHIEVEMENTS

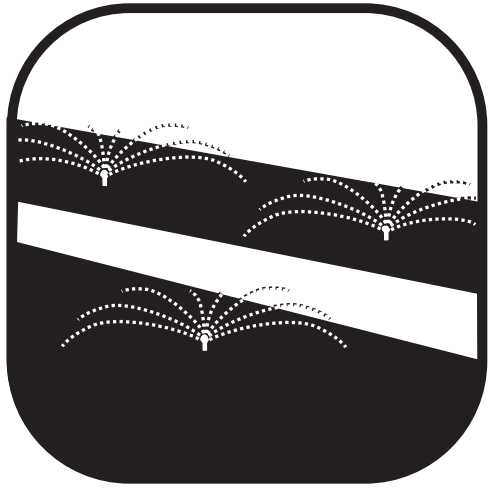
Guiding Policies

Metropolitan's conservation policies have their foundation in two documents — Metropolitan's Integrated Resource Plan (IRP) and the Memorandum of Understanding Regarding Urban Water Conservation in California, to which Metropolitan is a signatory.

On paper and in practice, Metropolitan is committed to providing quality water conservation programs and services. Over the last decade, Metropolitan and its member agencies have invested more than $226 million in regional conservation programs.

Metropolitan's involvement in conservation extends to the greater water community in California. The agency has contributed to the development and coordination of numerous conservation activities throughout the State and has been recognized for its efforts in the form of "Gold Star" certification from the Association of California Water Agencies and several awards from the U.S. Bureau of Reclamation.

Metropolitan also has been instrumental in the development and continued promotion of legislation that supports water-saving activities.



Conservation

A summary of conservation activities that Metropolitan has helped to implement in its service area over the past decade is included in the Appendix.

CONSERVATION ACHIEVEMENTS

Participating Agencies	
City of Anaheim	
City of Beverly Hills	
City of Burbank	
Calleguas Municipal Water District	
Central Basin Municipal Water District	
Coastal Municipal Water District	
City of Compton	
Eastern Municipal Water District	
Foothill Municipal Water District	
City of Fullerton	
City of Glendale	
Inland Empire Utilities Agency	
Las Virgenes Municipal Water District	
City of Long Beach	
City of Los Angeles	
Municipal Water District of Orange County	
City of Pasadena	
San Diego County Water Authority	
City of San Marino	
City of Santa Ana	
City of Santa Monica	
Three Valleys Municipal Water District	
City of Torrance	
Upper San Gabriel Valley Municipal Water District	
West Basin Municipal Water District	
Western Municipal Water District	
Total Credits (July 1998-June 2001)	**$45,692,000**

The Conservation Credits Program

Metropolitan's Conservation Credits Program provides financial support to member agency conservation programs by paying either $154 per acre-foot of water conserved or one-half of the program cost, whichever is less. This program was initiated in 1988.

Metropolitan offers rebates and other financial incentives to residents, businesses, industry and institutional customers to encourage conservation.

CONSERVATION ACHIEVEMENTS

Fiscal Year 2001 Accomplishments

CALFED Funded Grants

- Residential Washer Rebate Program - $925,000. This grant increases financial incentives for the purchase of high-efficiency clothes washers.
- Bilingual Landscape Course Development - $100,000. This grant allows for the development of additional course materials for the successful Protector del Agua program which teaches landscape workers water conservation techniques related to plants and irrigation.
- Commercial, Industrial & Institutional (CII) Regionwide Program - $34,000. This grant provides outside funding for additional rebates provided to commercial customers who purchase water-efficient fixtures. Commercial participation in this program has increased significantly with a targeted Metropolitan outreach and advertising campaign (see page 15).

U.S. Bureau of Reclamation Funding

A quarter of a million dollars was used to continue the CII Regionwide Program of increased financial incentives and a single point of contact.

- Hardware Retrofits in Fiscal Year 2001
- Retrofitted approximately 120,000 ultra-low flush toilets (ULFTs) bringing the total to nearly 2 million.
- Provided rebates for 5,539 high-efficiency clothes washers bringing total rebates to nearly 20,000.
- Rebated the installation of 54 cooling tower conductivity meters bringing the total to 221.

Initiation of the Innovative Conservation Program (ICP)

Announced in fall 2000, the ICP identifies new technologies, different market sectors, or more effective ways of implementing existing conservation programs through a competitive grant program. Ten projects were selected with a total funding commitment of $210,000. Projects include:

- A re-circulating device for X-ray film developers;
- A broom that sprays water to replace hosing of commercial hardscape;
- A rinse-water recycling technology;
- An evaluation of wireless soil moisture sensors;
- A study determining the conserving effect of reduced system water pressure;
- Training in landscape water budgeting and water-wise planting concepts; and
- Training for plumbers about conservation devices and native and drought-resistant plants.

Technical Workshops

Metropolitan continues to host technical workshops for member agency conservation coordinators, providing updates on new conservation devices, pilot projects, research projects, and new program approaches.

Expansion of the Commercial Industrial and Institutional Program

Metropolitan's board authorized an additional $4 million to continue the CII program for three years. This program has significantly expanded conservation activity in this important market segment.

CONSERVATION ACHIEVEMENTS

Research and Support

- Issued a research report on the long-term durability of new-to-the-marketplace ULFTs.
- Issued a supplementary report on the integrity of toilet flappers when subjected to chlorine cleaning agents.
- Completed a pilot study with Irvine Ranch Water District of residential evapotranspiration (ET) controllers evaluating the potential marketability of this new technology designed to reduce residential landscape water use.
- Continued work on the Orange County Saturation Survey determining the presence and absence of water-efficient fixtures in residential settings.
- Maintained nine California Irrigation Management Information System (CIMIS) stations in support of various landscape programs.
- Provided two consultants to assist member agencies in tracking the data from their centralized irrigation controller system retrofit projects.

Protector del Agua Training

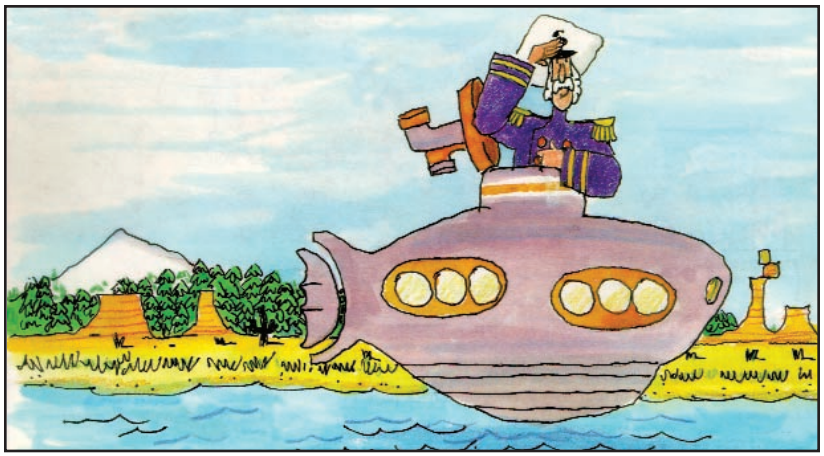
Conducted 290 Protector del Agua classes, producing 2,625 new graduates. This series of six classes educates landscapers about the principles of water-wise landscaping. There also are two courses offered to homeowners in water-efficient irrigation and planting practices.

Education

- Distributed a new educational program, "Thinking More About Using Less," for grades 6-12.
- Continued school and adult community programs including water-related materials and field trips to learn about conservation, drought, water quality, and the physical properties of water.
- Developed inspection trips for Metropolitan's constituencies focusing on successful "Conservation Collaborations" through the Local Projects Program.

Water Education Center

This year the board launched a planning effort for a region-wide water education center to be located in Hemet next to Diamond Valley Lake. The purpose of the center is to chronicle the development of water in Southern California and act as a hub for conservation exhibits and development efforts.



Educational materials draw children into the conservation "ethic."

CONSERVATION ACHIEVEMENTS

Partnering with Agriculture

Parallel to its urban water conservation efforts, Metropolitan embarked on a pioneering agricultural water savings program in 1988 with the Imperial Irrigation District (IID). Funds were provided for 14 conservation projects with operation and maintenance costs covered by Metropolitan for a minimum 35 years. To date, Metropolitan has invested more than $175 million in these projects to conserve about 104,000 acre-feet of agricultural water every year.

To facilitate the transfer of up to 200,000 acre-feet of conserved agricultural water to urban Southern California, Metropolitan entered into an exchange agreement with the San Diego County Water Authority (SDCWA) in 1998. Under this agreement, SDCWA will receive from Metropolitan an amount of water equal to the amount of water conserved by IID under the SDCWA-IID Agreement for Transfer of Conserved Water (1998).

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

Not irrigating farmland is an option that provides a way to obtain needed water supplies during dry years. From 1992 to 1994, Metropolitan conducted a test program involving 63 landowners and lessees in the Palo Verde Valley. Metropolitan paid for 20,215 acres of farmland to not be irrigated within the Palo Verde Irrigation District and in turn obtained about 186,000 acre-feet of water over a two-year period.

In July 2001, Metropolitan and the Palo Verde Irrigation District (PVID) endorsed, in concept, a landmark 35-year Land Management, Crop Rotation and Water Supply Program (Program). The Program provides Metropolitan with a flexible supply of Colorado River water ranging in quantities from 25,000 acre-feet up to about 111,000 acre-feet. Currently under environmental review, the Program is expected to begin in August 2002.

At Metropolitan's request, participating farmers will not irrigate a portion of their farmland. To avoid damaging their businesses, cropped farmland will be rotated, and the unused irrigation water made available for use in urban Southern California. In return, farmers will be compensated with a one-time signup payment and an annual payment tied to the amount of non-irrigated acreage. The program will increase land productivity and help stabilize the farm economy. Metropolitan also will provide funds over the life of the Program to support community improvement projects in the Palo Verde Valley.

Canal lining in the Imperial Irrigation District.

CONSERVATION ACHIEVEMENTS

Coachella and All American Canal Lining Projects

The Secretary of the Interior is authorized to concrete-line portions of the existing earthen All American and Coachella Canals. The conserved waters from these projects will become part of the water supply for Metropolitan's Colorado River Aqueduct.

In June 2001, an agreement for funding the Coachella Canal Lining Project between the California Department of Water Resources (DWR) and Metropolitan became effective. Under the agreement, DWR will reimburse Metropolitan for up to $74 million in environmental compliance, design, and construction costs associated with its implementation of the lining project. Once complete, the 33.2-mile Coachella Canal Lining Project will conserve 26,000 acre-feet of water per year that would otherwise be lost to seepage.

In December 2001, Imperial Irrigation District (IID) executed an agreement for funding the All American Canal Lining Project. This provides reimbursement to IID by DWR for up to $126 million in environmental compliance, design, and construction costs. Completion of the 23-mile All American Canal Lining Project will conserve 67,700 acre-feet of water per year.

Lining the Coachella Canal with concrete.

Metropolitan Extends Regional Conservation Commitment to State/National Groups

California Urban Water Conservation Council (CUWCC)

Signatories to the Conservation Best Management Practices (BMP) comprise the CUWCC and are responsible for guiding the funding, reporting, and implementation of BMP requirements. In 2001, Metropolitan contributed $128,000 in funding. Metropolitan staff sit on the following governing committees:

• Steering • Programs • Plenary • Measurement and Evaluation

• Landscape • Commercial, Industrial and Institutional • Reporting

ASME / ANSI Standards Committee

The American Society of Mechanical Engineers / American National Standards Institute sets the standards that all plumbing fixtures must meet before they are sold in the U.S. Metropolitan has lobbied for better performing and more durable plumbing fixtures to safeguard Southern California's investment in conservation.

Participation in Nationwide Studies

Evaluation of plumbing fixtures, new technology and potential saving estimates are broad-based studies supported by Metropolitan.

Leadership in the American Water Works Association (AWWA) Conservation Division

Metropolitan staff members hold many prominent positions in the AWWA Conservation Division.

WATER RECYCLING

A Valuable Source of Supply

Local water agencies realized long ago that recycled water is a valuable source of supply. This vision led to the development of approximately 190,000 acre-feet of recycled water in 2001, with a history that dates back to the 1920s.

For more than 19 years, Metropolitan has provided funding for water recycling projects throughout its service area totaling approximately $85 million to date.

In June 1998, Metropolitan established a new Local Resources Program with a cost-effective competitive element – member agencies submit project proposals for evaluation by a Metropolitan review committee. This program fosters competitiveness and encourages development of cost-effective recycled water and groundwater recovery projects.

Metropolitan has funding agreements with its member agencies for 53 water recycling projects. In 2001, 37 of those projects were in operation and they produced about 67,000 acre-feet of recycled water. Metropolitan contributed $13.5 million towards this production in 2001. In addition, local agencies produced about 123,000 acre-feet of recycled water without financial assistance from Metropolitan.

Metropolitan supports the use of recycled water for irrigation and other municipal purposes, as well as its use as a seawater barrier and source of water for groundwater replenishment.

In 1993, Metropolitan partnered with seven local water agencies and the state of California to join the U.S. Bureau of Reclamation in a regional planning process called, “The Southern California Comprehensive Water Reclamation and Reuse Study.” The purpose of the study is to identify the long-term potential to match recycled water needs with available resources. Preliminary conclusions from the study identified 34 short-term implementation projects with a potential yield of more than 450,000 acre-feet per year.

Recycling

RECENT WATER RECYCLING PROJECT START-UPS

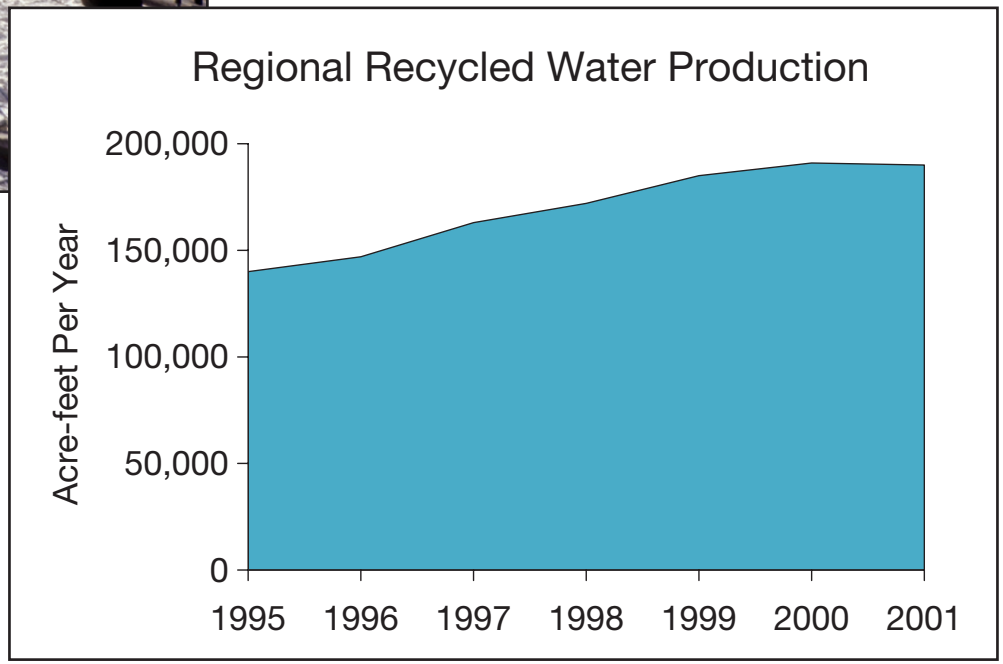
2000

The San Elijo Water Reclamation System (1,600 AFY)

This project is located in San Elijo under a 25-year Local Resources Program conversion agreement with the San Diego County Water Authority and the San Elijo Joint Powers Authority.

The Eastern Reach 1, Phase II Water Reclamation Project (1,700 AFY)

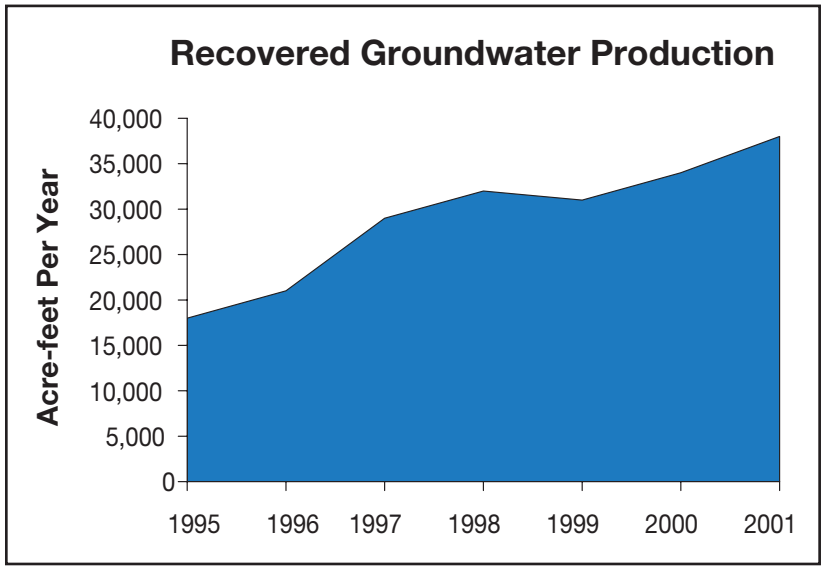
This project is located in Riverside, under a 15-year Local Projects Program agreement with the Eastern Municipal Water District. Metropolitan provides assistance for up to 1,700 AFY of water for landscape and agricultural use.



GROUNDWATER RECOVERY

Groundwater Reservoirs

The natural groundwater reservoirs that lie beneath the earth's surface are an important source of supply for Southern California. When the water they hold becomes polluted, water agencies have to rely more heavily on imported supplies. Treatment for degraded groundwater is typically quite costly and can create a whole new set of problems when it comes to proper disposal of the concentrated waste that is a by-product of the treatment process. Nonetheless, in 2001, local water agencies successfully developed groundwater recovery projects and recovered about 43,000 acre-feet of previously unusable groundwater.



Metropolitan has provided funds for groundwater cleanup programs since initiating the Groundwater Recovery Program in 1991.

Over the last ten years, Metropolitan has entered into agreements with its member agencies to provide funding for 22 groundwater recovery projects throughout its service area for a total investment of about $21 million. In 2001, 13 of those projects were in operation and they recovered about 25,000 acre-feet of water. Metropolitan contributed about $5.4 million towards this production in 2001. In addition, local agencies produced another 18,000 acre-feet of recovered groundwater without financial assistance from Metropolitan.

One of the most promising partnerships in this area is the Desalination Research and Innovation Partnership (DRIP). It brings public and private water and power organizations together to look for innovative technologies to desalt brackish groundwater at an affordable cost.

Groundwater Management

RECENT GROUNDWATER RECOVERY PROJECT START-UPS

2000

The Chino Basin Desalter Phase I (8,000 AFY)

Located in Chino, under a 20-year Groundwater Recovery Program agreement with the Inland Empire Utilities Agency, the Western Municipal Water District, and the Santa Ana Watershed Project Authority.

The Lower Sweetwater River Basin Groundwater Demineralization Project, Phase I (3,600 AFY)

Located near National City, under a 20-year Groundwater Recovery Program agreement with the San Diego County Water Authority and the Sweetwater Authority.

The Westlake Wells - Tapia Water Reclamation Facility Intertie Project (150 AFY)

Through a 4-year Local Resources Program agreement with the Las Virgenes Municipal Water District, this project, located in Westlake Village, provides treated groundwater for landscape irrigation.

Desalting equipment used for groundwater recovery projects receiving funding from Metropolitan.

RECENT GROUNDWATER RECOVERY PROJECT START-UPS

2001

The Colored Water Treatment Facility (11,300 AFY)

Located in Costa Mesa, under a 25-year competitive Local Resources Program agreement with the Municipal Water District of Orange County and the Mesa Consolidated Water District. Will deliver treated groundwater to augment domestic supplies.

The Menifee Basin Desalter (3,360 AFY)

Located in Sun City, under a 20-year Groundwater Recovery Program agreement with the Eastern Municipal Water District for potable use.

The Juan Well Filter Facility (900 AFY)

Located in Hawaiian Gardens, under a 7-year competitive Local Resources Program agreement with the Central Basin Municipal Water District and the Southern California Water Company. Will deliver treated groundwater for municipal and domestic use.

Temescal Basin Desalting Facility (10,000 AFY)

Located in Corona, under a 25-year Competitive Local Resources Program agreement with the Western Municipal Water District and Corona.

The Madrona (Goldsworthy) Desalination Facility (2,400 AFY)

Located in Torrance, under a 20-year Groundwater Recovery Program agreement with Torrance and The Water Replenishment District of Southern California. Will deliver potable water for municipal use.

GROUNDWATER RECHARGE / CONJUNCTIVE USE

Conjunctive Use Plays a Significant Role in California Water Management

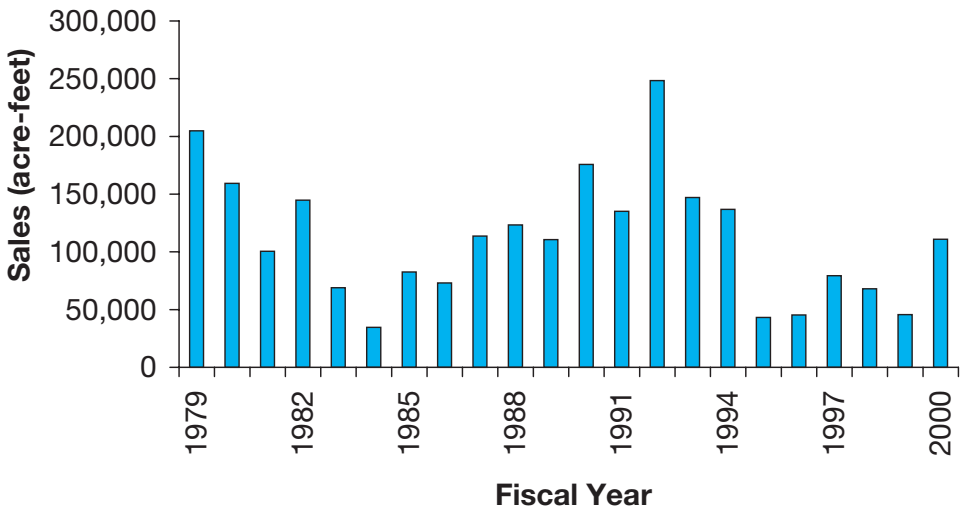
"Conjunctive use" refers to the practice of storing surplus imported surface water in groundwater basins for use during times of shortage or drought.

Metropolitan recognizes the significant role that conjunctive use plays in Southern California's water management strategy. Since the 1950s, Metropolitan's local water management strategy has included conjunctive use of both surface water and groundwater.

Groundwater basins in Metropolitan's service area yield an annual average of 1.3 million acre-feet. The water withdrawn is replenished by both natural processes and engineered methods.

Conjunctive use programs are an integral part of Metropolitan's IRP. Metropolitan supports a wide variety of conjunctive use programs ranging from pricing incentives for replenishment supplies to contractual programs that provide dry-year yield during drought or emergencies. Metropolitan and one of its member agencies, the Calleguas Municipal Water District, are currently constructing facilities in Ventura County that will produce up to 70,000 acre-feet of water during a dry year. Metropolitan is also finalizing agreements with the San Diego County Water Authority, Foothill Municipal Water District, Inland Empire Utilities Agency, Central and West Basin Municipal Water Districts, City of Long Beach, City of Compton, City of Torrance, Municipal Water District of Orange County, and Three Valleys Municipal Water District to develop nine conjunctive use programs within its service area. These programs will develop approximately 65,000 acre-feet of dry year supply for Southern California.

A more detailed explanation of Metropolitan's strategy for regional groundwater storage is in the Policy Principles section of this report.

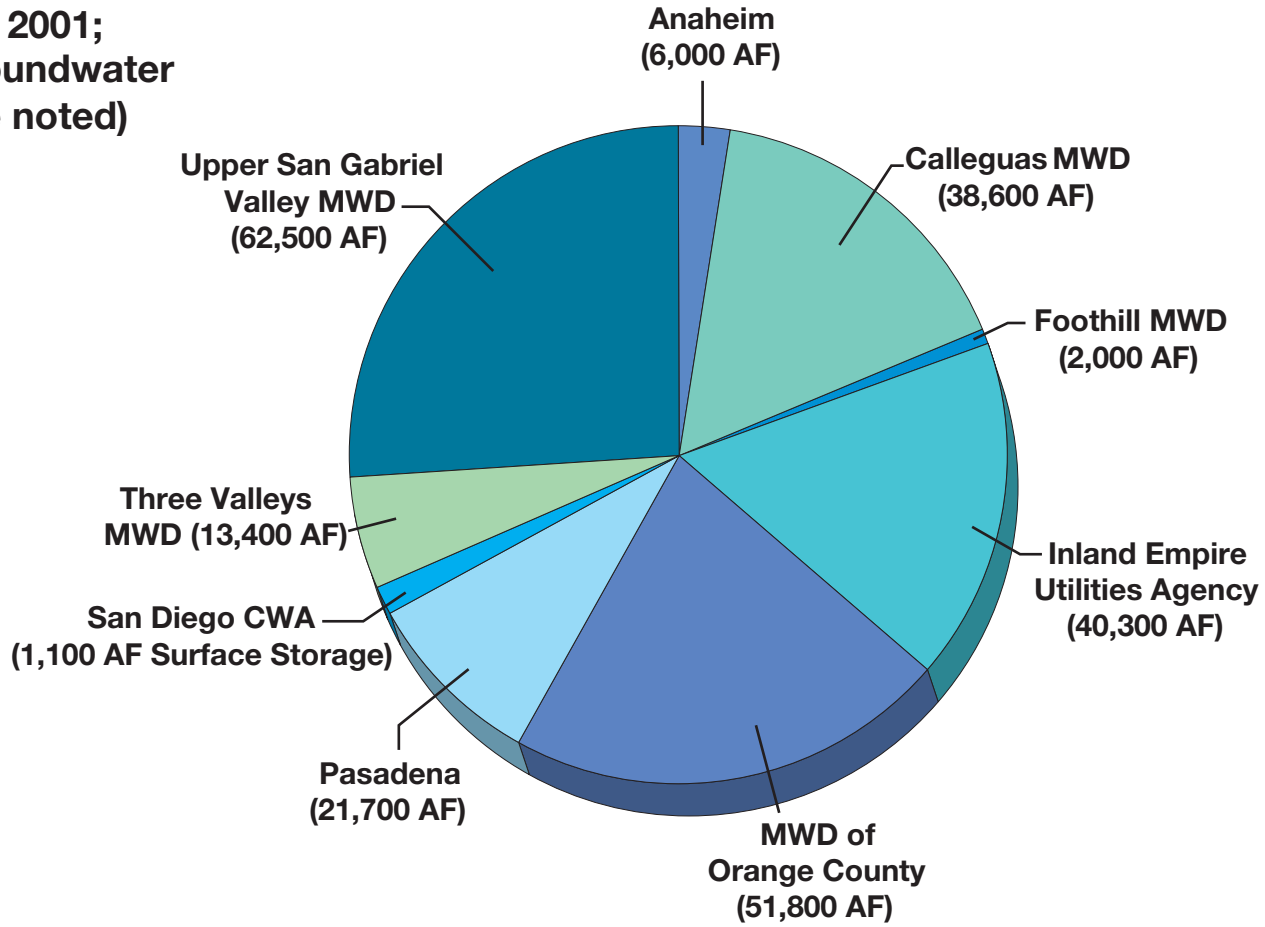


METROPOLITAN WATER STORED IN SOUTHERN CALIFORNIA

Metropolitan Water Stored in Coastal Southern California Groundwater Basins and Local Agency Reservoirs

Total Groundwater Storage:	236,300 AF
Total Surface Storage:	1,100 AF
Total Storage:	237,400 AF

(As of November 2001;
All storage is groundwater
unless otherwise noted)

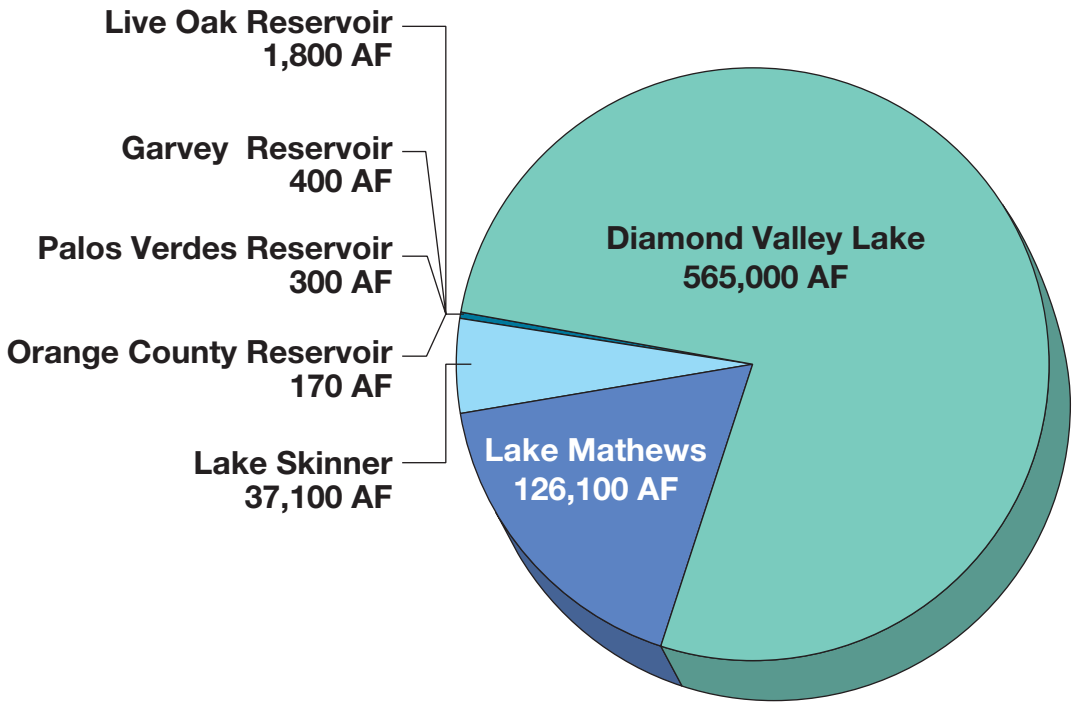


METROPOLITAN WATER STORED IN SOUTHERN CALIFORNIA

Surface Water Storage in Metropolitan Southern California Reservoirs

Total MWD Surface Water Storage: 730,900 AF

(As of December 14, 2001; Additionally, Metropolitan has access to Flexible Storage in two Department of Water Resources Southern California Reservoirs — 103,940 AF in Castaic Lake and 65,000 AF in Lake Perris.)

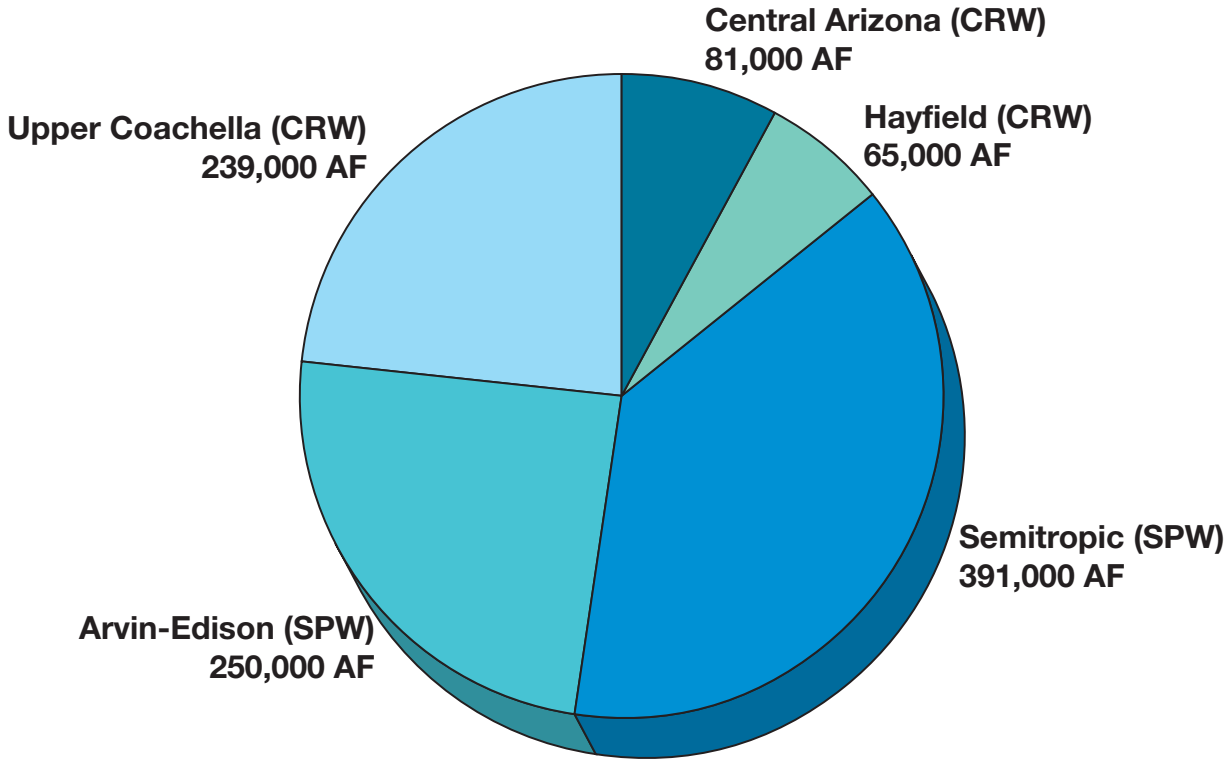


METROPOLITAN WATER STORED OUTSIDE OF SERVICE AREA

Metropolitan Water Stored in Groundwater Basins Outside its Service Area

Total CRW* Groundwater Storage:	385,300 AF
Total SPW** Groundwater Storage:	641,000 AF
Total MWD Groundwater Storage Outside its Service Area:	1,026,000 AF

(As of November 2001)



*CRW: Colorado River Water
**SPW: State Project Water

REMEDIATION AND DESALINATION

Groundwater Basin Cleanup:

Another Potential Source of Water

A decade ago, water quality problems in urban Southern California groundwater basins raised serious concerns about the ability to sustain normal production. Today, the U.S. Environmental Protection Agency's Superfund program is beginning to show significant progress toward maintaining and increasing Southland groundwater basin production through extensive cleanup programs.

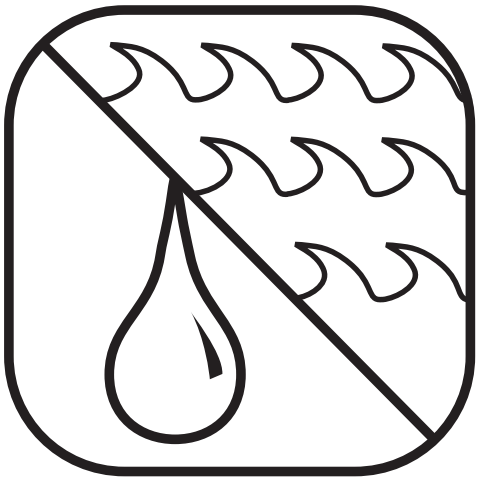
Metropolitan and its member agencies encourage the recharge of groundwater basins and the recovery of degraded groundwater. This joint effort is projected to increase groundwater production by about 262,000 acre-feet per year by 2020.

Seawater Desalination

In August 2001, Metropolitan's board approved a new seawater desalination program to develop cost-effective projects through a competitive bid process.

A "Request For Proposals" was issued in November 2001 with detailed proposals due June 2002. A review committee will evaluate proposals based on an established set of criteria to identify a project or mix of projects that best meets the region's needs.

In October 2001, Metropolitan's board approved development of a research program in concert with the competitive solicitation process. Initial research program development includes assessment of current desalination projects and a comparison of project features and applicability to Southern California.



Seawater Desalination

METROPOLITAN BOARD POLICIES

Metropolitan's Board of Directors has adopted a variety of policy principles to address issues of water reliability, quality and fairness. Highlights include:

WATER SUPPLY RELIABILITY

- Provide Metropolitan's service area with adequate and reliable supplies of high quality water to meet present and future needs in an environmentally and economically responsible way.
- Support the major objective of the IRP as a comprehensive water resource plan that ensures: 1) reliability; 2) affordability, 3) water quality; 4) diversity of supply; and 5) adaptability for the region, while recognizing the environmental, institutional, and political constraints to resource development.
- Support local resources development in partnership with its member agencies by providing financial incentives for conservation and local projects.

WATER RECYCLING

- Support federal and state proposals to provide financial assistance for water recycling.
- Support expansion of recycled water uses consistent with protection of public health.

SEAWATER DESALINATION

- Develop cost-effective seawater desalination in a manner consistent with overall water supply reliability needs.

WATERSHED MANAGEMENT

- Support public funding for watershed restoration and management programs that provide broad public benefits.
- Support legislation that provides for the development of watershed management plans that are consistent with the following criteria: 1) addresses all water resource management objectives for the watershed; 2) includes source water quality improvement objectives; 3) recognizes local primacy in basin management and land-use planning; and 4) includes public drinking water suppliers in a public participation process.
- Support Metropolitan's involvement as a stakeholder in watershed management programs to ensure consideration of drinking water quality and water supply reliability objectives.

CALFED WATER USE EFFICIENCY

Support water use efficiency strategies for all water use sectors including urban, agricultural, and environmental in the overall CALFED solution.

METROPOLITAN BOARD POLICIES

WATER CONSERVATION

- Support use of financial incentives to achieve conservation.
- Support tax credits for installation of water-efficient fixtures.
- Support participation in Conservation Best Management Practices.
- Support state legislation to encourage water efficient landscapes.
- Support state legislation to replace inefficient plumbing fixtures upon transfer of real property.
- Support the water use efficiency standards for toilets, showerheads, faucets, and urinals contained in the Federal Energy Policy and Conservation Act of 1992.

GROUNDWATER MANAGEMENT

- Support legislation that would provide low-interest loans for groundwater treatment plants.
- Support legislation that would provide state funding for regional brine disposal projects (brine disposal being a major cost in groundwater recovery).
- Support expansion of regional storage programs under board principles adopted January 2000.
  (See Appendix for detailed explanation.)

SOURCE WATER QUALITY PROTECTION

- Advocate source water quality and implement in-basin water quality programs for imported supplies provided by Metropolitan to assure full compliance with existing and future primary drinking water standards, and to meet the water quality requirements for water recycling and groundwater replenishment.
- Support federal and state legislative and regulatory proposals to establish source water quality protection programs.
- Support legislation to assure effective remediation and cleanup of perchlorate, methyl tertiary butyl ether (MTBE), other gasoline additives, or other contaminants that have affected groundwater and surface water.
- Support initiative and funding to reduce salinity in source water supplies, including the ongoing state/federal Colorado River Basin Salinity Control Program.

WATER RELIABILITY INITIATIVE

Initiatives to Stretch Existing Supplies

For more than six decades, Metropolitan has relied on the Colorado River Aqueduct and, since the 1970s, the State Water Project to deliver water to people living in the urbanized coastal zone of Southern California.

As the region's population has increased, so have the challenges of ensuring supply reliability. In response to these challenges, Metropolitan launched several initiatives to stretch the usefulness of existing supplies.

Inland Feeder

One initiative is the Inland Feeder — 44.2 miles of tunnels and pipelines that will link the east branch of the State Water Project to Metropolitan's Diamond Valley Lake and Lake Mathews. The Inland Feeder will improve Metropolitan's water delivery capability, which will be increasingly important as environmental concerns limit when water can be drawn from the Bay-Delta Estuary. The Inland Feeder will allow Metropolitan to move more water—up to 650 million gallons each day—into reservoirs during winter high-flow periods. It will also help replenish local groundwater basins and improve the quality of the Southland's drinking water.

To further diversify its water resource portfolio, Metropolitan's Integrated Resource Plan (IRP) offers Metropolitan the flexibility to buy water from willing sellers either on an annual basis, only during dry years, or on the spot market.

Completion of the Arrowhead tunnel portion of the Inland Feeder Project in 2001.

WATER RELIABILITY INITIATIVE – COLORADO RIVER PROGRAMS

Hayfield Groundwater Storage Program

The Hayfield Groundwater Storage Program will spread Colorado River water in the Hayfield groundwater basin and allow for extraction of the stored water for delivery to the Colorado River Aqueduct at a later date. This program will help Metropolitan comply with California's Colorado River Water Use Plan, increase dry-year water supply reliability for Southern California, conserve available Colorado River water for later use in dry years, and increase the reliability of Metropolitan's Colorado River Aqueduct supplies.

A demonstration project, approved in 1999, allowed Metropolitan to store about 65,000 AF. The full project was approved in June 2000 and is expected to be operational in 2006.

Chuckwalla Groundwater Storage Program

The Chuckwalla Groundwater Storage Program proposes storage of Colorado River water in the Upper Chuckwalla groundwater basin for future delivery to the Colorado River Aqueduct. The benefits of this proposed groundwater storage program are the same as those listed above for the Hayfield Program. Metropolitan's board approved a feasibility study in June 2000.

Cadiz Groundwater Program

There is a proposal for a 50-year groundwater storage and transfer program between Metropolitan and Cadiz, Inc. The proposed project is designed to use a small section of the groundwater basin in eastern San Bernardino County to store water drawn from the Colorado River during wet years when surplus supplies are available. The water would then be available to Southern California for withdrawal and use during dry years. Another element of this proposed project has Cadiz transferring available native groundwater to Metropolitan in dry years. This could result in the transfer of up to 150,000 acre-feet to Metropolitan during a dry year.

The High-Water Road above Diamond Valley Lake (DVL), the Southland's newest and largest reservoir. When full, DVL will double storage capacity for Southern California and provide six months of emergency supply.

WATER RELIABILITY INITIATIVE – COLORADO RIVER PROGRAMS

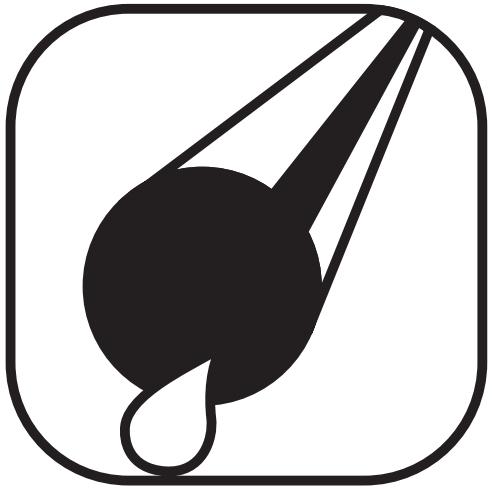
Interim Surplus Guidelines: Colorado River Water Use

On January 16, 2001, Secretary of the Interior Bruce Babbitt signed a Record of Decision to implement the Colorado River Interim Surplus Guidelines (Guidelines). The Bureau of Reclamation will use the Guidelines in determining the availability of surplus water through 2016.

Adoption of the Guidelines recognizes California's plan to reduce its dependency on surplus water as it moves toward diversion of its basic apportionment of Colorado River water. The Guidelines will enhance the opportunity to place Colorado River Aqueduct (Aqueduct) water in storage for conjunctive use programs and allow for the storage of surplus Colorado River water beyond the capacity of the Aqueduct.

Lower Coachella Valley Groundwater Program

Metropolitan is currently exploring the feasibility of a conjunctive use storage program in the Lower Coachella groundwater basin. The basin, which is currently in an over-drafted condition, has the potential to provide storage capacity of 100,000 to 175,000 acre-feet per year over a 10-year cycle.



Water Reliability

WATER RELIABILITY INITIATIVE – COLORADO RIVER PROGRAMS

About half of the water stored by the Arizona Water Banking Authority is accomplished through direct recharge facilities and half by indirect storage.

Arizona Water Bank

Interstate offstream water banking of Colorado River water provides an added water management opportunity for meeting the water supply needs of Arizona, California, and Nevada.

In 1992, Metropolitan entered into an agreement with the Central Arizona Water Conservation District (CAWCD) that allowed unused Colorado River water to be stored in Central Arizona aquifers, thus reducing the potential for future flood control releases from Lake Mead. The Southern Nevada Water Authority also participates in the program.

When Metropolitan wishes to recover the stored water, the CAWCD will reduce its Central Arizona Project (CAP) diversions, and the Secretary will allocate the unused CAP apportionment to Metropolitan. This mechanism can be exercised in a year when Arizona's Colorado River supply is at least 2.8 million acre-feet. Metropolitan paid to store 89,000 acre-feet in Arizona under this program, with a recoverable amount of 81,000 acre-feet.

In 1996, the Arizona Legislature created the Arizona Water Banking Authority. The statute provides a role for interstate storage programs, limiting the annual recovery amount to no more than 100,000 acre-feet in total for entities in California and Nevada.

Metropolitan proposes to accumulate up to 2 million acre-feet of stored water collectively in the Arizona Water Bank and the lower Coachella Valley, with an annual storage and extraction of up to 200,000 acre-feet per year.

WATER RELIABILITY INITIATIVE – STATE WATER PROJECT PROGRAMS

Metropolitan's Participation in CALFED

Deteriorating reliability and quality of State Water Project (SWP) supplies require that decisive actions be taken to resolve San Francisco San Joaquin Bay-Delta conflicts and to develop programs to "fix the Delta." In June 1995, state and federal agencies with regulatory responsibility in the Bay-Delta system launched an historic partnership under the CALFED Bay-Delta Program to address these issues. Metropolitan has worked cooperatively with CALFED and other Bay-Delta stakeholders for six years in the CALFED process to develop solutions for Bay-Delta problems that meet CALFED objectives in a balanced and cost-effective manner.

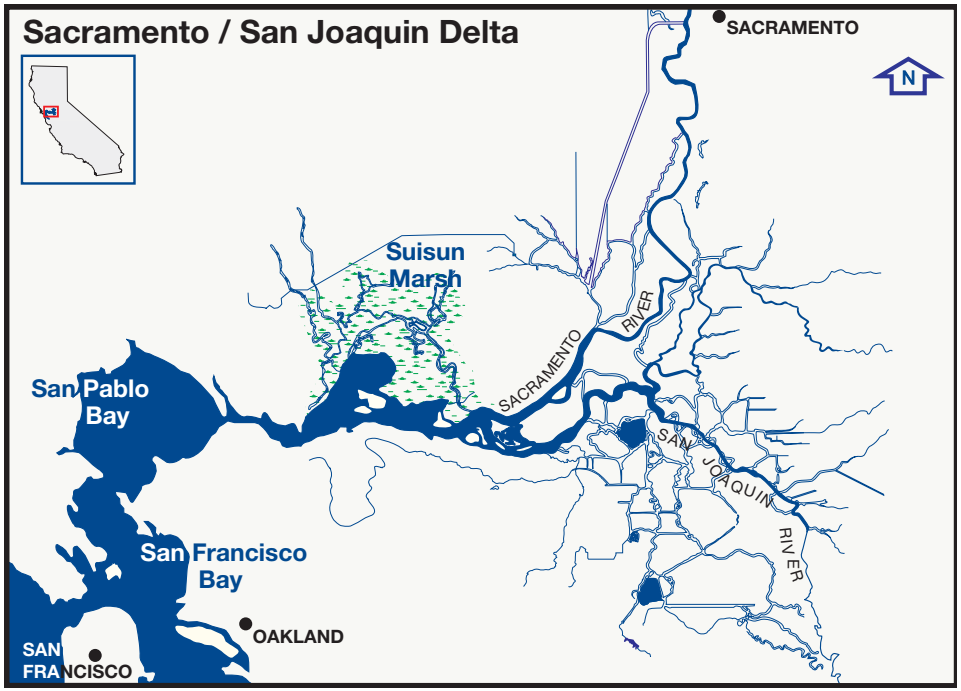
In August 2000, CALFED's Bay-Delta Program laid out final implementation plans for the first phase – the first seven years – of what is expected to be up to 30 years of improvements. Metropolitan's strategy is to reduce its dependence on SWP supplies during dry years when risks to the Bay-Delta ecosystem are greatest. This depends on the successful implementation of the CALFED program to provide regulatory stability, improvements in drinking water quality, salinity control, and water supply reliability.

Dry-Year Transfer Program

In an effort to shape California's competitive water market and to better plan for drought, Metropolitan initiated a series of water transfers.

Metropolitan negotiated an agreement with the San Bernardino Valley Municipal Water District for water supplies. Metropolitan is currently finalizing a separate agreement with the Kern Delta Water District in California's Central Valley for dry-year supplies. Together, these programs will provide enough water to meet the needs of over 200,000 Southland families during a water-short year.

The Kern Delta and San Bernardino Valley programs are among 17 multi-year proposals submitted to Metropolitan in a response to a December 1999 Request for Proposals (RFP) for up to 100,000 acre-feet of water for transfer to the Southland during dry years and supply interruptions. Metropolitan requested proposals from approximately 500 interested parties in the public and private sectors.



WATER RELIABILITY INITIATIVE – STATE WATER PROJECT PROGRAMS

San Bernardino Valley

Under the 10-year agreement with San Bernardino Valley Municipal Water District (SBVMWD), Metropolitan will annually purchase a minimum 20,000 acre-feet of SWP water, with an option to acquire additional available SWP supplies from SBVMWD. The transferred water will be delivered to Metropolitan through the coordinated use of the respective districts' facilities and interconnections.

The available SWP supplies will include direct deliveries through the California Aqueduct to Metropolitan's service area as well as transfers of recaptured state supplies previously stored by SBVMWD in its groundwater basin. Metropolitan retains the option of carrying forward any portion of the purchase water up to a total of 50,000 acre-feet for later delivery.

Kern Delta

Under the 25-year program, Metropolitan will store up to 250,000 acre-feet of its available SWP supplies in the groundwater basin underlying Kern Delta and the Arvin-Edison Water Storage District in the Bakersfield area.

During dry years, Metropolitan can call for as much as 50,000 acre-feet of water through an exchange of the stored water for Kern Delta's SWP supplies or local surface water that will be placed in the SWP's California Aqueduct for delivery to Southern California. The stored water also can be recovered and placed back in the state aqueduct by using existing or new Kern Delta facilities.

WATER QUALITY INITIATIVE

Protecting Water at the Source, So You Can Trust it at the Tap

Metropolitan's water management priorities are simply stated: quality, reliability, and fairness. In support of that mandate, Metropolitan launched a number of water quality initiatives in the past year, with progress made on national, regional, and local levels. Improved water quality can be an effective means of water conservation. Better water quality equates to less water use, greater recycling, and sustainable groundwater supplies. Among its water quality initiatives, Metropolitan:

- Was instrumental in moving Congress and federal agencies toward the option to relocate a large pile of radioactive uranium-mill tailings from near the shore of the Colorado River at Moab, Utah;
- Co-sponsored a regional workshop to explore ways to eliminate the gasoline additive methyl tertiary butyl ether, known as MTBE, from drinking water reservoirs and wells;
- Neared completion of a $37 million investment to protect Lake Mathews Reservoir near Riverside from contaminated urban runoff. The watershed protection project captures polluted stormwater from a 40-square-mile area; and
- Continued financial support of watershed protection programs throughout the state, including a $10,000 donation to the Sacramento River Watershed Program.

Water Quality Outreach Program, May-July 2001

Data from a region-wide telephone survey commissioned by Metropolitan revealed areas where consumers had concerns about the safety of their tap water. Of all the ethnic groups surveyed, Latinos expressed a willingness to pay more, if necessary, to receive better information.

As a result, in May 2001, Metropolitan embarked on a pilot water quality outreach program targeting Latino consumers in unincorporated East Los Angeles. The campaign was designed to better inform Hispanics about tap water quality and provide a template for future broader-based communication programs.

The ten-week campaign was developed in collaboration with the Central Basin Municipal Water District. It featured an easy-to-read brochure prepared in English and Spanish with the most frequently asked questions about tap water; ten different posters (5 English, 5 Spanish) featuring water quality messages; a community health fair; an outreach program to state and federal officials; and a heavily promoted media event to launch the campaign. The $100,000 campaign budget was shared equally by Metropolitan and Central Basin.

Overall, the campaign received positive responses from consumers, the news media, and elected officials. Currently, other member agencies are considering implementing the campaign within their Latino communities as well as adapting elements of the program into other languages for various ethnic and demographic groups.

WATER QUALITY INITIATIVE

About Salinity

The management of salt in our drinking water is a water supply and water quality problem. Water high in salts has limited use in recycling and groundwater management. That is one of the key reasons why a group of Southern California water and wastewater agencies have joined together in the Salinity Management Coalition. This group works to coordinate salinity management efforts and to identify ways to reduce salt levels in imported water sources. This activity is coupled with the activities of the Desalination Research and Innovation Partnership, which is conducting research to find "breakthrough" technology for brackish water desalination. Also, Southern California is working with urban areas in Arizona and Nevada to find solutions to mutual problems with salinity in the Colorado River.

By limiting salts in our water supplies from the Colorado River and Northern California, the Southern California economy and environment both benefit. For every 100 milligrams of salt per liter of these imported supplies, collectively the region incurs an additional $100 million in treatment and incidental costs — such as the replacement of plumbing lines that have been corroded by salt.

In May 2001, the Salinity Management Coalition held "Salinity Summit II: Critical Paths to Future Water Quality." The conference reaffirmed the critical nature of salinity management for Southern California.

Colorado River Basin Salinity Control Program

The Colorado River and its tributaries provide municipal and industrial water to about 27 million people and irrigation water to nearly 4 million acres of land in the United States. The river also serves about 2.3 million people and 500,000 acres in Mexico. Salinity of river water is a major concern for the United States and Mexico. The salts in the Colorado River system mostly come from saline sediments deposited in prehistoric marine environments. They are easily eroded, dissolved, and transported into the river system. Salinity affects agricultural, municipal, and industrial water users. Damages in Mexico are not quantified, but damages in Arizona, California, and Nevada are presently about $330 million per year.

In 1974, the Colorado River Basin Salinity Control Act was approved. To foster interstate cooperation on this issue, the seven states that utilize river basin water formed the Colorado River Basin Salinity Control Forum. Metropolitan is a participant in the forum's efforts to coordinate and guide the states' activities and to review the water quality standards for salinity every three years. The joint federal-state effort is estimated to have reduced salinity by 65 milligrams per liter, reducing damages. Over the next 15 years, an equal amount of salt is projected to be removed from the Colorado River water provided that adequate federal funding is appropriated.

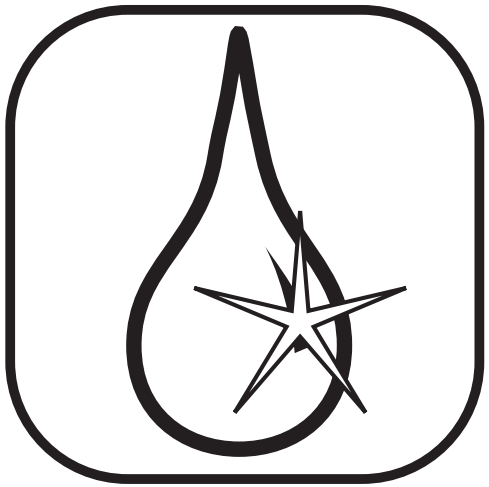
WATER QUALITY INITIATIVE

Water Quality Policy on Non-State Water Project Water into the California Aqueduct

In 2001, Metropolitan supported the Department of Water Resources' decision to establish policy governing the quality of non-SWP water introduced into the California Aqueduct. The policy provides protections for all State Water Contractors against negative water quality impacts and provides flexibility to sustain conjunctive use and other water management programs.

Metropolitan Board Adopts New Boating Policy

Metropolitan's board approved a boating policy for Diamond Valley Lake and Lake Skinner that allows the use of boats powered by people, sails, and electric and gasoline engines. The policy prohibits the use of fuels containing MTBE and carburated two-stroke engines. Diamond Valley Lake could be open to public recreation as early as the summer of 2003.



Water Quality

RATE STRUCTURE

Metropolitan's Board Adopts New Rate Structure

In October 2001, after more than two and a half years of planning, design, analyses, and public input, Metropolitan's board adopted a new rate structure. Several significant changes define the new rate structure from the way Metropolitan currently recovers its costs.

Rates and charges have been unbundled to provide a clear price signal, to encourage conservation and local resource development, and to accommodate a water transfer market. Before the change in the rate structure, Metropolitan's costs for conveying and distributing imported water, and its costs of developing supply, were bundled into a single water rate. The cost of conveying or "wheeling" water is now charged separately from the cost of developing and maintaining imported water supply. An unbundled pricing approach allows users of imported water to make sound economic choices about whether they purchase their imported supplies from Metropolitan or from a water transfer market. It also ensures equal treatment for all users with the same rates for like classes of service.

A two-tiered pricing structure will recover Metropolitan's costs for water supplies. Metropolitan's cost of developing water supplies will be used to set the higher Tier 2 Supply Rate. The higher Tier 2 Supply Rate will encourage local water agencies to invest in conservation, recycling, groundwater recovery and other economical sources of local water supply. Each member agency may purchase up to 90 percent of its historic maximum annual demand at the lower Tier 1 Supply Rate if it provides a financial commitment to Metropolitan.

A ten-year purchase order forms the basis for a financial commitment from the member agencies to Metropolitan. The member agencies will have an opportunity to enter into ten-year purchase orders for an amount of supply equal to ten times 60 percent of their maximum annual historic purchase. In return for this commitment, the member agency may purchase up to 90 percent of its demand at the lower Tier 1 Supply Rate. The purchase order balances Metropolitan's need for a financial commitment from the member agencies with the member agencies' need for flexibility and a lower initial transfer of risk.

A Water Stewardship Rate provides a funding source dedicated to the continued financial support of conservation, recycling, groundwater recovery, and other local projects as determined by the board. The Water Stewardship Rate will initially fund Metropolitan's existing Local Resources Program and Conservation Credits Program, which provide financial support to local water agencies that develop conservation, recycling, and groundwater recovery projects and programs.

The proposed effective date for rates and charges under the new structure is January 1, 2003.

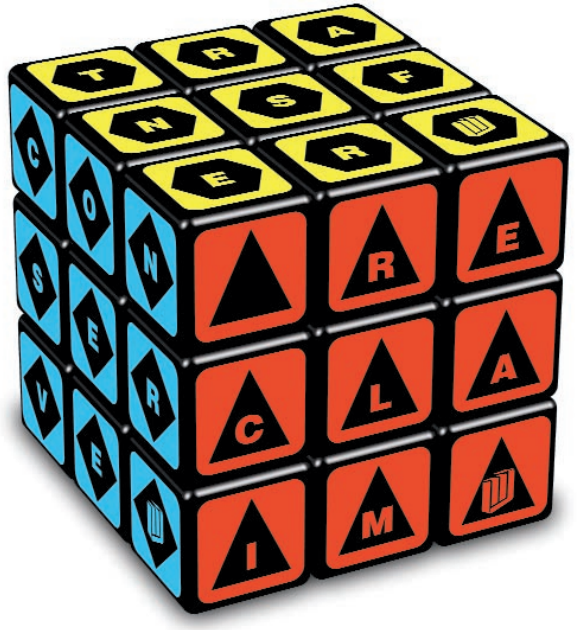
IRP UPDATE

Integrated Water Resources Plan for Southern California

In 2001, Metropolitan initiated the Integrated Resources Plan (IRP) Update. The IRP Update is an assessment of the progress made in implementing Southern California's water resource targets under the landmark 1996 Integrated Water Resources Plan for Southern California.

The 1996 IRP was a regional stakeholder planning process that culminated in a consensus long-term water resources development strategy for Southern California. This strategy included development goals for imported supply, recycling and groundwater recovery, surface and groundwater storage, and transfers. It also committed Southern California to aggressively pursue conservation by implementing conservation Best Management Practices.

The IRP Update will assess major changes in the underlying resource and demand conditions that produced the 1996 resource development goals. The process, which will include the involvement of Metropolitan's member agencies and other stakeholders in the Southern California region, will identify any adjustments that are necessary to account for the changed conditions. Metropolitan's commitments to conservation, recycling, and groundwater storage remain intact, and new developments in those and other areas may be pursued in response to any changed conditions.



METROPOLITAN'S LEGISLATIVE PROPOSALS FOR 2002

Section 130.5 of the MWD Act requires this report to include Metropolitan recommendations for Legislative actions with regard to policy or budget matters. In this spirit, Metropolitan seeks Legislative support for the following:

SEEK FUNDING TO INCREASE WATER QUALITY, RELIABILITY

This proposal seeks funding for projects that enhance water storage and exchange programs by removing arsenic from groundwater. It also calls for grants to fund research and construction of facilities to desalt seawater and Colorado River water supplies.

SECURE STATE FUNDING FOR RESEARCH & DEVELOPMENT OF NEW WATER CONSERVATION TECHNOLOGIES AND CONSERVATION BEST MANAGEMENT PRACTICES

This effort will focus primarily on the commercial and industrial sectors in order to expand conservation opportunities.

UPDATE FULLY PROTECTED SPECIES STATUTES WITHIN EXISTING CALIFORNIA LAW

The statutory inflexibility of the existing fully protected statutes within California law must be addressed to meet important environmental and economic goals. Such revisions will help facilitate implementation of California's Colorado River Water Use Plan and its associated Quantification Settlement Agreement.

CONTINUED IMPLEMENTATION OF CALIFORNIA'S COLORADO RIVER WATER USE PLAN

As Metropolitan and other California users of the Colorado River continue efforts to reduce demand per California's Colorado River Water Use Plan (formerly entitled the 4.4 Plan), funding will be sought to support additional projects, such as conjunctive use facilities in Southern California, and other programs critical to implementation.

SALINITY

Metropolitan will continue to support funding for salinity management programs.

WATERSHED ACTIVITIES

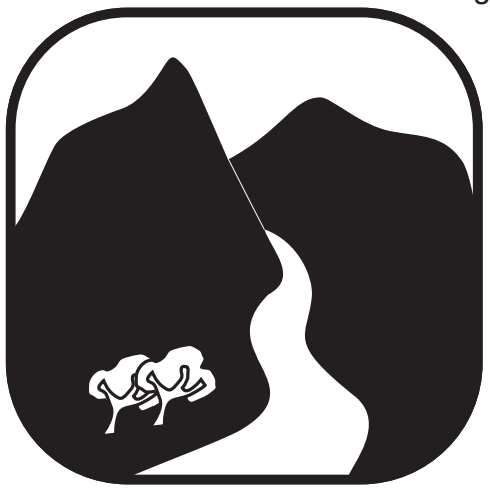
Community Partnering Program

Metropolitan continues to expand its focus on protecting California's watersheds. The impacts that management of a watershed have on soil productivity, flood safety, water quality, water quantity, and wildlife habitat both within the watershed itself and downstream are significant.

Metropolitan provides seed money through its Community Partnering Program (CPP) to further protection of watersheds. Under the CPP, sponsorships are provided for water-related activities such as public forums, educational and research programs, exhibits and other community-based events. Memberships in national, state, regional and local associations that support Metropolitan's corporate mission also are eligible, as well as innovative conservation programs. Three key CPP-funded activities are presented here. A list of CPP recipients of Metropolitan co-sponsorships for educational conservation and watershed programs is presented in the Appendix.

Arroyo Seco River

The Arroyo Seco waterway courses 21 miles from the San Gabriel Mountains to the juncture of the Los Angeles River near Mount Washington. Restoring the watershed can improve the quality of water that percolates underground, enhancing the ability to store high-quality supplies that can be called upon during a drought. Metropolitan supported the Urban & Environmental Policy Institute, a community-oriented institute that aims to make the Arroyo a test case for river renewal.



Watershed Management

Ballona Watershed

Metropolitan will help develop a "green map" of the Ballona Watershed, which includes sections of West Hollywood, Beverly Hills, Los Angeles, Venice, Inglewood, Beverly Hills, Culver City, and Santa Monica. The map shows current and extinct waterways, wildlife migration routes, water sources, wetlands, alternative transportation corridors, native plants and animals, and green-friendly businesses in the watershed. The map will be used to show the relationships between natural and built environments.

Sacramento River Watershed

Metropolitan supports the Sacramento River Watershed Program to help preserve and enhance one of the nation's largest and most critical watersheds. The Sacramento River Watershed supplies drinking water to roughly two-thirds of all Californians. The Sacramento River, via the Bay-Delta, yields more than 35 percent of the state's developed water supply. The funds will be used to help finance production and distribution of public service announcements to educate the public about the need to protect the watershed.

The watershed program was founded in 1996 to bring together public and private stakeholders, including representatives of agricultural, environmental, and urban interests. The program encourages these interest groups to come together in search of workable solutions to watershed management in addressing issues that impact the various water users.

L.A. and San Gabriel Rivers Watershed Council Water Augmentation Study

Metropolitan is currently participating in a Water Augmentation Study initiated by the Los Angeles and San Gabriel Rivers Watershed Council. The study looks at how to augment water quantity and improve water quality in the watershed and has acquired roughly $2 million in grants and contributions to ensure that planned increases in groundwater recharge with stormwater runoff do not impair local groundwater quality. Partners in the study include eight local, state, and federal agencies in a unique partnership to use local runoff wisely and to enhance the watershed.

Metropolitan has embraced watershed issues as a stakeholder and is a member of the Los Angeles and San Gabriel Rivers Watershed Council and serves as a liaison to its board of directors.

Santa Ana Watershed Project Authority Memorandum of Understanding

Metropolitan entered into a Memorandum of Understanding (MOU) with the Santa Ana River Watershed Project Authority in June 2000 to outline a collaborative approach regarding water resource planning. The MOU provides a framework for maximizing the water supply and quality benefits in the Santa Ana River watershed and Metropolitan's service area, particularly with respect to surface water, groundwater, recycled water, water conservation, watershed management, and imported water.

Total Maximum Daily Loads

Metropolitan is interested in the development of Total Maximum Daily Load (TMDL) programs and considers the TMDL process an important tool for restoring impaired sources of drinking water supply and encouraging source water protection.

A TMDL is a determination of the amount of pollutant that can be discharged to a body of water from various pollutant sources and still ensure that ambient water quality standards are met. TMDLs are required under the Federal Clean Water Act for surface water bodies that are polluted and do not meet ambient water quality standards. Implementation of the TMDL includes strategies to reduce pollutant discharges and clean up the water body.

Metropolitan supports the TMDL process and has submitted comments to the EPA with recommendations for making the TMDL program more effective for achieving source water quality protection for drinking water sources.

Metropolitan is currently participating in stakeholder groups and workshops to provide input to the development of state and federal TMDL requirements.

Calleguas Creek Watershed Management

Metropolitan member agency Calleguas Municipal Water District (CMWD) is currently working with a variety of agencies, including Metropolitan, on a proposed chloride TMDL to benefit the Calleguas Creek watershed. CMWD is currently working with the Calleguas Creek Watershed Management Plan, a public-private alliance to develop an integrated strategy for the sustainable development of the Calleguas Creek watershed and its resources.

CLIMATE CHANGE

Since Metropolitan's Climate Change Workshop in May 2000, which brought together internationally known experts to discuss their predictions for shifting weather patterns based on global warming trends, both the Department of Water Resources (DWR) and CALFED began to assess the water supply impacts of climate change.

DWR began its assessment in a June 2001 meeting of the California Water Plan Update 2003 Advisory Committee. The group, comprised of water resource leaders and stakeholders from throughout California, was briefed by national and state experts on the potential impacts of climate change on California's water systems. They identified climate change as one of the "key drivers and constraints for considering future water management scenarios." The California Water Plan Update in 2003 will include a chapter on climate change.

In November, Metropolitan hosted a DWR workshop on drought preparedness.

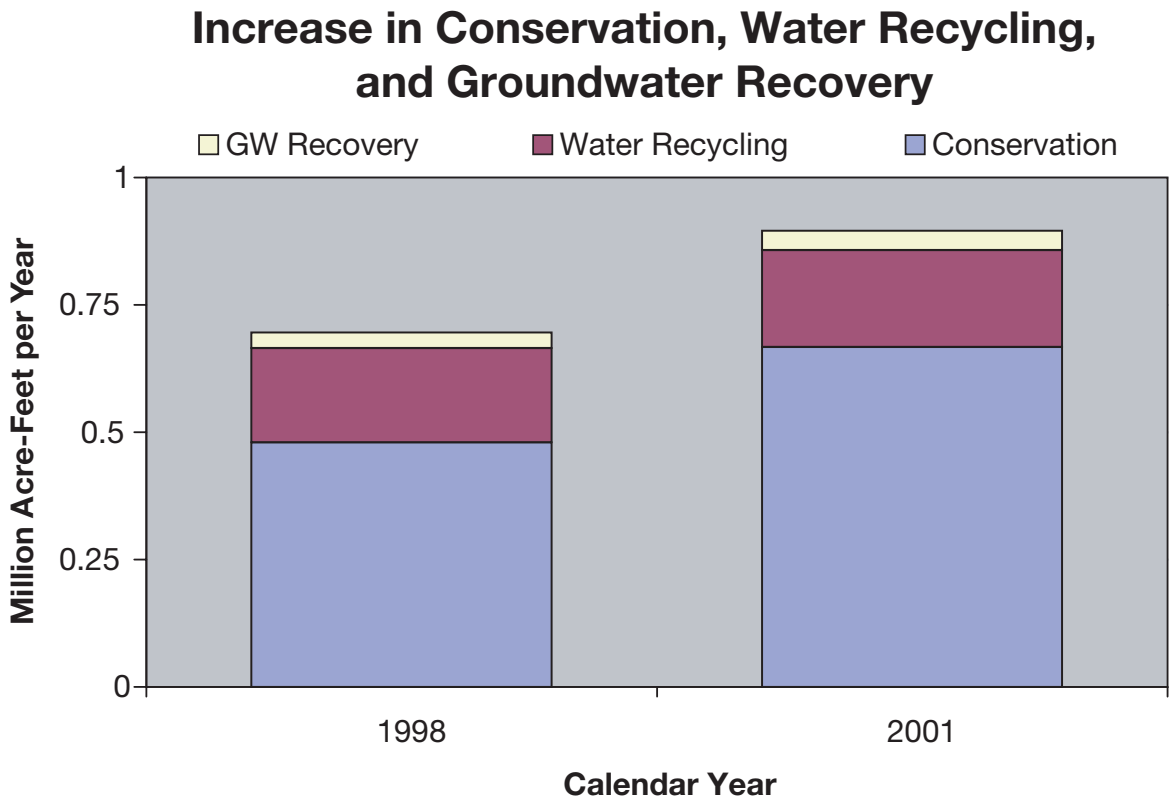
CALFED also began to explore climate change impacts. At a workshop on climate change and the Bay-Delta, CALFED announced its intention to publish a white paper to lay the groundwork for future research. The white paper, written by scientists from government and research institutions, is expected to be the first of many CALFED white papers on climate change impacts to habitat restoration, levee stability, and water supply among other topics.

San Luis Reservoir during drought.

INCREASES IN CONSERVATION, WATER RECYCLING & GROUNDWATER RECOVERY

Section 130.5 (a) (2) of the Metropolitan Water District Act:

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



Conservation includes: active conservation, passive conservation (1998 model estimate), and price effects.

PUBLIC COMMENT EXCERPTS

Public Comments at the December 10, 2001 Annual Public Hearing to Review Metropolitan's Urban Water Management Plan for Adequacy in Achieving an Increased Emphasis on Cost-Effective Conservation, Recycling, and Groundwater Recharge.

"I'm here to congratulate you on your ability to work with the groundwater agencies in improving the water supplies, and the water reliability for all of us in Southern California. AGWA (Association of Ground Water Agencies) is particularly pleased to see that working effort, and we at AGWA are committed to continue to work with Metropolitan to develop new programs. As you know, we've identified something like 1.5 million acre-feet of conjunctive use of potential in your service area. We think its time to move forward to develop as much as we can…From the Orange County Water District's standpoint, you have a number of water management programs, which we participate in. They are great programs. I think they are all mutually beneficial…I want to mention the Seasonal Storage Program, which has been sort of a hallmark, I think, of your water management activities. We are part of your largest customer in that area. We take in replenishment water, surplus water basically, and put it into our basin and that relieves your requirement to deliver firm water. On the average we take about 60,000 acre-feet per year in that fashion…We also, have a Cyclic Storage Program. We are one of few water agencies within Metropolitan that has a program. We currently have about 53,000 acre-feet in storage there. This is a program which we implemented a couple of years ago. You are able to make deliveries of replenishment water when you don't have any, because it is already stored in our basin. So this last summer we were able to access that account, took water from that account during a time when you couldn't provide it otherwise. So this was very beneficial to us, and also to Metropolitan."

– William R. Mills, General Manager, Orange County Water District/Chairman, Association of Ground Water Agencies

"I want to talk first about the (San Diego County) Water Authority and the way we have taken advantage and participated in the programs Metropolitan has in place to help us develop our local resources. The first thing is conservation. The Water Authority is active in participating in the Conservation Credits Program through Metropolitan and we've saved 35,000 acre-feet through our conservation programs…In the area of recycling, we receive funding from the state and the Local Resources Program. We have 18 facilities on line in San Diego. Last year they produced almost 17,000 acre-feet of recycled water for beneficial use. Four more will be going on line in 2002. We are very active in that program. In groundwater recovery, we have two very active programs in San Diego, the Oceanside Program, and the Sweetwater Program, which are generating water from brackish ground water…Metropolitan has been an active member of the WateReuse Association for a number of years. They (Metropolitan) have provided financial support through their dues on an annual basis. Probably just as importantly, they have provided staff to assist in the business of the WateReuse Association. The Association relies heavily on volunteer support to make things happen."

– Bill Jacoby, Water Resource Manager, San Diego County Water Authority/WateReuse Association, California Section, Board of Trustees

PUBLIC COMMENT EXCERPTS

Public Comments at the December 10, 2001 Annual Public Hearing to Review Metropolitan's Urban Water Management Plan for Adequacy in Achieving an Increased Emphasis on Cost-Effective Conservation, Recycling, and Groundwater Recharge.

"I think it comes as no surprise that I believe that Metropolitan has always been a leader in conservation. And I believe that Met has been a leader nationwide in this field…The most recent MWD board action, which was to approve an additional $4 million for the region-wide Commercial Institutional and Industrial program, was to me a demonstration of MWD's typical leadership…As many of you know, the California Urban Water Conservation Council follows the conservation programs of all water member agencies with great interest. The Council now has 271 signatories, who have signed a memorandum of understanding…MWD is one of our charter signers of this document, and continues to this day, to be one of our most active participants in the Council…One of the projects undertaken by the Council is the database-backed web site, where water agencies statewide report their information on BMP (Best Management Practices) programs conducted to date. Not only are program activities reported, but also the budgeted expenditures for those BMP programs. By way of comparison, I thought you might find these statistics relevant to assessing Metropolitan's commitment under SB 60. Our database system reported for the combined 1999-2000 reporting years that statewide $53.8 million was spent by wholesalers in the state of California. Metropolitan's expenditure during the same period are roughly 60% of those numbers. So I think it's a clear demonstration that Metropolitan is a very prominent force in this state for conservation, and I am very please to be here today to reinforce our opinion of that commitment."

– Mary Ann Dickinson, Executive Director, California Urban Water Conservation Council

"The Santa Ana Watershed Project Authority (SAWPA) represents the Santa Ana River Watershed. A majority of the area is a part of the Metropolitan Water District of Southern California…MWD has long been a leader in the development of water resources in Southern California and throughout the world. The first groundwater desalter in Southern California was the Arlington Desalter, partially funded by MWD. These efforts continue. In this region, the Chino Desalter and the Menifee Desalter both began operations within the last couple of years. Their support through significant funding is ongoing. Groundwater storage has also been a significant effort. In this region they have funded efforts in both the Chino and Orange County basins that will ultimately lead to more development of local resources. Ongoing efforts in conservation have also made a significant impact on the region. This last year MWD has entered a partnership with SAWPA to coordinate and plan together to develop the water resources of the region. This has led to a significant commitment of time and resources in an attempt to plan effectively with other agencies for the future. All of these efforts add up to a significant commitment to the water resources of Southern California. I commend them…MWD has consistently attempted to work together in a cooperative way to help us and the other agencies in our region achieve the common objective of a safe and reliable water supply."

– Joseph Grindstaff, General Manager, Santa Ana Watershed Project Authority (comment submitted in writing)

SUMMARY OF METROPOLITAN'S BEST MANAGEMENT PRACTICES (BMP) CONSERVATION PROGRAMS

BMP Number	BMP Name	Metropolitan Program Description	Metropolitan Program Activities	Activity Quantities and Dollars Through 6/30/2000		Activity Quantities and Dollars **FY 2001**	
1	Residential Water Surveys	Financial support for surveys, retrofits, and research & development	Surveys	57,734	$1,730,010	4,362	$49,925
			Toilet Devices Distributed	1,128,994	$1,300,250	1,202	$3,186
			Residential R&D (projects)	8	$299,799		
2	Residential Plumbing Retrofits	Financial support for retrofits and distributions	Low Flow Showerheads distributed	2,958,627	$12,367,130	2,302	$8,679
			Faucet Aerators distributed	204,792	$204,792	6,679	$5,513
3	System Water Audits, Leak Detection	Distribution System Leak Detection Audits	MWD surveys own pipes & aqueducts	annually	$2,800,000	annual	$350,000
			MWD water audits and leak detection for Member Agencies	6	$280,000		
4	Metering and Commodity Rates	All connections metered		N/A	yes	N/A	yes
5	Large Landscape	Financial support for retrofits, surveys, education, and research & development	Audits Conducted	1,305	$613,379	225	$53,062
			Moisture Sensors	499	$132,329	0	$0
			Irrigation Controllers	45	$279,406	0	$19,600
			Central Controllers	4	$462,664	0	$28,028
			Protector del Agua Graduates	8,455	$635,201	2,625	$248,400
			Landscape Education	24	$45,485		
			Circuit Rider Program (cities)	240	$162,250		
			Landscape R&D (projects)	10	$278,558	0	$46,028
6	High Efficiency Washing Machines	Financial support for rebates	Res. High Efficiency Washers Rebated via Member Agencies	9,141	$296,680	3,980	$156,800
			Res. High Efficiency Washers rebated via Energy Utilities	3,512	$122,920	4,548	$159,180
7	Public Information	Materials & programs provided		N/A	$10,678,160	N/A	$350,000
8	School Education	Full range of school curricula		N/A	$6,034,157	N/A	$630,000
9	Commercial, Industrial, Institutional	Financial support for retrofits, surveys, workshops, and research & development	Ultra Low Flush Toilets	26,000	$1,560,000	5,628	$305,880
			Urinals	500	$37,556	64	$3,480
			Flush Valve Kits	185	$2,775	0	$0
			Cooling Tower Retrofits	167	$83,500	54	$19,500
			Clothes Washer Rebates	1,852	$185,200	1,559	$103,300
			Surveys	905	$650,000		
			Workshops on Commercial Retrofits	7	$7,000		
			Commercial Industrial & Institutional R&D (projects)	10	$325,071		
10	Wholesale Agency Assistance	Financial support and assistance provided for BMPs 1-9 and 11-14		N/A	See Total Below	N/A	See Total Below
11	Conservation Pricing	Commodity rate structure in place		N/A	yes	N/A	yes
12	Conservation Coordinator	Staff size has varied from 6 to 23 people		N/A	$8,000,000	N/A	$784,000
13	Water Waste Prohibition	Exempt		N/A	N/A	N/A	N/A
14	Residential ULFT Replacements	Financial support for retrofits and rebates	Toilets rebates for retrofits	1,742,025	$94,579,438	113,651	$7,939,440

Total Spent by Metropolitan Water District:	**$144,154,000**		**$11,264,000**
TOTAL SPENT BY METROPOLITAN WATER DISTRICT THROUGH FY 2001:			**$155,418,000**
(Totals have been rounded)			

METROPOLITAN'S GROUNDWATER STORAGE PRINCIPLES

Regional Benefit - Groundwater storage programs must provide regional benefits to increase dry-year supply [in accordance with the board's Water Surplus and Drought Management Plan] and reduce capital costs associated with Metropolitan's distribution system. Benefits must outweigh the risks involved with developing the program.

Partnership - Groundwater storage programs must have strong local support in order to be successful. Partnership might also involve coordination of funds from other sources (e.g., state/federal funds).

Address Local Needs - When developing groundwater storage programs, Metropolitan must consider the individual needs of the groundwater basin and local communities. Programs should consider issues such as water quality, reliability of supply, financial benefits, and groundwater level.

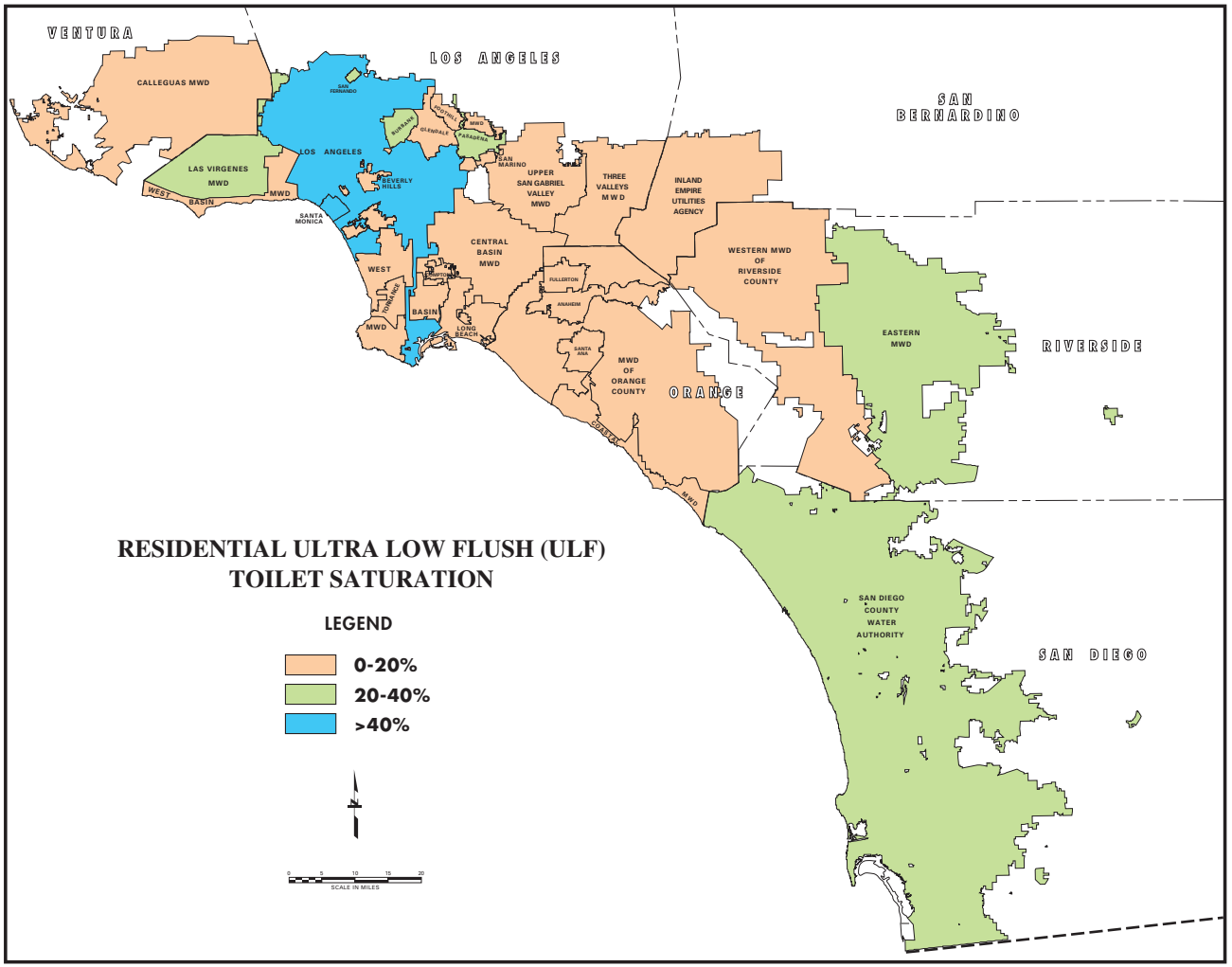
No Negative Water Supply or Water Quality Impact - Groundwater storage programs should be designed so there are no negative water quality or supply reliability impacts to Metropolitan's member agencies.

Financial Integrity - Programs should ensure the financial integrity of Metropolitan and its member agencies consistent with the Strategic Plan Policy Principles (Principles) approved by the board on December 14, 1999. The Principles will be included in the new Strategic Plan. Investments made by Metropolitan for storage will not be used by local agencies to reduce their demands for Metropolitan's imported supply in a manner that threatens financial integrity. Participating member agencies would commit to the purchase of fixed amounts of imported water from Metropolitan.

Phased Approach - Groundwater storage programs should be implemented in phases. At first, smaller-scale programs should be designed to meet overlying demand in lieu of Metropolitan's surface deliveries. As the programs are operated, levels of trust can be established and technical issues resolved. If successful, these programs can be expanded to the point where groundwater can be exported to other parts of the service area.

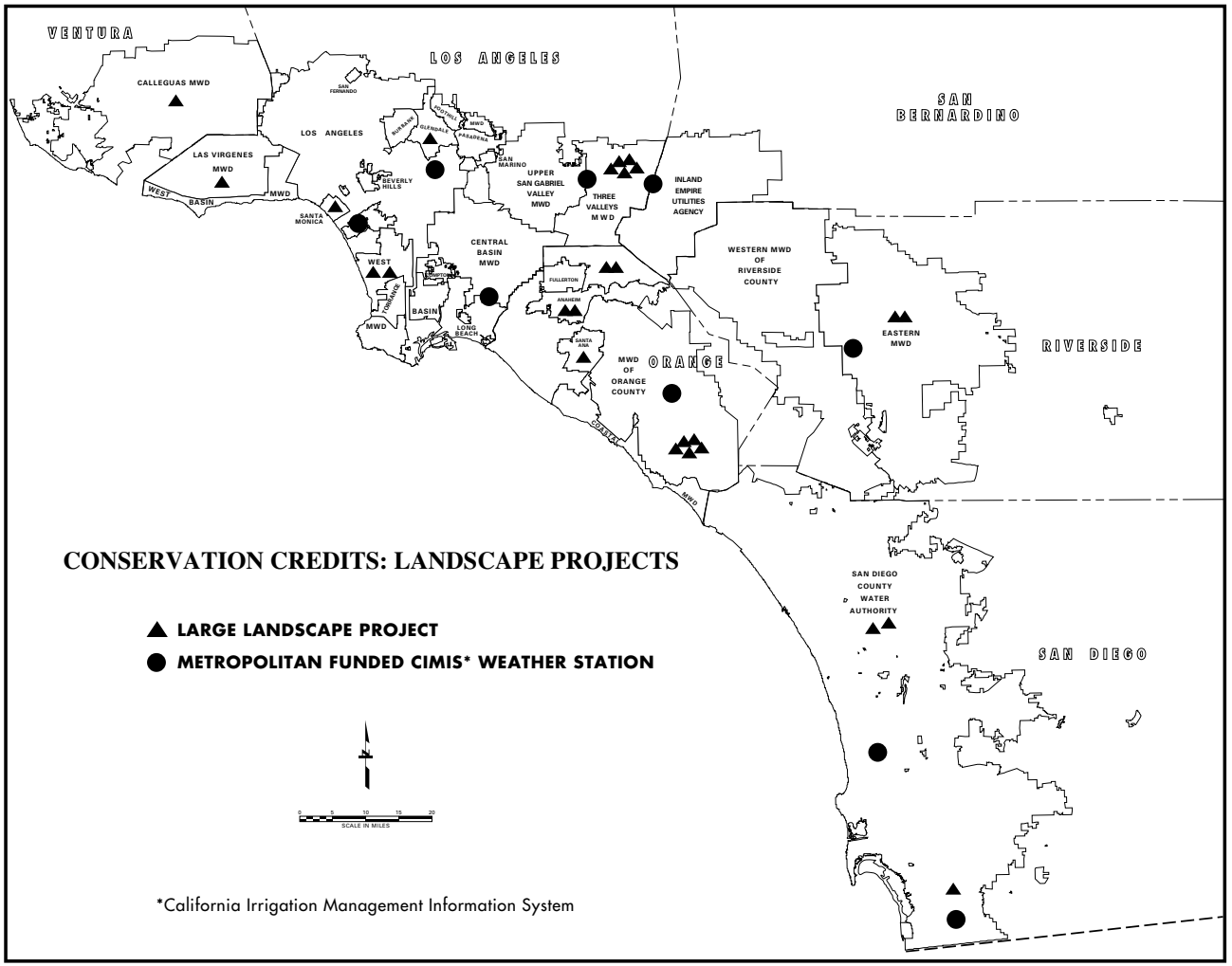
Shared Risk - There are risks associated with developing any water resource program, including groundwater storage. Metropolitan should be willing to share the appropriate risk of implementing groundwater storage programs with local entities to the extent benefits outweigh the risks.

ULTRA-LOW-FLUSH TOILET SATURATION



Saturation is used to describe the percentage of potential toilet retrofits that have actually exchanged existing high water-using toilets for ultra-low-flush models. For example, if there is a 40 percent saturation in an area, that means that 40 percent of all the homes or businesses that previously had non-conserving toilets have had them replaced with water-conserving models, leaving 60 percent still to make a change.

LANDSCAPE PROJECTS



Metropolitan offers financial assistance to its member agencies for the purchase and installation of landscape retrofit equipment that saves water and improves irrigation efficiency. Landscape retrofits have included moisture sensors, controller upgrades, and centralized computer-controlled irrigation systems. Metropolitan maintains urban CIMIS stations to support its landscape programs. It also funds, develops and coordinates training and education programs for landscape workers and professionals.

COMMUNITY PARTNERING PROGRAM RECIPIENTS

Recipients Of Community Partnering Program Co-sponsored Educational Conservation/Watershed Programs

Arroyo Seco River Restoration Project (Urban & Environmental Policy Institute)
Restoration case study of the 21-mile Arroyo Seco waterway, and forum on Los Angeles/San Gabriel rivers watershed issues. Institute is located on Occidental College campus.

Ballona Creek Watershed (City of Santa Monica)
Design of phase II of the "Green Map." This urban ecological map highlights natural, man-made and cultural sites along the Ballona Creek corridor; sponsorship included community outreach program.

Blue Planet Foundation
Development of water learning center at the Discovery Museum of Orange County; creation of Santiago Oaks watershed ecosystem education center; and the annual water festival.

California Water Awareness Campaign
Educating the general public on water conservation issues and the Campaign's longstanding May Water Awareness Month program.

Chino Basin Water Conservation District
Exhibit (Aquadome) for a new water conservation museum; and a series of environmentally focused conservation workshops for elementary school students.

City of Redondo Beach
Development of a 6,000 square-foot Xeriscape garden at City Hall's central plaza that demonstrates water efficient landscaping concepts.

Coalition for Urban/Rural Environmental Stewardship
Promotion of stewardship practices to protect water quality in the San Joaquin and Sacramento River watersheds, as well as outreach for Orange County's Newport Bay watershed.

El Dorado Nature Center
Development of Nature Center's educational curriculum for the Adopt-a-Beach program, which educates local teachers and volunteers about the effects of pollution on ground and surface waters of the San Gabriel and Los Angeles river watersheds.

Environmental Charter High School
Development of a yearlong water curriculum for 100 ethnically diverse and economically disadvantaged ninth-graders, with technical support from the University of Southern California's Wrigley Institute and UCLA's Institute on the Environment.

Heal the Bay
Ongoing Environmental education program for 10,000 K-4 students. This annual program includes workshops on marine pollution, watershed, urban runoff, storm water and sewer system issues, as well beach ecology studies during field trips.

Las Virgenes Municipal Water District
Upgrading a water-wise demonstration garden at the Agoura Hills/Calabasas Community Center.

Las Virgenes Unified School District
Educating 1,000 students (fifth-graders) on environmental stewardship during a weeklong watershed education camp.

Long Beach Water Department
Ongoing Water Ambassador Program in which senior citizens take the lead at providing water-related educational activities at community events and for elementary school students.

Los Angeles & San Gabriel Rivers Watershed Council
Ongoing program that includes preservation, restoration and enhancement of both rivers through education, research, planning and mediation. It also included research for a book, titled "Water Use and Management in the Los Angeles Region."

COMMUNITY PARTNERING PROGRAM RECIPIENTS

Municipal Water District of Orange County (MWDOC)
Development of a curriculum for "Water Wonders—Water Field Trip in a Box" which teaches fifth- and sixth-grade students about water-related issues. MWDOC's education programs reach some 120,000 students annually.

National Energy Foundation
Learning to be WaterWise ® education program educates students, teachers and family households on energy and water conserving technologies; 10,000 students annually benefit from the combined classroom environmental education activities.

National Engineers Week's Future City Competition
Competition for high school students to design and engineer a futuristic model city that includes solutions to air and water pollution problems, and recommendations for water and energy conservation.

National Resources Defense Council
Demonstration project to retrofit its Santa Monica regional headquarters with a greywater irrigation system, ULFTs with purified greywater, and waterless sanitary fixtures. End-use metered savings will be made available to the general public.

Resource Policy Institute
Ongoing workshop and forum on water conservation and water resources infrastructure issues.

Riverside-Corona Resource Conservation District
Mobile water management laboratory provides water conservation and management field evaluation; tests sprinkler and irrigation systems; provides education to farmers and landscapers on how to reduce deep percolation, run-off and power costs.

Riverside Municipal Museum
Development of water-efficient demonstration garden, in collaboration with Riverside Public Utilities. Since its creation in 1924, the museum (90,000 visitors annually), has highlighted discussion of local irrigation and canal projects.

Sacramento River Watershed Program
Community outreach awareness program to educate the general public on how to protect and enhance its local watershed.

San Gabriel Valley Foundation for Economic Growth
Ongoing water resources economic education program and economic outlook conference for the region's industrial water users.

Think Earth Environmental Education Foundation
Ongoing kindergarten through eighth-grade science program. Pilot service-learning project for high school science teachers and students that focuses on water related issues.

Upper San Gabriel Valley Municipal Water District
Irrigation retrofit program for Olive Middle School Sports Park, which demonstrates water conservation technology.

Vallecitos Water District
Educational water-wise puppet show "Wabby the Water Wabbit" for young children; entertains and educates kindergartners through third-graders in more than 100 public and private elementary schools in the [San Diego] North County Water Agencies region.

Western High School and Anaheim Beautiful
Development of water-use efficient Harmony Garden includes xeriscaping, drip irrigation, soakers and micro-mist emitters.

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 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.

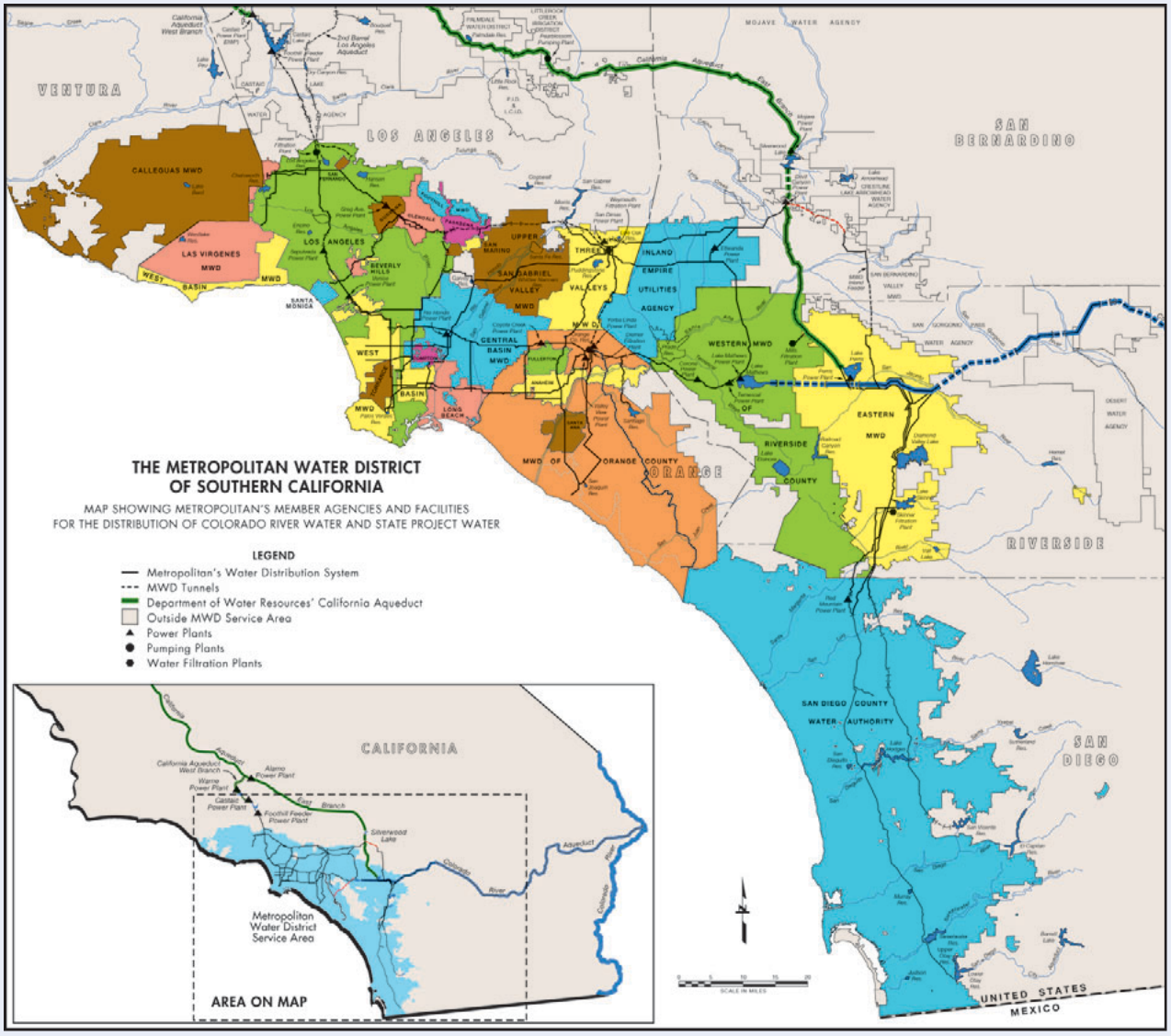
(b) Nothing in this section affects the powers and purposes of the Water Replenishment District of Southern California or any other groundwater management entity, the County of Los Angeles, local public water purveyors, or the United States Army Corps of Engineers.

Annual Progress Report to the California State Legislature • February 2003

ADAPTABILITY:
Achievements in Conservation, Recycling and Groundwater Recharge

Metropolitan Water District of Southern California
www.mwdh2o.com

Metropolitan's Service Area



About Metropolitan

Metropolitan Water District of Southern California is a public agency established in 1928 by the state Legislature to secure imported water supplies and to educate residents on water-related issues. Metropolitan is governed by a 37-member board of directors, representing 26 member public agencies that serve 18 million people living in six counties stretching from Ventura to San Diego.

As the region's water wholesaler, Metropolitan draws supplies through the Colorado River Aqueduct, which Metropolitan owns and operates, and from Northern California via the State Water Project. Metropolitan also is engaged in long-term water use efficiency and water management programs that are further described in this report.

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

Cover: Bitter Gooseberry Ribesamrum © 2001 G. F. Hrusa, California Dept. of Food & Agriculture, Botany Laboratory
Header graphic (all pages): Island False Bindweed (Calystegia macrostegia ssp. cyclostegia) © 1995 Br. Alfred Brousseau, Saint Mary's College

Table of Contents

For more information about this report, contact: Kathy Cole, Metropolitan's legislative representative, at (916) 650-2642 or kcole@mwdh2o.com

The flowers pictured throughout this report are native to California and found in many Southern California locales. They give a sense of the variety and beauty available through the use of native plants. Their pictures came from the CalFlora Web site — www.calflora.org. This organization provides information on California plants for conservation, research and education and participates in the University of California at Berkeley Digital Library Research Project.
A resource guide for more native plant information is contained in the Appendix.

1. Executive Summary Pg 2
2. Achievements Pg 6
3. System Reliability Pg 22
4. Colorado River Aqueduct and State Water Project Programs Pg 24
5. Water Quality Programs Pg 29
6. Public Participation Pg 32
7. Appendix Pg 36

Executive Summary

Ensuring reliability from generation to generation

Desert Four O'clock (Mirabiis multiflora var. pubescens)
© 1998 Charles Webber California Academy of Sciences

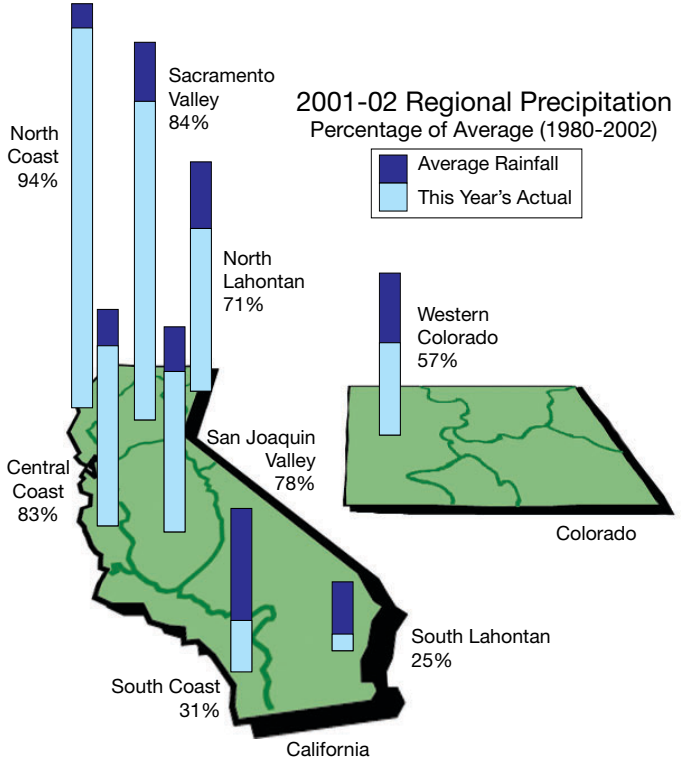
Metropolitan Water District of Southern California is proud to submit the third annual progress report to the state Legislature on water resource management programs to spotlight new achievements in water conservation, recycling and groundwater recharge. This annual report is a requirement of the 1999 amendment to the Metropolitan Water District Act (SB 60) and provides an opportunity to reflect and document progress from year to year.

In 2002, we found ourselves with headline-making weather as hot temperatures and little rain caused drought conditions in nearly half of the 48 contiguous states. Many parts of the Southland, including San Diego and Los Angeles, endured the driest rainfall season in more than 100 years. Nonetheless, the Los Angeles Times declared the Southland to be "Faring Well in Dry Spell" (Sept. 22, 2002).

Why was Southern California able to withstand this drought better than other areas in the West? The region's good fortune is credited to Metropolitan's integrated resources planning effort that has created a diverse resource portfolio, complemented by an aggressive conservation program.

Reassurances of reliability were not as resounding in the rest of the country. Many states found themselves with counties declared federal disaster areas because of the effects of drought. By contrast, Southern California expects to have a reliable water supply for the foreseeable future. As a prudent utility manager, Metropolitan has developed redundancy to protect the reliability of its entire water system. Two years ago, Metropolitan began aggressively preparing for the possibility that the Colorado River surplus supply could be curtailed, either by drought or the failure of the Quantification Settlement Agreement (QSA) regarding the use of Colorado River water in California. Metropolitan has maximized storage options and today has over two million acre-feet of water in storage.

The Colorado River Aqueduct and State Water Project provide a foundation for Metropolitan's water reliability. A cornerstone is built on ultra-low-flush toilets, water-efficient showerheads and appliances and other conservation measures, legions of water recycling projects and numerous agreements to transfer and store surplus water. The benefits from more than a decade of drought-proofing are paying off. And at just the right time.



Executive Summary

California faces a reduction of about 15 percent of its draw of Colorado River water. Metropolitan, having a lower priority right to the Colorado River in California, would bear the major portion of this reduction. Pursuant to the 1964 U.S. Supreme Court Decree in *Arizona v California* and the Boulder Canyon Project Act, California must live within its 4.4 million acre-feet basic annual apportionment of Colorado River water in the absence of surplus Colorado River water and unused Colorado River water apportionments of Arizona and Nevada.

If an agreement is reached on how California is to reduce its use of Colorado River water that is acceptable to the U.S. Department of the Interior and the other Colorado River basin states, California will be allowed a weaning period along with a "soft landing" that includes continued access to surplus water, as available, by Metropolitan for the next 15 years. The amount of surplus water that will be available is uncertain because of continuing drought conditions in the Colorado River basin.

A framework for the QSA moved forward in late October with approvals from the respective water boards required by year's end. The Agreement was not reached and California's access to surplus water has been suspended until such time as either the Agreement is executed or such other actions as are required by the Secretary of the Interior are completed. Failure to reach this milestone means that Southern California will have to expedite longer-term plans to meet reliability needs.

Metropolitan's strategy of managing demand has created a diversified water resource portfolio. Many of these programs will be discussed in greater detail in this report. The latest entry in the expanding resource portfolio is Metropolitan's outdoor conservation campaign. Launched in summer 2002, the campaign is designed with two objectives: to encourage more efficient outdoor irrigation schedules and, at the same time, to promote appreciation and use of native and drought-proof plants by reintroducing an exciting Southern California style of landscaping. This program marks an expansion of Metropolitan's successful indoor conservation program to outdoor conservation in order to tap into an area with great potential for savings. Between 30 to 70 percent of residential water consumed in Metropolitan's service area goes outside to water the landscape.

The theme of recapturing California's natural landscape heritage by returning to the use of native and drought tolerant plants has positive implications for water supply managers. Adapting to our natural surroundings—a semi-arid region—has produced some of the most successful water management programs.

Last year, Metropolitan's first Innovative Conservation Program (ICP) was completed, providing more than $200,000 for 10 promising conservation ideas. As a result of the program, two new conservation tools—a recirculating X-ray film developer and a pressurized water broom—were adopted within Metropolitan's rebate program. A second ICP is planned for 2003. Metropolitan's board has also approved additional rebates for dual-flush toilets and rebates for evapotranspiration (ET) landscape irrigation controllers, and has approved a hotel/motel/restaurant customer water conservation education card program.

Turning ocean water into drinking water became more viable with the introduction of Metropolitan's Seawater Desalination Program. Launched in the summer of 2001, the program objective is to provide financial and technical support for the development of cost-effective seawater desalination projects.

Metropolitan launched an on-line index to guide outdoor landscape irrigation — www.mwdh2o.com

Chuparosa (Justicia californica) © 2002 Glenn Vargas California Academy of Sciences

Executive Summary

Funding partnerships extend Metropolitan's resources into the community

Chaparral Gilia (Gilia angelensis)
© 2000 Wayne D. Johnson

A call for proposals produced five projects by member agencies which show promise and were evaluated by Metropolitan's review committee. Collectively, the projects could produce about 126,000 acre-feet of drinking water per year. The program is in its early stages and the qualifying projects are subject to approval by Metropolitan's board.

Extending the usefulness of existing supplies is the purpose of Metropolitan's water recycling program that, to date, has awarded approximately $95 million in performance-based grants. In fiscal year 2002, Metropolitan-supported programs, along with member agency projects independent of Metropolitan funding, produced about 201,000 acre-feet of recycled water. To put this amount into perspective, it is equal to roughly one-third of the water used annually in the city of Los Angeles.

In 2002, Metropolitan entered into two groundwater agreements that allow for the storage of 16,000 acre-feet of imported surplus water for future use. Metropolitan also is finalizing five more programs that collectively will increase groundwater storage capability by 192,000 acre-feet.

A common theme throughout all of Metropolitan's projects is partnerships that underline Metropolitan's commitment to outside public involvement. Throughout the course of these partnerships, all of the agencies and organizations are interdependent, drawing on each other's expertise and resources.

Metropolitan's Community Partnering Program—which continued in its third year to provide grants for conservation-themed projects—awarded $550,000 for 74 projects that range from a children's water festival to a habitat restoration study at a former duck farm along the San Gabriel River.

Partnering opportunities extend beyond Southern California boundaries with investments in Northern California projects. In 2002 Metropolitan gave a $10,000 grant to the Sacramento River Watershed Program to help, through public education, in the preservation of one of the nation's largest and most critical watersheds. This money is in addition to the $30 million Metropolitan invested in projects aimed at improving environmental conditions in the San Francisco-San Joaquin Bay-Delta watershed. The Bay-Delta is critical to California's economy and provides drinking water for two-thirds of the state.

All of these projects amount to seeds for savings and reliability. Metropolitan has long realized the value of planning today for tomorrow's benefit.

Average Per Capita Water Use
(gallons per capita per day)

Seattle	103
San Francisco	106
Tuscon	135
El Paso	136
Portland	137
Los Angeles	**140**
San Diego	**150**
Santa Cruz	155
Boulder	157
Missoula	158
Oakland	160
Albuquerque	182
Phoenix	184
Denver	228
Salt Lake City	284
Las Vegas	307

Source: American Water Works Association

Executive Summary

Metropolitan-Assisted Local Resources Cumulative Investment Through Fiscal 2002

			Fiscal 2002 Production
Active Conservation [1]	$171 million	To Produce	68,000 AFY
Water Recycling	$95 million		75,000 AFY
Groundwater Recovery	$26 million		32,000 AFY

Metropolitan-Assisted Groundwater Programs Cumulative Investment Through 2002

			Dec. 2002 Storage
Contractual Storage [2]	$28 million	To Store	245,800 AF
Water Rate Incentives [3]	$282 million		

1 "Active conservation" is water saved directly as a result of conservation programs by water agencies. In contrast, "passive conservation" is water saved as a result of changes in efficiency requirements for plumbing fixtures in plumbing codes.

2 Contractual storage investments are Metropolitan funding of the Metropolitan-Calleguas Municipal Water District Groundwater Storage Conjunctive Use Program in the North Las Posas groundwater basin.

3 "Water rate incentives" represent the discount in water rates Metropolitan provides to its member agencies to encourage groundwater storage. The calculation methodology for water rate incentives has been updated and refined for this report. Prior year calculations for cumulative water rate incentives are revised as follows: through 2000 = $237 million; through 2001 = $264 million.

AFY = acre-feet per year. 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.

Landscaping using California native plants adds color and a sense of history

California Sycamore (Platanus racemosa) © 1998 Charles Webber, California Academy of Sciences

Timeline of Achievements

Prior to 1960

Incentives first provided for delivery of wet year supplies to encourage groundwater recharge

1974

Colorado River Basin Salinity Control Act

1976-1977

Metropolitan initiates several conservation incentive programs

1981

Implemented Interruptible Program, providing a reduced price incentive to encourage storage of surplus water

1982

Launched Local Projects Program

1985

Adopted first Regional Urban Water Management Plan (RUWMP — This is updated every five years)

1988

Launched Toilet Retrofit Program

Launched Conservation Credits Program

1989

Implemented Seasonal Storage Program

1990

Adopted RUWMP update

1991

Launched Groundwater Recovery Program

Signed MOU establishing Conservation Best Management Practices

1990 - 1993

Imperial Irrigation District/Metropolitan water conservation program

Widespread implementation of the Toilet and Showerhead Retrofit Program

Initiated test program for water transfers between Metropolitan and Palo Verde Irrigation District

Metropolitan/Central Arizona Water Conservation District Groundwater Demonstration Program

1995

Adopted RUWMP update

Signed Las Posas Groundwater Storage Agreement

1996

Adopted Metropolitan's Integrated Resources Plan (IRP)

1998

Metropolitan staff appointed to serve as Watershed Council board liaison

Established new Local Resources Program for development of recycled water & recovered groundwater

Imperial Irrigation District (IID)/San Diego County Water Authority (SDCWA) water transfer agreement

Metropolitan/SDCWA exchange agreement re: IID/SDCWA Transfer

1999

Adopted Water Surplus and Drought Management Plan

SB 60 signed into law

Formed Salinity Management Coalition & hosted Salinity Summit I

Adopted Strategic Plan Policy Principles

Created Community Partnering Program

Final rule Colorado River offstream storage

Metropolitan adopted long-term Salinity Management Plan

Executed key terms for a Quantification Settlement Agreement

Timeline of Achievements

2000

Adopted RUWMP update

Hosted Watersheds Dialogue conference

On-going participation in Water Augmentation Study by L.A. & San Gabriel Rivers Watershed Council

Hosted Climate Change workshop

Received recognition from the National Drought Policy Commission

Launched the Innovative Conservation Program

Developed California's Draft Colorado River Water Use Plan

2001

First annual report to the Legislature on achievements in conservation, recycling & groundwater recharge

Salinity Summit II

Adopted new rate structure plan

Launched CII Region-wide Program

Initiated IRP update

SB 221 & SB 610 signed into law - linking development to supply reliability

Colorado River Record of Decision on Interim Surplus Guidelines

2001

Metropolitan/Arizona Interim Surplus Guidelines Agreement

Metropolitan/PVID Principles for Land Mgmt., Crop Rotation, and Water Supply

Metropolitan Land Purchase in Palo Verde Valley

Metropolitan approved funding for conservation/mitigation measures for Colorado River Transfers

Launched Community Partnering Program

Turned over Bolsa Chica property to state for wetlands and watershed protection

2002

Rebate provided for two millionth ULF toilet retrofit

Launched native plant and outdoor sprinkler index conservation outreach program

Metropolitan/Southern Nevada Water Authority Surplus Guidelines Agreement

Initiated efforts to secure 200,000 AF of 2003 transfer supplies from north of the Delta

2002

Initiated efforts to secure 2004 transfer supplies from the San Joaquin Valley

Completed agreements and environmental review for Kern Delta Water District Water Management Program

Completed first Innovative Conservation Program and initiated second program for 2003

Metropolitan issued "Report on Metropolitan Water Supplies" forecasting 20 years of reliability

Expanded activity in all phases of conservation rebate program

Began development of Water Education Center at Diamond Valley Lake

Adopted board principles on climate change

Began final negotiations with Sacramento Valley interests for 185,000 AF annually to contribute to Bay-Delta environmental needs and standards

Continued IRP update

Board approval of PVID Land Management, Crop Rotation, and Water Supply Program

Conservation

Metropolitan's 37-member board of directors operates in a public arena

Montia-Like Monkeyflower (Mimulus montioides)
© 2001 Steve Schoenig

Guiding Policies

Metropolitan is committed to providing high-quality water conservation programs and services. Since 1992, Metropolitan and its member agencies have invested more than $252 million in conservation programs within the region. Metropolitan's contribution alone is $171 million. The commitment to conservation continues to expand while the focus of programs has shifted to capture new innovative opportunities for savings.

Metropolitan's conservation policies have their foundation in two documents—Metropolitan's Integrated Resources Plan (IRP) and the Memorandum of Understanding Regarding Urban Water Conservation in California, to which Metropolitan is a signatory.

Metropolitan's leadership and support of conservation extends to the greater water community in California. It reaches into the legislative arena as well, where Metropolitan has been instrumental in supporting new policies that support conservation projects and programs. Metropolitan has been recognized for its efforts in the form of the "Gold Star" certification from the Association of California Water Agencies and several awards from the U.S. Bureau of Reclamation.

Metropolitan's adoption of a new rate structure includes a funding source dedicated to conservation, recycling, groundwater recovery and other local projects. The new rate structure became effective January 1, 2003 and includes two tiers that use price signals to encourage water agencies to invest in cost-effective conservation, water recycling, transfers, desalination and groundwater programs.

In addition, the two-tiered structure allocates a greater share of costs to Metropolitan's member public agencies that use more water in the future.

This new structure represents a departure from the previous structure in many ways, most notably in a pricing plan that gives member agencies more flexibility and choice in how they obtain water, while implementing an inclining block rate. The "Water Stewardship Rate" initially funds Metropolitan's Local Resources and Conservation Credits Programs and provides financial support to member agencies for furthering local water management programs.

The Conservation Credits Program

The backbone of Metropolitan's conservation program is the Conservation Credits Program initiated in 1988. Metropolitan contributes either one-half the program cost, or $154 per acre-foot of water conserved, whichever is less, to assist member agencies in exploring new program opportunities.

Conservation

Partnering with Agriculture

Parallel to its urban water conservation efforts, Metropolitan began a pioneering agricultural water savings program in 1990 with the Imperial Irrigation District (IID). To date, Metropolitan has invested more than $180 million to construct, operate and maintain these projects which will conserve more than 100,000 acre-feet of agricultural water every year for a minimum of 35 years (commencing in 1998). Calendar year 2002 water savings were 104,940 acre-feet.

Metropolitan entered into an exchange agreement with the San Diego County Water Authority (SDCWA) in 1998 to facilitate the transfer of up to 200,000 acre-feet of conserved agricultural water annually to urban Southern California if and when the Quantification Settlement Agreement (QSA) is executed. Under this agreement, SDCWA will receive from Metropolitan an amount of water equal to the amount of water conserved by IID under the 1998 SDCWA-IID Agreement for Transfer of Conserved Water.

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

From 1992 to 1994, Metropolitan conducted a test program involving farmers in the Palo Verde Valley served by the Palo Verde Irrigation District (PVID). Participants agreed to set aside a portion of their land, on a rotating basis, and save the water normally used for irrigation in exchange for payment by Metropolitan.

The program saved about 186,000 acre-feet of water from roughly 20,000 acres of farmland that were not irrigated. It is important to note that under this program no farm land is being "retired," and there is no conversion of agricultural land, nor loss of prime agricultural land.

With the success of the pilot program, Metropolitan's board authorized $94.3 million in October 2002 to initiate a full-scale 35-year land management, crop rotation and water supply program. At Metropolitan's request, farmers would stop irrigating between 7 to 29 percent of their land, on a rotating basis, securing about 8 to 36 billion gallons of water each year for Southern California. Farmers would receive a one-time payment of $3,170 per acre for each farmer's maximum non-irrigated acreage and an additional payment of $550, subject to escalation, for each acre not irrigated under the program in a given year.

As part of the agreement, Metropolitan would account for any potential negative economic impacts on the Palo Verde community by funding an estimated $6 million for local community improvement programs. The funds would be administered by a non-profit foundation selected by Palo Verde Valley community representatives.

The QSA provides for the program water to flow to Metropolitan. Absent the QSA, the program could require the concurrence of the Imperial Irrigation District and the Coachella Valley Water District, or the program could be implemented through other means.

Numbers

***33.2-miles** – Length of the Coachella Canal Lining Project*

***26,000** – Number of acre-feet that would be available by lining the Coachella Canal*

***23 miles** – Length of the All American Canal Lining Project*

***67,700** – Number of acre-feet of water per year to be saved by lining the All American Canal*

***16,000** – Number of acre-feet allocated to the San Luis Rey Indian Water Rights Settlement Parties*

***$180 million** – Investment made by Metropolitan to construct, operate and maintain conservation projects in cooperation with Imperial Irrigation District to date*

***104,940** – Acre-feet of agricultural water conserved in 2002*

***35 years** – Term of agreement with Palo Verde Irrigation District approved by board to transfer water saved by removing portions of land from irrigation*

Conservation

Coachella Canal Lining Project

California Poppy (Eschscholzia californica) © 1995 Br. Alfred Brousseau, Saint Mary's College

Coachella and All American Canal Lining Projects

The Secretary of the Interior is authorized to concrete line portions of the existing earthen All American and Coachella Canals. The conserved waters would become part of the water supply for Metropolitan's Colorado River Aqueduct.

Coachella Canal Lining Project

Metropolitan has an agreement with the California Department of Water Resources (DWR) to fund the Coachella Canal Lining Project. Under the agreement, DWR will reimburse Metropolitan for up to $74 million in environmental compliance, design, and construction costs for the project. Once complete, the 33.2-mile Coachella Canal Lining Project will conserve 26,000 acre-feet of water per year that would otherwise be lost to seepage and that will be available for transfer.

In March and April 2002, the necessary approvals were received from the U.S. Bureau of Reclamation and California Department of Fish and Game to begin the project. In April 2002, Coachella Valley Water District selected a design firm. Construction begins in 2003.

All American Canal Lining Project

Imperial Irrigation District has executed a funding agreement with DWR for the All American Canal Lining Project. Metropolitan will provide an advance of $450,000 to begin preliminary environmental and engineering work. These advanced costs will be reimbursed by DWR upon release of state funds. The 23-mile project will conserve 67,700 acre-feet of water each year that will be available for transfer.

Water made available through both projects will not only enhance Metropolitan's supply reliability, but will provide the water needed to settle a long-standing water dispute among the La Jolla, Pala, Pauma, Rincon and San Pasqual Bands of Mission Indians and the city of Escondido and Vista Irrigation District. Metropolitan has agreed to exchange water earmarked for the settlement parties.

CALFED Funded Grants in 2002

- Residential Washer Rebate Program - $925,000. This grant energized the market for high-efficiency clothes washers. Because of the program's popularity, grant funding was fully committed by November 2002.
- Bilingual Landscape Course Development - $100,000. This grant allows for the development of Protector del Agua course materials that teach water conservation techniques related to plants and irrigation to both professional and non-professional landscapers.

California Public Utilities Commission Grants

The CPUC made first-time grants available for energy conservation programs that in years past had been earmarked only for investor-owned utilities. Metropolitan, in partnership with the California Urban Water Conservation Council and other water agencies, was awarded $2.2 million for the installation of water-saving devices in small restaurants. Metropolitan and its member agencies will receive almost 75 percent of the funding, or $1.6 million, for the installation of 12,000 pre-rinse spray heads that save water and energy.

Conservation

Technical Workshops

Metropolitan hosted several technical workshops for member agency conservation coordinators to provide updates on conservation devices, test and research projects, and program approaches.

Hardware Retrofits and Other Services

- Retrofitted approximately 200,000 ultra-low-flush toilets (ULFT), bringing the total to over 2 million retrofits to date, saving roughly 23 billion gallons per year.
- Provided rebates for 13,000 high-efficiency clothes washers, bringing the total to over 30,000. High-efficiency washers save 90,000 gallons over their lifetime.
- Conducted 6,500 on-site surveys of outdoor/interior water use, identifying opportunities for water savings.

Extension of the Commercial, Industrial and Institutional Program

In May, Metropolitan's board authorized a time extension and a funding increase for the Commercial, Industrial and Institutional (CII) rebate program to fund the purchase of non-residential water conserving hardware, including ULFTs, urinals, water-efficient clothes washers and cooling tower retrofits. In August, the board also approved adding two new devices, developed under the Innovative Conservation Program, to the list of fixtures eligible for CII rebates. The new rebates are $2,000 for an X-ray developer recirculating device in hospitals and $100 for a pressurized water broom.

Innovative Conservation Program (ICP)

The first year of the ICP was completed in 2002 and provided a roster of new technologies, along with a better understanding of the market for conservation devices and promotional opportunities for new and existing programs. Other new concepts in water conservation were showcased and remain the subject of further refinement. In August 2002, Metropolitan's board authorized a second ICP for 2003. The application is available at www.mwdh2o.com.

New Programs

In August 2002, Metropolitan's board approved three new conservation program elements:

- Hotel/motel/restaurant customer education to provide free cards to businesses encouraging their guests to reuse bed linens and towels to save water. There will also be free "table-tent" cards for restaurants informing customers that water will only be served on request.
- Dual-flush toilets have been shown to save more water than standard ULFTs and are now given an additional $20 rebate on top of the existing $60 ULFT rebate. Dual-flush toilets operate at 1.6 gallons per flush for solids and 0.8 gallons per flush for liquids.
- Evapotranspiration (ET) irrigation controllers are now eligible for a $65 rebate per unit.

High-efficiency clothes washer

Numbers

***Two million** – ULF toilet retrofits*

***23 billion gallons** – Water saved by 2 million ULFTs each year*

***30,000** – High-efficiency clothes washers credited to the rebate program*

***6,500** – On-site surveys of interior/exterior water use this year*

***$1.6 million** – Funds received by Metropolitan from the California Public Utilities Commission for hardware retrofits in small restaurants*

***336** – Residential and professional landscape classes in water-wise landscaping*

Conservation

Water education programs provide hands-on learning experiences for school children

Cleveland's Shooting Star (Dodecatheon clevelandii ssp. clevelandii)
© 2000 Wayne D. Johnson

Education

During 2002, Metropolitan, in conjunction with its member agencies, made its education materials, activities and events available to more than 230,000 K-12 students and 1,300 teachers throughout the service area. Key programs included All About Water (grades K-3), Admiral Splash (grade 4), Water Ways (grade 5), Water Quality (grades 7-12), Water Politics (grades 9-12) and Water Works (grades 6-12).

Just over 3,000 grade 4-12 students participated in field trip programs at Metropolitan water treatment plants. Each experience featured a hands-on, assemble-and-take-down Source, Treatment and Distribution Model that allows students to become engineers and water planners at the same time.

In 2002, Metropolitan's Diamond Valley Lake Sixth-Grade Education Program welcomed more than 3,500 students. The program features interactive activities focusing on the biology, chemistry, geography/geology, environmental, and conservation issues involving the Southland's largest reservoir.

Metropolitan also launched a highly acclaimed program called, "Liquid Art" to inform adults about the history of water in Southern California as it is reflected in public art. Six gallery "shows" opened throughout the region and earned the cover story for Westways Magazine and the PBS program "Road Trip with Huell Howser. "The media exposure and exhibits reached millions throughout the region.

Memberships

Metropolitan continues to support water industry organizations with both financial contributions and staff participation. Metropolitan staff serve on the California Urban Water Conservation Council (CUWCC), CALFED subcommittees, California Water Awareness Campaign, the Southern California Water Dialogue, the Advisory Committee for the University of California's Center for Water Resources and the American Society of Mechanical Engineers/American National Standards Institute for plumbing fixture standards.

Metropolitan also has been involved in several nationwide studies that evaluate plumbing fixtures and new technology potential, and contributes annually to the American Water Works Research Foundation, as well as providing 50 percent of the CUWCC dues for its member agencies.

Research and Support

- Completed the Orange County Saturation Survey estimating the number and distribution of water-efficient fixtures in residential settings
- Reviewed available research on added water savings from dual-flush toilets and increased Metropolitan's rebate for dual-flush toilets by $20
- Initiated a bench test of three competing "ET" (evapotranspiration) -style irrigation controllers
- Maintained nine California Irrigation Management Information Systems (CIMIS) stations in support of several landscape programs
- Provided the services of two consultants to assist member agencies in tracking data from their centralized irrigation controller system retrofit projects

Conservation

Protector del Agua (PDA) Training

The PDA series of courses is being revamped for an early 2003 launch to include more emphasis on the use of native and drought tolerant plants in residential gardens and to support Metropolitan's new focus on outdoor irrigation efficiency. Professional landscape participants numbered 2,246 in 2002 and residential participants numbered 3,608. The total number of PDA participants through calendar year 2002 was 19,300.

The PDA residential course is four hours and covers the basics of irrigation systems, watering and fertilizing, landscape design and plant identification. The course offers hands-on exercises and demonstration displays to provide an interactive learning experience and a clearer understanding of irrigation hardware and the plant-water-soil relationship.

The PDA professional course is directed toward landscape maintenance personnel and is taught in both English and Spanish. It consists of six four-hour classes in landscape management and covers basic irrigation principles and irrigation scheduling.

A new six-hour PDA class for professionals provides education in plant identification, characteristics and water use requirements for common landscape plant species. It is also taught in both English and Spanish.

Rendering of future Water Education Center

Water Education Center

With architectural and exhibit design firms selected, the Southern California Water Education Center moved closer to its 2004 opening. The Center will chronicle the development of water in Southern California and offer hands-on learning experiences for visitors of all ages. It will spotlight the importance of water as a shared public resource and the need to manage it fairly. The Water Education Center will be located in a new museum complex situated at the entrance to Diamond Valley Lake in Riverside County.

Protector del Agua courses offer water-wise landscape instruction

Mexican Rush (Juncus mexicanus)
© 2002 Larry Blakely

Water Recycling

Numbers

1982 - Start of Metropolitan's Local Projects Program

75,000 - The number of acre-feet produced with recycled water in fiscal year 2002 by Metropolitan-funded member agency projects

$15 million - Metropolitan's fiscal year 2002 commitment to recycled water projects

$95 million - Metropolitan's 20-year investment in recycled water projects

53/37 - **53** is the number of funding agreements Metropolitan has with member agencies; **37** are currently operational

Three - Number of new Southland recycling projects built and nearing operation

A Valuable Source of Supply

By the 1920s, local water agencies realized the value of recycled water as a source of supply. This vision most recently led to the development of approximately 201,000 acre-feet of recycled water in fiscal year 2002.

For more than 20 years, Metropolitan has invested in Southland water recycling projects, committing about $95 million to date. Metropolitan's newest program was established in 1998 and includes a twist—a competitive element. The Local Resources Program calls for member agencies to submit project proposals for evaluation. This program structure fosters competitiveness and encourages the development of cost-effective recycled water and groundwater recovery projects.

Metropolitan currently has funding agreements for 53 member agency recycling projects—37 of which were in operation in fiscal year 2002. Together, these projects produced about 75,000 acre-feet of water, with Metropolitan contributing $15 million toward production in fiscal year 2002. Local agencies produced an additional 126,000 acre-feet of recycled water without financial assistance from Metropolitan.

There are many more opportunities for recycled water projects under evaluation. A long-term study spearheaded by the U.S. Bureau of Reclamation nearly a decade ago points to the potential for 34 short-term projects with an estimated yield of more than 450,000 acre-feet per year (AFY).

By the 1920s, local water agencies realized the value of recycled water as a source of supply. This vision most recently led to the development of approximately 201,000 acre-feet of recycled water in fiscal year 2002.

Water Recycling

New Recycling Projects

The following projects have been built and are expected to begin operation in 2003:

Escondido Regional Reclaimed Water Project (2,800 AFY)

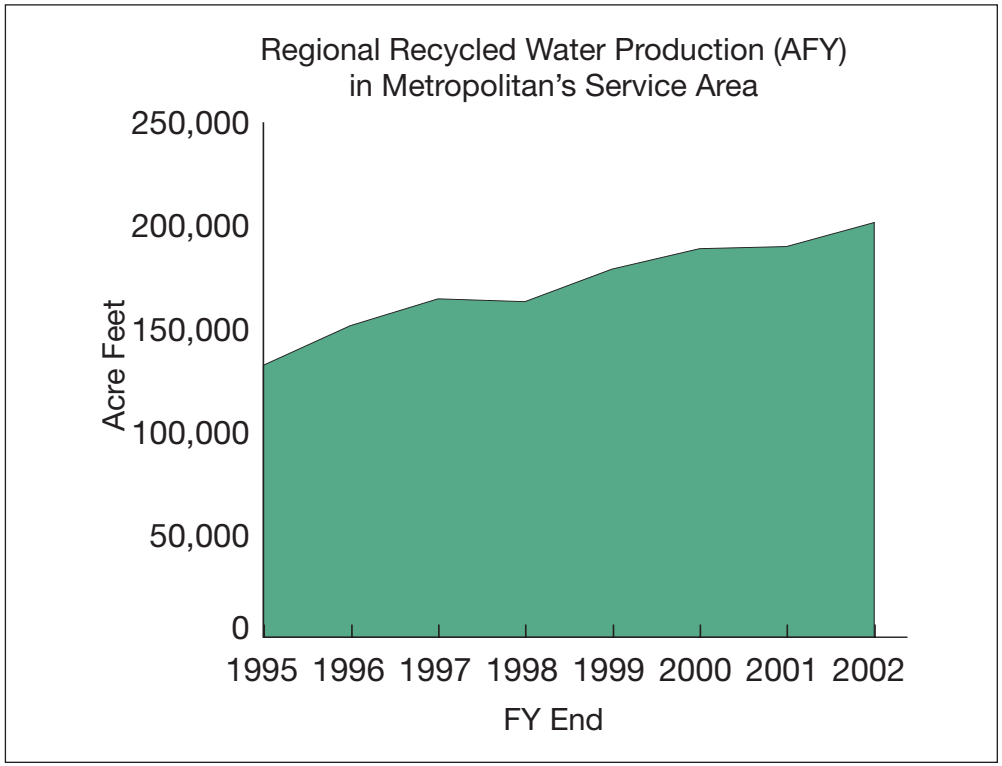
An agreement with the San Diego County Water Authority and city of Escondido. The project will irrigate parks, golf courses, and freeway medians within the city of Escondido.

Rincon del Diablo Recycled Water Program (648 AFY)

An agreement with the San Diego County Water Authority and Rincon del Diablo Municipal Water District. The project will provide landscape water for a number of uses including parks, golf courses, and schoolyards within the city of Escondido.

Harbor Water Recycling Project (5,000 AFY)

An agreement with the city of Los Angeles. The project will provide recycled water for a seawater intrusion barrier and for industrial uses.



Recycled water use for landscape irrigation

Western Columbine (Aquilegia formosa)
© 2001 Jeff Abbas

Groundwater Recovery

Numbers

11 *- Number of years Metropolitan has been funding groundwater recovery projects*

$6 million *- Metropolitan's fiscal year 2002 contribution*

$26 million *- Metropolitan's total investment to date*

22/15 *- 22 is the number of agreements between Metropolitan and member agencies to fund recovery projects; 15 is the number of projects in operation*

32,000 *-Number of acre-feet recovered through groundwater treatment both by Metropolitan-funded projects and member agency projects*

Groundwater Reservoirs

Natural groundwater reservoirs in Southern California serve an important function as storage conservation facilities for local and imported water. When groundwater in storage becomes contaminated, water agencies have to rely more heavily on imported surface water supplies or try to recover the water through treatment. Treatment for polluted groundwater is quite costly and poses some environmental challenges.

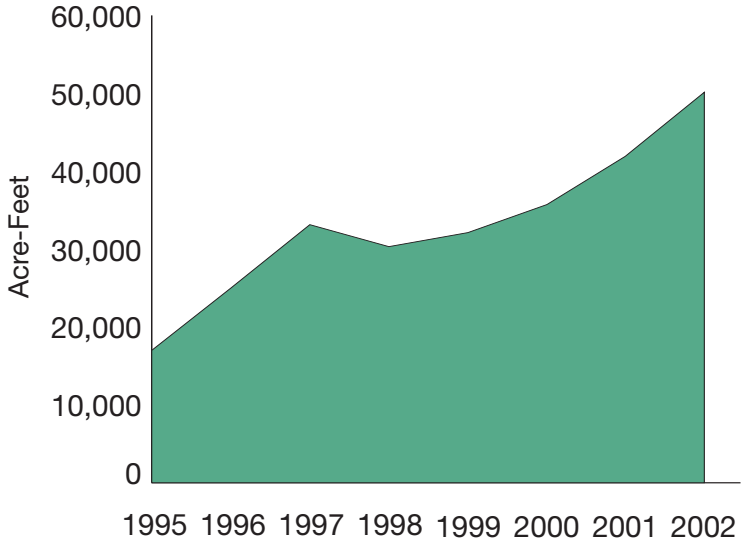
Over the past 11 years, Metropolitan has invested about $26 million to help fund member agency groundwater recovery projects. Funding agreements exist for 22 projects, 15 of which are in operation and credited with recovering about 32,000 acre-feet of water in fiscal year 2002. Metropolitan's fiscal year contribution was $6 million. In addition, local water agencies produced another 18,000 acre-feet of recovered groundwater without financial assistance from Metropolitan, bringing the regional total to 50,000 acre-feet for the year.

Project Start-ups

San Juan Basin Desalter Project (4,800 AFY)

This project, located in the city of San Juan Capistrano, began construction in late 2002 and is expected to be operational in 2004-05. The project will pump and treat brackish groundwater from the Lower San Juan Basin in South Orange County. It is made possible under a 20-year Groundwater Recovery Program agreement with Metropolitan, Municipal Water District of Orange County and San Juan Basin Authority.

Regional Recovered Groundwater Production (AFY) in Metropolitan's Service Area



Groundwater Conjunctive Use

Conjunctive Use Plays a Significant Role in California Water Management

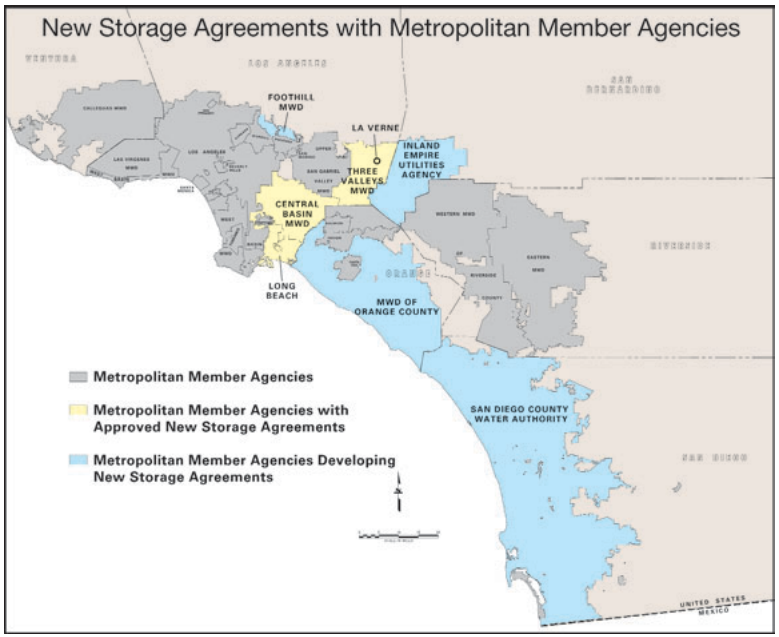
"Conjunctive use" refers to the coordinated operation of groundwater and surface water programs to increase supply yield. For Metropolitan, it involves storing imported water in groundwater basins for use during times of shortage or drought. Groundwater basins in Metropolitan's service area yield an annual average of 1.3 million acre-feet. The water withdrawn from these underground reservoirs is replenished both naturally and through man-made means.

Since the 1950s, Metropolitan has utilized conjunctive use with local agencies to enhance their management of local supplies. Metropolitan supports a wide variety of conjunctive use programs offering options that range from pricing incentives (lower costs) for replenishment supplies to contractual programs for dry years or emergencies. Conjunctive use programs are an integral part of Metropolitan's central planning document called the "Integrated Resources Plan," or IRP.

Conjunctive use program development received a financial boost with funds from Proposition 13 (The Safe Drinking, Clean Water, Watershed Protection and Flood Protection Act approved by voters in 2000), which awarded $45 million to Metropolitan to help finance conjunctive use programs in Metropolitan's service area.

New Storage Agreements

In 2002, Metropolitan approved agreements with Three Valleys Municipal Water District and the city of La Verne, as well as Central Basin Municipal Water District and the city of Long Beach. These two agreements will provide a total of 16,000 acre-feet of storage. In addition, Metropolitan is finalizing agreements with the San Diego County Water Authority, Foothill Municipal Water District, Inland Empire Utilities Agency, and the Municipal Water District of Orange County to develop five more conjunctive use programs within Metropolitan's service area. These programs will develop approximately 192,000 acre-feet of storage for Southern California.



Numbers

1950 - Start of Metropolitan's involvement with conjunctive use

1.3 million - Annual average acre-foot yield of Southland groundwater basins

$45 million - Amount received by Metropolitan from Proposition 13 bond measure for pursuing conjunctive use and other water projects

16,000 - Number of acre-foot storage expected with two new conjunctive use agreements in 2002

192,000 - Potential new acre-foot storage available with five new agreements in the final stages of negotiation

Metropolitan Water Storage

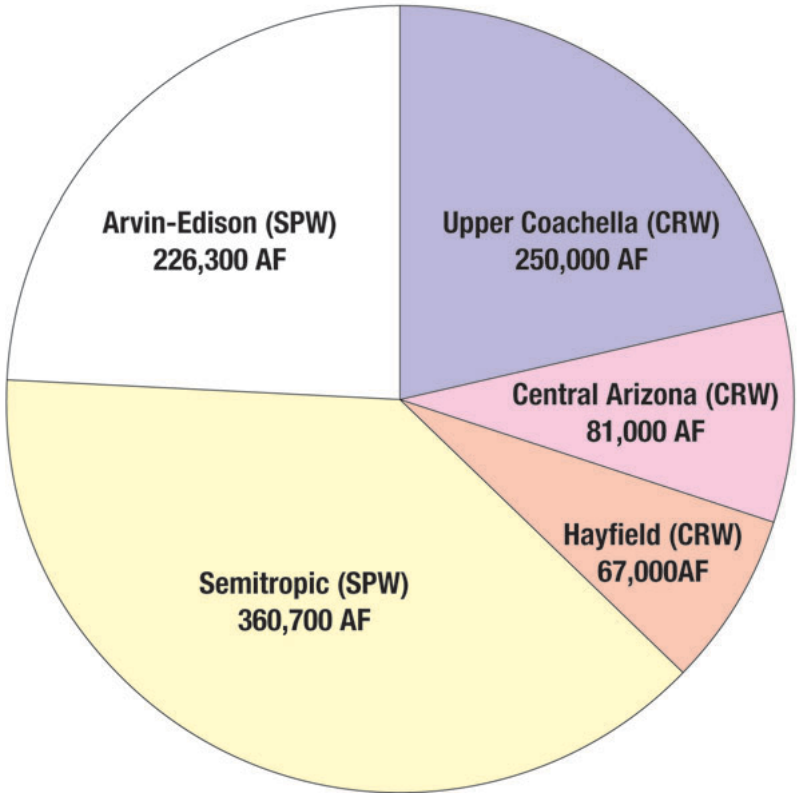
The Hayfield Groundwater Storage Program in east Riverside County

Seaside Heliotrope (Heliotropium curassavicum)
© 2001 Jeff Abbas

Metropolitan Water Stored in Groundwater Basins Outside its Service Area

(as of December 2002)

Total Colorado River Water (CRW) Groundwater Storage:	398,000 AF
Total State Project Water (SPW) Groundwater Storage:	587,000 AF
Total MWD Groundwater Storage Outside its Service Area:	985,000 AF

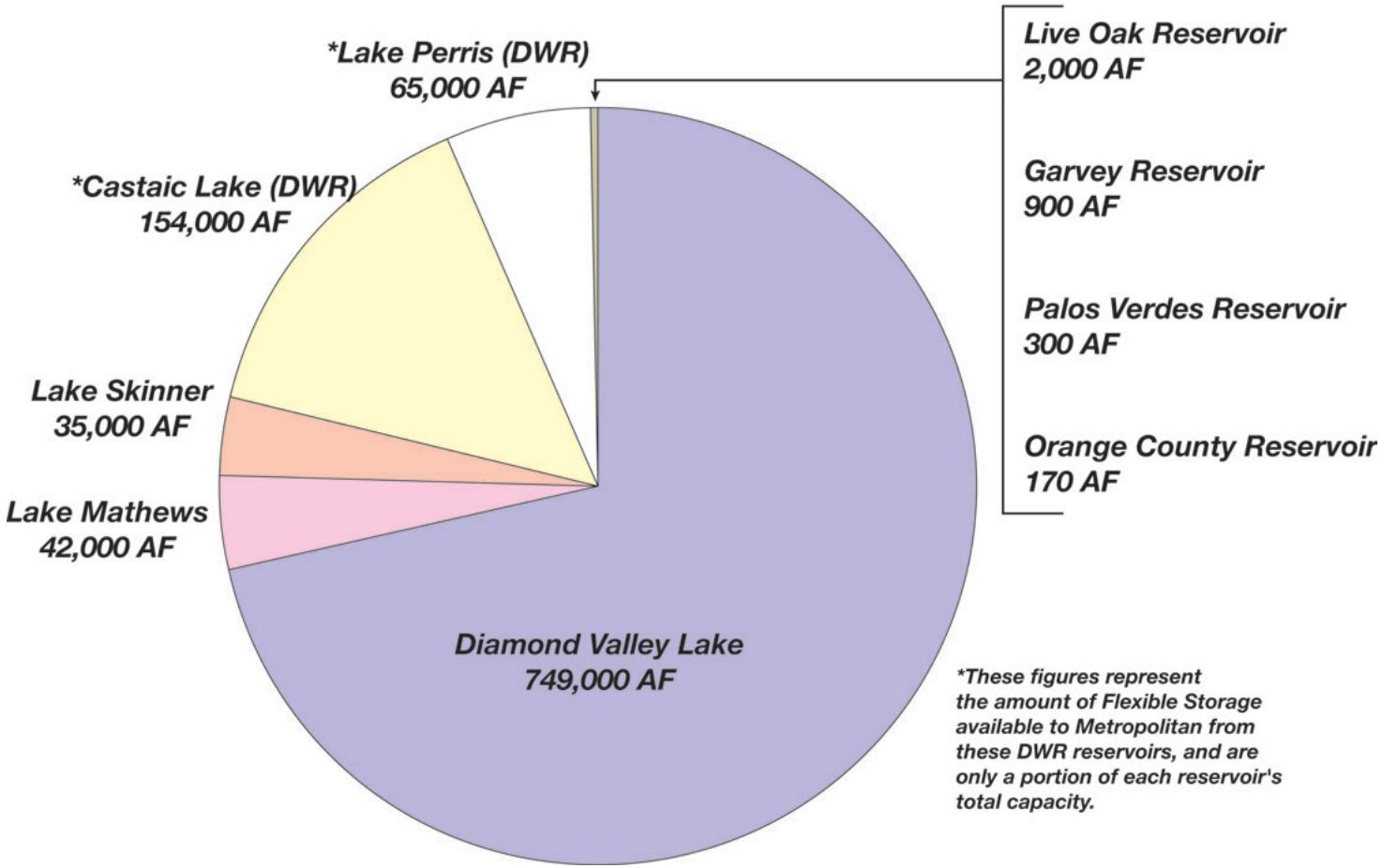


Metropolitan Water Storage

Metropolitan Surface Water Stored in Metropolitan & DWR Reservoirs in Southern California

Total Storage: 1,048,300 AF

(as of December 2002)



*These figures represent the amount of Flexible Storage available to Metropolitan from these DWR reservoirs, and are only a portion of each reservoir's total capacity.

Lake Skinner Reservoir

Blue Dicks (Dichelostemma capitatum ssp. pauciflorum)
© 1998 Larry Blakely

Metropolitan Water Storage

Groundwater pump in the Arvin-Edison service area in Kern County

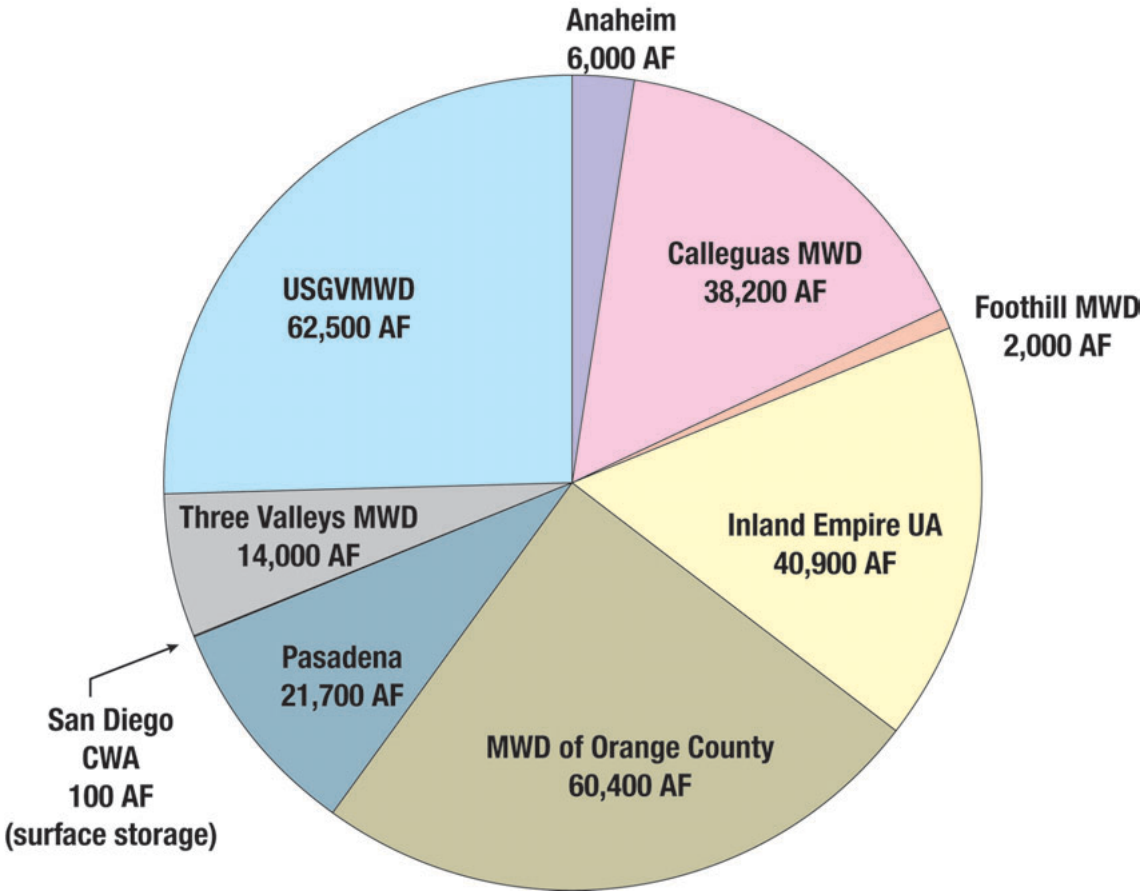
California Golden Violet (Viola pedunculata)
© 2002 Robert Potts, California Academy of Sciences

Metropolitan Water Stored in Southern California Groundwater Basins and Local Agency Reservoirs

Based on All of Metropolitan's Groundwater Programs

Total Storage: 245,800 AF

(as of December 2002)



Seawater Desalination

Seawater Desalination Program

In August 2001, Metropolitan initiated the Seawater Desalination Program to support the development of cost-effective seawater desalination projects that will contribute to greater water supply reliability. In November 2001, Metropolitan issued a competitive Request for Proposals (RFP) soliciting seawater desalination project proposals sponsored by member agencies. The RFP targets projects that would contribute up to 50,000 acre-feet per year and be eligible for financial incentives of up to $250 per acre-foot of production.

Metropolitan received five proposals that collectively could produce about 126,000 acre-feet of drinking water per year. Detailed proposals were received from the Los Angeles Department of Water and Power, Long Beach Water Department, Municipal Water District of Orange County, San Diego County Water Authority and West Basin Municipal Water District. All of the proposals were evaluated by an RFP review committee comprised of Metropolitan staff and outside water resource specialists, who were guided in their selection by criteria adopted by Metropolitan's board.

Metropolitan is working with member agencies to develop a coordinated, cooperative agenda for seawater desalination research.

Metropolitan's board is considering the inclusion of an additional 100,000 acre-feet per year of desalted seawater as part of the current Integrated Resources Plan Update. This could increase the target number of desalinated acre-feet per year of water from 50,000 acre-feet per year to 150,000 acre-feet per year to offset increased demand or reduced local and imported supplies. Metropolitan and its member agencies are evaluating the costs and benefits of an expanded seawater desalination target.

Numbers

***2001** - Year Metropolitan issued a Request for Proposal for seawater desalination projects*

***Five** - Number of desalination project proposals submitted*

***126,000** - Number of acre-feet that new desalination projects proposed by member agencies could produce*

***$250** - Maximum financial incentive offered by Metropolitan per acre-foot of seawater desalination production*

***150,000** - Number of acre-feet of desalted seawater considered for Metropolitan's new planning target*

System Reliability

Diamond Valley Lake

Malva Rosa
(Lavatera assurgentiflora)
© 1995 Br. Alfred Brousseau, Saint Mary's College

Metropolitan continues to implement a comprehensive supply plan that consists of a diverse set of resources to meet long-term future supply demands. Metropolitan's current practices allow the district to bring water supplies online at least ten years in advance of demand with a very high degree of reliability.

Diamond Valley Lake

One cornerstone to Metropolitan's supply plan is the district's own Diamond Valley Lake. Southern California's largest water storage reservoir provides critical water storage south of the San Francisco-San Joaquin Bay-Delta and almost doubles Southern California's surface storage. Diamond Valley Lake also provides Southern California with security in case of a major earthquake because it holds six months of emergency supply.

Diamond Valley Lake, which has the capacity to hold about 800,000 acre feet – or 260 billion gallons – of water, is nearly full and is counted among the various sources of surface and underground storage that can be delivered to Southern California to meet demands. Including Diamond Valley Lake, we have a total of about 2 million acre-feet of water stored in:

- Castaic Lake
- Perris Lake
- Multi-year banking and transfer programs in the California Central Valley
- MWD reserves in the San Luis Reservoir
- Groundwater conjunctive-use programs
- North Las Posas Storage Program

In addition, Metropolitan continues to pursue other storage-related programs, including its own Hayfield groundwater storage program near the Colorado River Aqueduct, transfer options from the Sacramento Valley and other storage programs funded by Proposition 13.

The availability of Diamond Valley Lake also has allowed Metropolitan needed flexibility for operations as well as infrastructure maintenance and repair – particularly with a major overhaul of the Colorado River Aqueduct during fiscal year 2002-2003 and improvements to Lake Mathews (see next page). Other benefits include:

- Water quality benefits that allow MWD to blend water from the State Water Project and Colorado River supplies
- Ability to take water from the Bay-Delta when supplies are available and environmental effects to endangered species are minimal
- Ability to release surplus water supplies through MWD's distribution system to member agencies to improve the region's groundwater recharge program

System Reliability

Improving Infrastructure Reliability

For more than six decades, Metropolitan has relied on the Colorado River Aqueduct. As the region's population has increased, so have the challenges of ensuring supply reliability. In response to those challenges, Metropolitan has launched several initiatives to ensure infrastructure reliability.

Lake Mathews

Metropolitan's oldest reservoir is receiving a $92 million renovation that includes construction of a new outlet tower to draw water out of the lake and into Metropolitan's distribution system. Also, the existing tower is being modified with both projects expected to be operational by 2004. Before the construction of Diamond Valley Lake, Lake Mathews was Metropolitan's largest reservoir.

San Diego Pipeline No. 6

In October 2002, Metropolitan's board authorized $6.5 million for design work and the start of land acquisition for a portion of a major supply pipeline that will deliver water to Temecula in southwestern Riverside County, and eventually extend to the San Diego County Water Authority service area.

The initial phase of San Diego Pipeline No. 6 is a $100 million project that will deliver water from the Colorado River and the State Water Project to the Eastern Municipal Water District and the Western Municipal Water District of Riverside County. The first section of the pipeline is expected to be complete in 2006. The overall project cost is $426 million.

Lake Mathews new inlet/outlet tower construction

Sand Spurrey (Spergularia atrosperma)
© 2002 Dean Wm. Taylor

Colorado River Programs

Interagency signing ceremony signals agreement on water transfers

Desert Sandwort (Arenaria macradenia var. macradenia)
© 2001 Larry Blakely

With a mandated reduction in California's draw from the Colorado River and the uncertainty of weather patterns, Metropolitan has looked to bolster its supply reserves through a number of storage and conservation programs and transfer agreements.

Interim Surplus Guidelines: Colorado River Use

On January 16, 2001, Secretary of the Interior Bruce Babbitt signed a Record of Decision to implement the Colorado River Interim Surplus Guidelines (Guidelines). Adoption of the Guidelines recognizes California's Colorado River Water Use Plan and its commitment to reduce its draw of Colorado River water.

The Bureau of Reclamation uses the Guidelines to determine the availability of surplus water to Metropolitan through 2016. Under a seven-state agreement, California has 15 years to reduce its draw on the river from about 5.2 million acre-feet to its basic apportionment of 4.4 million acre-feet a year in the absence of surplus water. During the 15-year ramp-down period, California would continue to receive surplus water from the river; the annual amount depends on whether there is a flood control release, or a full or partial domestic surplus condition.

The Secretary could, and did, suspend the Guidelines because the Quantification Settlement Agreement (QSA) was not implemented by December 31, 2002, and they will remain suspended until such time as either the QSA is executed or such other actions as are required by the Secretary are completed.

Arizona Water Bank

Interstate offstream water banking of Colorado River water provides an added water management opportunity for meeting the needs of Arizona, California and Nevada. In 1992, Metropolitan made an agreement with the Central Arizona Water Conservation District to allow unused Colorado River water to be stored in Central Arizona aquifers. The Southern Nevada Water Authority also participates in the program. Metropolitan has stored 89,000 acre-feet in Arizona under this program, with a recoverable amount of approximately 81,000 acre-feet. There is a statute limiting the annual recovery to no more than 100,000 acre-feet. Metropolitan intends to execute an interstate storage agreement with the Arizona Water Banking Authority.

Hayfield Groundwater Storage Program

The Hayfield Groundwater Storage Program was approved by Metropolitan's board in June 2000 and is expected to be operational in 2004. It is eligible for up to $35 million in reimbursement from the California Department of Water Resources. The program allows Colorado River Aqueduct water to be stored in the Hayfield Groundwater Basin in east Riverside County (about 50 miles east of Palm Springs) for future withdrawal and delivery to the Colorado River Aqueduct. Currently there is 67,000 acre-feet in storage.

Colorado River Programs

Chuckwalla Groundwater Storage Program

The Chuckwalla Groundwater Storage Program proposes storage of Colorado River water in the Upper Chuckwalla Groundwater Basin for future delivery to the Colorado River Aqueduct. The basin also is located in Riverside County about 70 miles east of Palm Springs. A feasibility study was approved by Metropolitan's board in June 2000. A $250,000 grant from the California Department of Water Resources was awarded to Metropolitan for a portion of the feasibility study. The anticipated benefits of this program echo those of the Hayfield Groundwater Storage Program, but development of the project is subject to the outcome of the feasibility study which takes into account the availability of surplus Colorado River water.

Lower Coachella Valley Groundwater Program

Metropolitan, in conjunction with Coachella Valley Water District and Desert Water Agency, is currently looking at the feasibility of a conjunctive use storage program in the Lower Coachella groundwater basin. The basin, which is currently in an over-drafted condition, has the potential to provide a total storage capacity for Metropolitan of 500,000 acre-feet. The Lower Coachella Program would have the advantage of using the All American and Coachella canals to deliver water for storage, preserving the full capacity of the Colorado River Aqueduct for service area demands.

Cadiz Groundwater Storage and Dry-Year Supply Program

In October 2002, Metropolitan's board elected to forego the Cadiz Groundwater Storage and Dry-Year Supply Program. The action was taken because material changes had occurred since the Cadiz Project was approved for investigation. These changes included increased capital costs, limitations imposed by the groundwater monitoring and management plan, dramatically changed conditions on the Colorado River making it unlikely that there would be sufficient surplus water to store as the proposed program anticipated in the near term, and the difficulty of fully insulating Metropolitan from a Cadiz Inc. default.

Colorado River Conservation Programs

Metropolitan is involved in several Colorado River water conservation programs that are discussed in greater detail in the Conservation section of this report. These programs include:

- Imperial Irrigation District/Metropolitan Water Conservation Program
- San Diego County Water Authority/Imperial Irrigation District Agreement for Transfer of Conserved Water
- Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program
- Coachella Canal Lining Project
- All American Canal Lining Project

The Colorado River is the life - source for several Western states

Willowherb (Epilobium ciliatum ssp. ciliatum)
© 2001 Jeff Abbas

State Water Project Programs

Balancing urban and environmental needs

California Grass of Parnassus (Parnassia californica)
© 2002 Russell Towle

Metropolitan's Participation in CALFED

More than two-thirds of California's drinking water passes through the San Francisco-San Joaquin Bay-Delta (Bay-Delta). In June 1995, state and federal agencies with regulatory responsibility in the Bay-Delta system launched an historic partnership under the CALFED Bay-Delta Program to address issues of reliability and quality of supplies. Metropolitan has worked cooperatively with CALFED and other Bay-Delta stakeholders to develop balanced and cost-effective solutions.

This year, 50 Bay-Delta ecosystem restoration projects received nearly $60 million from state Propositions 13 and 204 providing much-needed funds for protection of habitat, wetlands and water quality research. Additional funding became available through the passage of Proposition 50 by voters in November 2002.

The Clean Water and Coastal Protection Bond of 2002 (Proposition 50) provides $3.44 billion to support projects throughout the state that are designed to clean our drinking water sources, upgrade existing infrastructure and treatment processes. It will also provide funding for desalination programs and state-of-the-art technologies to remove contaminants.

Metropolitan provided a $10,000 grant to the Sacramento River Watershed Program for the ongoing effort to preserve and enhance this critical watershed. This contribution is in addition to the $30 million Metropolitan advanced for environmental improvement projects in the Bay-Delta watershed.

Other 2002 milestones include:

- Passage of a CALFED governance bill to stabilize CALFED institutions and decisions and increase the role of stakeholders, including Metropolitan
- A proposed legal settlement that will resolve issues concerning the recent Monterey amendment to the water supply contracts for the State Water Project. The settlement would help to secure cost savings and significant operational benefits provided by the amendment
- A pending agreement that will increase State Water Project/Central Valley Project supplies up to 185,000 acre-feet annually by involving Sacramento Valley water interests with the shared responsibility to contribute water toward environmental needs and water quality standards
- Continued development of the South Delta Improvement Program that will increase the minimum pumping capacity of the State Water Project Banks pumping plant by at least 180,000 acre-feet annually and advance the ability to move large volumes of additional transfer water in the future when the water is available
- Second 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

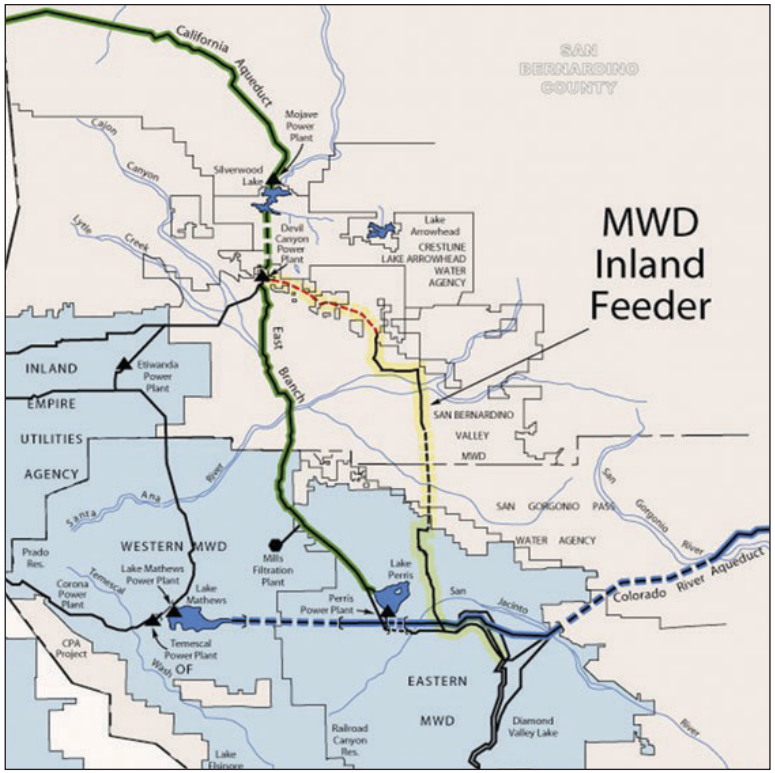
State Water Project Programs

Dry-Year Transfer Program

To ensure water supply reliability, Metropolitan is entering into a number of water transfer and storage agreements. In November 2002, Metropolitan's board authorized one-year transfer option agreements with several Sacramento Valley water districts for up to 205,000 acre-feet of water. The final agreements and environmental documentation are currently being prepared for board approval.

The Inland Feeder

Metropolitan's Inland Feeder consists of nearly 45 miles of tunnels and pipelines that will link the east branch of the State Water Project to Metropolitan's Diamond Valley Lake and Lake Mathews. Both reservoirs are in Riverside County. The Inland Feeder will allow Metropolitan to schedule its water deliveries to match weather patterns and the needs of the Bay-Delta estuary environment. Part of the pipeline is operational, made possible by an agreement between Metropolitan and San Bernardino Valley Municipal Water District. The agreement allows Metropolitan to blend additional water from the State Water Project with Colorado River water to increase overall water quality benefits. It also helps San Bernardino resolve long-standing groundwater issues.



Breakthrough event for the Inland Feeder

Golden Aster (Heterotheca sessiliflora)
© 2002 Margo Bors

Water Storage, Transfer & Exchange Programs

Arvin-Edison test pump

Woodland Clarkia (Clarkia unguiculata)
© 2001 George Jackson

Semitropic Water Banking and Exchange Program

This program allows Metropolitan to store up to 350,000 acre-feet 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 storage and withdrawal of 350,000 acre-feet.

Arvin-Edison Water Storage Program

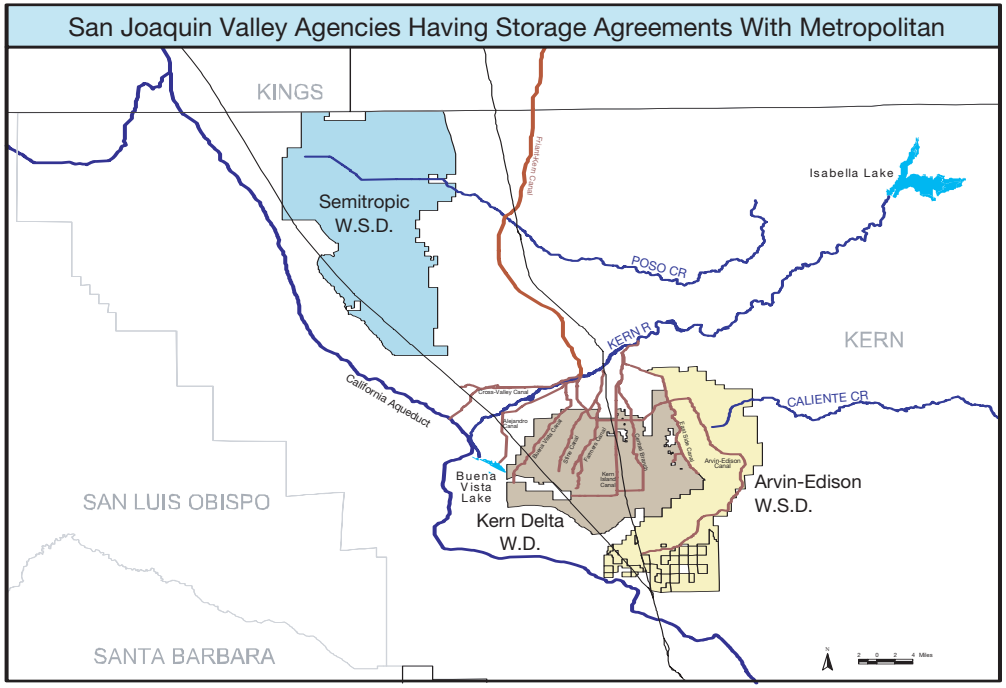
Metropolitan and the Arvin-Edison Water Storage District have developed a program that allows Metropolitan to store water in the groundwater basin in the Arvin-Edison service area located in Kern County. Over the next 25 to 30 years, dry-year withdrawals will average about 70,000 acre-feet.

Kern-Delta Storage Program

The Water Management Program Agreement with the Kern Delta Water District was approved by Metropolitan's board in November 2002. Under the 25-year program, Metropolitan will store up to 250,000 acre-feet of its available State Water Project supplies in the groundwater basin underlying Kern Delta.

San Bernardino Valley Program

Under the San Bernardino Valley Municipal Water District (SBVMWD) Program, Metropolitan purchases water provided to SBVMWD from its annual State Water Project (SWP) allocation. Depending on SWP conditions, approximately 20,000 to 80,000 acre-feet per year of water would be available for purchase. In addition, Metropolitan could store up to 50,000 acre-feet for later delivery from the San Bernardino groundwater basin.



Water Quality Programs

Metropolitan's Water Quality Initiative

Protecting Water at the Source, So You Can Trust it at the Tap

Metropolitan's water management priorities are simply stated: quality, reliability, and fairness. In support of this mandate, Metropolitan launched a number of water quality initiatives with progress made on national, regional and local levels. Among its water quality initiatives, Metropolitan:

- Is retrofitting two water treatment plants to use ozone, a disinfectant highly effective in reducing disinfection by-products and other disease-causing contaminants
- Was instrumental in influencing Congress and federal agencies to require the Department of Energy to manage a large radioactive uranium-mill tailings pile and groundwater near the shore of the Colorado River at Moab, Utah and potentially dispose of it rather than treat and contain it on-site
- Continued participation in a federal-state basin-wide effort to reduce salinity in the Colorado River resulting in the formation of a Selenium Committee by the Colorado River Basin Salinity Control Forum to address concerns about the concentration of selenium in Imperial Valley drainage water
- Worked cooperatively with water and regulatory agencies in Nevada to clean up perchlorate contamination of the Colorado River at Lake Mead
- Supported the California Department of Water Resources' (DWR) policy to govern the quality of water in the California Aqueduct
- Developed a "rapid response" water quality team comprised of member agency and Metropolitan staff to coordinate emergency response and communications in the event of a water quality emergency
- Reexamined security efforts in the wake of the September 11, 2001 events, and authorized an additional $5.5 million for measures to further protect drinking water supplies and facilities
- Continued funding DWR's Municipal Water Quality Investigations Program that monitors and studies conditions affecting the drinking water quality of the Bay-Delta
- Continued water quality exchange partnerships with the Friant Water Users Authority and the Kings River Water Association with the goal to invest in local infrastructure in our partners' service areas. This provides an incentive for our partners to exchange high-quality Sierra water supplies for a portion of Metropolitan's State Water Project supplies
- Continued promoting water quality management as a water conservation measure. Water quality management not only protects public health and safety, but also serves as a water conservation measure. Better quality water results in less water use, greater water recycling opportunities, and preserves the integrity of stored supplies

Metropolitan's Flavor Profile Panel serves as an early warning system with a human touch

Little Spring Beauty (Claytonia exigua ssp. exigua) © 2001 Bart and Susan Eisenberg

Water Quality Programs

One of six Asian language advertisements promoting water quality and safety

Blue eyed grass (Sisyrinchium bellum)
© 2002 George Jackson

Water Quality Outreach Program

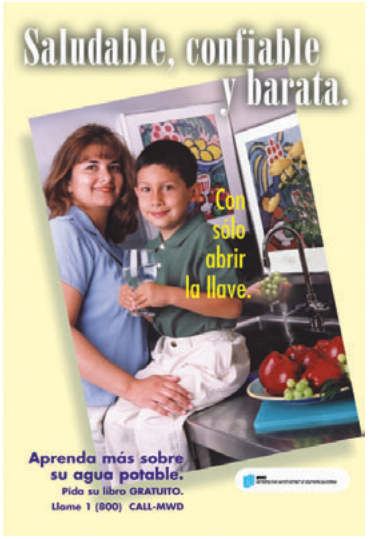
Know Your Water

"Know Your Water." These three simple words became the centerpiece of a multi-faceted educational outreach program for Metropolitan. The campaign started as an outgrowth of a regional telephone survey and focus group work commissioned by Metropolitan and conducted in 1997 and 1998. The survey revealed that many consumers didn't believe their utility was doing an adequate job of providing tap water that is safe to drink, and was not keeping consumers informed about water quality and safety issues.

The findings highlighted the need to develop more innovative and effective water quality communications so consumers could make informed choices about the water they drink. Demographic trends suggested that the communications be tailored to the ethnic communities within Southern California, and a pilot water quality information campaign targeting Hispanic consumers was subsequently developed.

The success of the program in Spanish-speaking communities prompted its expansion to Chinese and Cambodian communities. Focus groups within these communities tested a series of print and radio advertisements containing water quality and conservation messages, as well as participants' attitudes about tap water in general.

Metropolitan responded by translating a booklet called, "Everything You Ever Wanted to Know About Your Tapwater" into Khmer, Chinese, Korean and Vietnamese as well as preparing advertising for placement in several Asian-language newspapers. The central part of Metropolitan's 2002 Consumer Confidence Report (formally called the annual water quality report), which details the level of contaminants found in Metropolitan water sources, was translated and posted on the Internet in five Asian languages. Metropolitan plans to continue outreach to other communities that may not use English as their primary language.



Water Quality Programs

The following observations were made during a series of focus groups held within Cambodian and Chinese communities. Some of the sessions were conducted in English, while others were held in Khmer and Mandarin. A number of water quality and conservation topics were addressed. The highlights below reflect only attitudes about water conservation.

Most respondents indicated that "conserve water" meant:

- *Saving money*
- *Preparing for drought*
- *Helping the government*
- *Cutting back on usage*
- *Recycling water*

Overall, respondents were conscious about conserving water. Many, especially those who paid for their water, did something to conserve. Some of their methods of saving water were:

- *Setting up appropriate running times for lawn sprinkler systems*
- *Fixing leaky faucets/pipes promptly*
- *Putting objects inside the toilet tank to fill the tank with less water*
- *Taking shorter showers*
- *Washing cars less frequently*

Many respondents believed that there was currently a drought in California due to lack of rain this year.

The appropriate sources to provide reliable and accurate information about water conservation were:

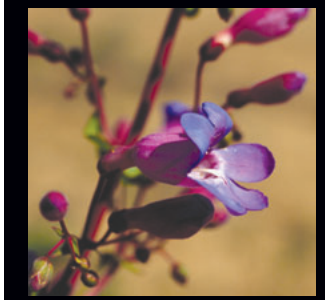
- *Government agency*
- *Water company*
- *Independent research institution*
- *Non-profit environmental group*
- *News media*

Why Salty Water is a Problem

The management of salt in our drinking water is both a water supply and water quality problem. Water high in salts is not good for recycling or groundwater projects. By limiting salts in our water supplies, the economy of Southern California and its environment both benefit. For a reduction of 100 milligrams of salt per liter in imported water supplies, the region collectively realizes savings of $100 million in avoided treatment and impact costs such as the replacement of household plumbing and appliances that have been corroded by salt, and reduced agricultural production.

Metropolitan is involved with several groups all focused on coordinating salinity management and identifying ways to reduce salt levels in imported water sources. These groups include the Colorado River Basin Salinity Control Forum, The Salinity Management Coalition, and the Desalination Research and Innovation Partnership. Southern California leaders also are working with urban areas in Arizona, Nevada, New Mexico and Texas to find solutions to mutual problems with salinity in the Colorado River. On November 1, 2002, Governor Gray Davis appointed Metropolitan's Vice President, Dennis Underwood, to represent California as a member of the Colorado River Basin Salinity Control Advisory Council and the Colorado River Basin Salinity Control Forum.

Focus groups help Metropolitan gain insight about consumer perceptions



Showy Penstemon (Penstemon spectabilis var. spectabilis)
© 1996 Christopher L. Christie

Public Participation

The Native Plant Forum was attended by more than 100 people to coordinate efforts and pool resources

Ajuga Hedge Nettle (Stachys ajugoides)
© 2002 George Jackson

Metropolitan recently concluded four years of a strategic planning process that outlined how the agency will ensure reliable, high-quality water supplies for Southern California's future needs. The introspective and analytical process was very open, with public participation invited and expected throughout. Whether it be defining a corporate identity or evaluating proposals for a seawater desalting plant, Metropolitan welcomes outside perspectives.

Outdoor Conservation Program

In November 2002, Metropolitan's board authorized $2.3 million for a region-wide public outreach program to foster water use reductions for summer 2003 and beyond. This action underlines Metropolitan's commitment to maintain conservation as a focal point for its resource management strategy.

As conservation becomes more and more integrated into the Southern California way of life, Metropolitan continues to look for innovative and far-reaching ways to achieve greater savings. A new and aggressive conservation program will focus on outdoor conservation and emphasize native and drought tolerant plants as a means of recapturing Southern California's natural landscape heritage.

The outdoor conservation program has two objectives:

1. To achieve a 7 to 12 percent reduction in water use
2. To enable Metropolitan to meet conservation goals set in the Integrated Resources Plan, through a long-term campaign

A prominent focus of the campaign will be outdoor water use, which can range from 30 to 70 percent of total household water consumption depending on the location within Metropolitan's service area. New tools and programs being developed to help reduce outdoor water use include water conservation technology improvements and financial incentives that will drive the new technologies and programs. Additionally, there are a range of initiatives to integrate the public ethic of adopting a lifestyle more suited to a semi-arid region and its natural climate cycles. These tools include a new on-line sprinkler index which guides outdoor irrigation controllers to be more efficient, rebates for a number of water-saving devices for both residential and industrial application, and a native and drought tolerant plant-based landscape program.

The "Southern California Heritage Gardens" program, created in partnership with Rancho Santa Ana Botanic Garden, will promote the appreciation and use of native plant themes in landscaping as a way to preempt the effects of drought. There are several aspects to this program that include outreach to institutions such as Caltrans, as well as municipal agencies and homebuilders. A Southern California Heritage Landscape Forum held in November 2002 jump-started the program by providing an opportunity to define areas of mutual interest and collective milestones that can serve to attract attention, resources and create momentum.

Public Participation

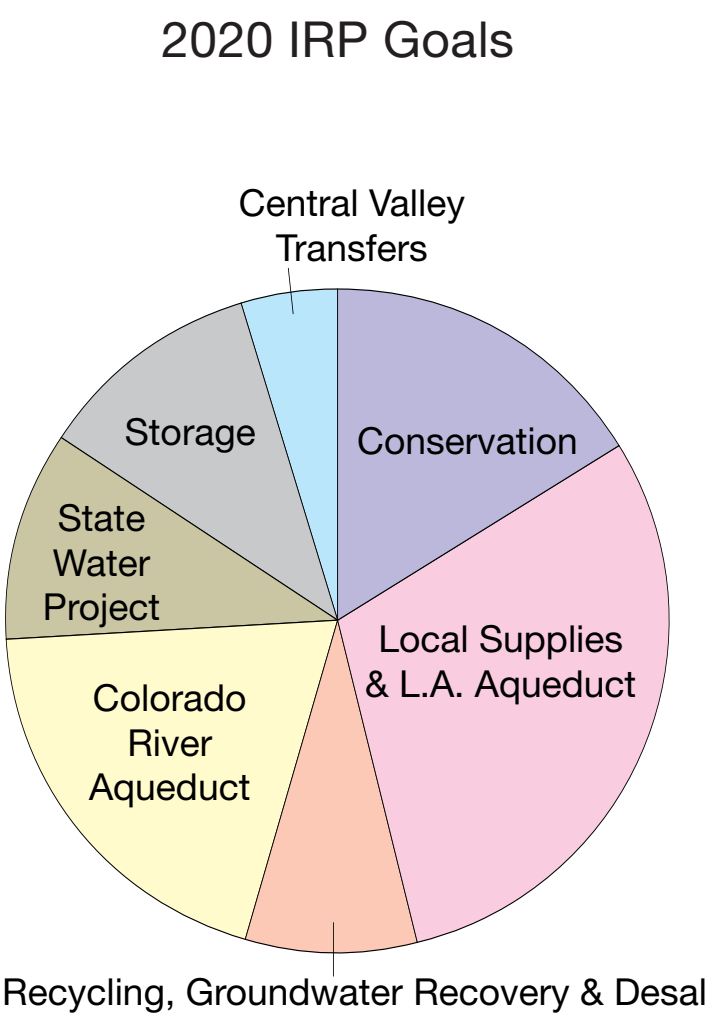
The Integrated Resources Plan for Southern California

In 2001, Metropolitan initiated the Integrated Resources Plan (IRP) Update. The IRP Update is an assessment of the progress made in implementing Southern California's water resource targets under the landmark 1996 IRP.

The 1996 IRP was a regional stakeholder planning process that culminated in a long-term water resources development strategy for Southern California. Included were goals for imported supply, recycling and groundwater recovery, surface and groundwater storage, and transfers.

With successful implementation of current IRP update and local development plans as outlined in member agencies' 2000 Urban Water Management Plans, Metropolitan would be able to provide reliable water service through 2025.

The need for buffer supplies to offset uncertainties beyond hydrology is being studied. A larger role for seawater desalination is envisioned along with increases in targets for conservation, recycling and groundwater recovery and Central Valley water transfers. Diversification of supplies remains the IRP's guiding principle.



The IRP is designed to offset supply uncertainties tied to hydrology and other circumstances

Humboldt's Lily (Lilium humboldtii) © 1995 Br. Alfred Brousseau, Saint Mary's College

Public Participation

Metropolitan sponsorships for schools support water education programs and unique learning opportunities

Chicory-leaved Stephanomeria (Stephanomeria cichoriacea) © 2001 Robert Potts, California Academy of Sciences

Community Partnering Program

Metropolitan's Community Partnering Program (CPP) was created in 1999 to channel Metropolitan resources to community based groups, nonprofit organizations, and professional associations for activities that encourage discussion and involvement in regional water issues. Watershed management and protection programs are a primary focus of the program.

With a grass-roots orientation, the CPP supports programs that empower Southern Californians to learn more and become involved in water issues. The program encompasses sponsorships, memberships and support for selected activities that include research, educational collaborations, and policy forums.

CPP contributions for 2001-2002 totaled $550,000 and were divided among 74 projects. Each project is unique in scope, but all share the ability to reach people with a message about water. Metropolitan also uses the CPP to provide seed money for watershed protection--a high priority. Several important watershed restoration and improvement projects have received funding through the CPP.

To better understand the diversity of CPP funding recipients it is helpful to see a synopsis of projects. The following list represents only a fraction of organizations that have received CPP sponsorships, primarily for watershed management and landscape education programs. Other projects sponsored by the CPP are listed in the Appendix.

Alice M. Birney Elementary School

Greening Project. Students create a drought-tolerant garden in an outdoor learning environment.

Ballona Wetlands Foundation

Educational Project. CPP program supports "Wonders of Wetlands," an educational tool expected to reach nearly 5,000 students in grades 4 to 6 to focus on the functions of a wetland.

Bolsa Chica Land Trust

Habitat Restoration. CPP helps fund efforts to revegetate the Bolsa Chica Mesa to create a more livable habitat for animals and plant life and improve groundwater quality. Support was also provided to create "Miracles of a Marsh," a K-6 outdoor education program to address urban watershed management and water quality issues over three years that will host 5,000 students and 300 teachers.

Cal Poly Foundation, Inc.
CA State Polytechnic University

Demonstration Gardens. The 21st Century garden project will demonstrate water-conserving plant material, methods to capture rainwater, practices to minimize water loss and other microclimate efficiencies. Lessons from the gardens can be applied to school gardens.

Eco-Home Network

Water-efficient Home Tours. CPP co-sponsors the Eco-Home Showcase Tour highlighting homes with water conserving landscapes, irrigation and gray water systems, rainwater catchments and indoor water conserving systems and appliances.

Public Participation

El Centro de Accion Social, Inc.

School in the Park Program. CPP contributes to the comprehensive six-week Summer School in the Park program that reaches 300 low-income and recently immigrated Pasadena youth in grades K-12 in Pasadena's Center Park. Activities highlight water cycle, watersheds, and health benefits of water, water science lessons, water-related art projects, water storytelling and water in basic math problems.

Friends of the Angeles Chapter Foundation

Habitat Restoration. CPP contributes to the Woodland Farms Duck Farm study to develop habitat restoration and a detailed site study on 57 acres of San Gabriel River frontage.

Greater Los Angeles Zoo Association

Native Garden. CPP sponsors a native garden at the Zoo Magnet School to display the benefits of native plant gardens for water conservation and to attract native wildlife through native habitat.

Rancho Santa Ana Botanic Gardens

Learning Series. CPP supports the Fall Horticulture Series to teach homeowners how to incorporate water-saving native plants into their landscaping.

TreePeople

Youth Tour Program. CPP sponsors the Eco-Tours program for inner-city youth. Educators lead students and teachers through trails in Coldwater Canyon Park to learn about earth, water, air, plants and animals.

Heal the Bay

Watershed Studies. CPP supports "Key to the Sea" environmental education program that serves K-5 students and focuses on watershed stewardship, storm water pollution prevention, and marine conservation and beach ecology. The program reaches 9,600 students and 343 teachers through field trips to several facilities.

Las Virgenes Municipal Water District

Community Center Garden. CPP sponsors a garden upgrade at the Agoura/Calabasas Community Center to include a native chaparral ecosystem.

The Theodore Payne Foundation

Conservation and Native Plants Program. Sponsorship of water conservation and California native plants program by the CPP educates and influences Southern California gardeners, landscape architects and contractors to reduce the current high demand of water for outdoor landscaping. A native plant gardening primer, focusing on the use of the native plants in drought-tolerant landscaping, will be printed for Earth Day April 2003 in English and Spanish.

Schools throughout Metropolitan's service area receive educational grants

Saltmarsh Dodder (Cuscuta salina var. salina) © 1995 Br. Alfred Brousseau, Saint Mary's College

Public Comments Excerpts

Public Comments at the December 9, 2002 Annual Public Hearing to Review Metropolitan's Urban Water Management Plan for Adequacy in Achieving an Increased Emphasis on Cost-Effective Conservation, Recycling, and Groundwater Recharge

"I'm the director of public works for the city of San Juan Capistrano, which manages the water for Capistrano Valley Water District and provides water to residents of the city of San Juan Capistrano and portion of the city of Dana Point…It is a small town and thanks to the subsidy provided by Metropolitan Water District, this year we started construction of a 4,800 acre-foot per year groundwater recovery project. This provides about half of our water supply, which is a major accomplishment for us. We entered into a service contract with a private company to do this project for us as a design/build/operate procurement strategy. It is a 20-year contract and it is a fixed fee contract of $907 per acre-foot, which is higher than our current MWD rate plus the $250 subsidy. However, recognizing the importance of this project and the benefits that this project provides to our environment and the regional benefits that it provides to the area, to south county area, our board decided to 'bite the bullet' and increase our rates 16%, and pay for this project. Again I want to thank the MWD for providing the subsidy and I would like to encourage you to continue the support."

- Amy Amirani, director of public works, city of San Juan Capistrano

"MWDOC is a regional wholesaler in Orange County, we aggregate for thirty-three member agencies, one of which is Amy's [Amirani] in Capistrano Valley. And, over the history of MWDOC we have had a very successful water use efficiency program, in no small part because of MWD's vision in creating its Conservation Credits Program, which enables agencies to basically contribute money through the water rate and have that come back in a small proportion on credits for conservation program implementation. It's through these regional programs in Orange County that we have had a great deal of success. It is very difficult if thirty-three agencies each had to have a separate conservation program, a separate marketing program, [and] a separate funding source. By having Metropolitan as an aggregator, and MWDOC as a local implementator in our region, we have had a great deal of success. In the life of this program, we have replaced more than 275,000 low efficiency toilets with low-flow toilets. So, while the Hetch Hetchy canal may be awesome and the MWD aqueduct may be awe-inspiring, we like to call our little project down there the 'Porcelain Canal'. That's not all that has happened over the last decade or so. In addition to the low-flow toilets, we've had home water surveys, master computer-controlled irrigation systems on very large centralized landscapes, [and] the Residential Clothes Washer Rebate Program has taken off. And, in addition to that, we're trying to look out into the future and one of the key things that seems to be coming into focus is the nexus with urban runoff, particularly the type of runoff that's laden with fertilizers that's from over watering of residential landscape. And it so happens that about the same time that that issue was coming to the fore, we found that there was a blossoming of new technology for computer-controlled irrigation systems at the home… Finally I think I would like to observe one perhaps constructive comment for Met moving into the future. The unit cost for the Conservation Credit has remained fixed since 1989 at $154 an acre-foot and it may be time to revisit that. I wouldn't want to hazard to guess as to where that should be set, but I think that $200 an acre-foot is a good starting point, or at least a place to look in analysis. And with that, I would just like to offer my thanks to our partners at Metropolitan and encourage the Legislature…to consider other ways that they can help push along water-use efficiency in Southern California and the rest of the state."

- Matt Stone, associate general manager, Municipal Water District of Orange County

Public Comments Excerpts

"I wanted to thank you for the opportunity to bring people together to make this report and I'm glad to see that there are so many people here [at this public hearing]… It forces everyone, whether they are involved in water conservation, water recycling, or some of the other areas that are covered by the report, to look at this source of water and to consider what the potential is for the future…You have had an Integrated Resources Plan for a long time, and you are now starting to update it again, but many things have been changing since you initially started your Integrated Resources Plan. And again, this report points at some of those, and the comments that people have made points at some of those changes, which I think are overall quite good. Conservation used to be a dry year solution. That has changed here at Metropolitan. Conservation here is not just a dry year activity. It is something that we will be doing year round and increasingly…I think Met's point about focusing on what are the avoided costs of conservation as a way of looking at what's the appropriate monetary value to put on conservation and many of the other things that are being done here: water quality improvements, storm water issues… all of those are going to be ways in which you will be better able, as Metropolitan Water District officials, to make decisions on where you want to invest your dollars in the future…So I'm pleased to be able to congratulate the MWD for the work that they have done in all of the areas that are covered by the report. But not to rest on their laurels, because there is a tremendous opportunity, we are unlikely to be getting federal and state subsidies at the level we've had at the past, in the future, and yet we still have to supply high quality water, not only for people, but for the environment. And, it will be through these cost effective local projects. I think these are the places where we are going to be able to make tremendous gains, [and] perhaps not experience shortages that many are projecting."

- Frances Spivy-Weber, executive director of policy, Mono Lake Committee

"I would just like to note that I'm very pleased that Metropolitan Water District of Southern California, through its Native Plant and Outdoor Conservation Program, has quantified and recognized the significance of outdoor water use in urban areas and the great potential largely untapped, pardon the pun, for water conservation. First, a note about Rancho Santa Ana Botanic Garden…we were founded in 1927 in Orange County, we moved to Claremont in 1951. Our garden has 86 acres with programs in botanical research, graduate education, plant display, community in K-12 education, and plant diversity conservation…A key part of our mission concerns promoting urban landscape use of native Californian plants for four reasons: First to promote California's sense of place so that we don't all look like Ohio, where I came from. Also, to increase the appreciation of nature. Thirdly, because native Californian plants are not invasive, in other words they don't get loose in natural environments and out-compete the desirable plants. And last, but certainly not least, is that they conserve water in the landscape. We all face some very difficult challenges in doing this together. First is the challenge of perception. Many persons out there, gardeners, think that if you are going to have a native plant landscape, it is going to look like chaparral. That is not true that native plants are very fussy in the landscapes. Some are, but many are not. And that you need to be an expert in order to garden or landscape with natives — that also is not true — but it is a challenge to battle those misperceptions. Another perception, unfortunately that is true…concerns the availability of native plants. About a year ago, I did a study of the retail nursery industry, in which I asked the question, what proportion of the plants available in Southern California, for landscaping, are native to Southern California?…Well the grand answer to this, unfortunately, is 0.1%. Very, very few plants that you can buy at the major retail outlets are native to Southern California. So, what I am suggesting that we do, is to select the garden-worthy natives and concentrate on promoting

Public Comments Excerpts

them so that we have a reliable palate. Our third challenge concerns expertise in growing, selecting, and managing native landscapes, so that we have successful landscapes. That involves the nursery trade, it involves landscape designers, including home gardeners, and landscape maintenance professionals. So there are four initiatives that I see as doing largely together… One is selecting the best native plants for urban landscaping. There are 6000 species and varieties native to the state of California. The vast, vast majority, I think we would agree, are not really good garden-worthy plants. We need to select the best ones, and we're making some progress on that and advocating their use. Second, is working with the mainstream nursery industry to develop their expertise and their marketing with regard to native plants. They can make a lot of money at this. Third, [is the establishment of] demonstration gardens, [and] institutional and home gardens, where anyone can see that native gardens are beautiful, and more importantly, feasible. And finally, training landscape maintenance professionals. Your Protector Del Aqua Program is a terrific start in that direction. So to conclude, I would just say that I look forward to collaborating with MWD in achieving our common end of Southern California urban landscape characterized by handsome, water-efficient gardens, featuring plants native to California and I'll be keeping an eye on that 0.1% number and hope that we can do something about it."

- Clem Hamilton, executive director, Rancho Santa Ana Botanic Garden at Claremont (similar written comments were also received)

"The Hayden bills really are the opportunity for Southern California to get some credit for the work we've done in conservation, groundwater recovery, and water reclamation…I want to commend Met on the efforts it's made and the investments it's made, but I want to say…we really have to look towards the future and…to say how we are going to expand on our existing programs and build on the success we've had in the past. You have an opportunity this afternoon with our continued funding of the clothes washer program here. As success builds, money runs out for a lot of these programs, sometimes a lot more quickly than you anticipate. The same will probably happen with the commercial/industrial program, which Met did step up and fund. As it was mentioned before, we are having less funding opportunities, obviously from the state and the federal government, and so all local agencies and Met are going to have to fund these programs and make them work. I do want to say that the move towards outdoor landscaping, for a lot of water is being used and wasted, and commercial/industrial programs are very important. And also the links that you are making between water quality and storm water [are important]…So, I wanted to thank you for this opportunity, but I wanted you to also look to the future and perhaps this report can look at more what we are going to be doing, then what we have done in the past."

- Conner Everts, executive director, Southern California Watershed Alliance

"For a number of years I've been involved in looking at landscapes from the standpoint of sustainability, and in this process it has taken me to look at the role of plants and become very clear about their significance and importance to life on this planet, and their foundation role in sustaining ecosystems…we create landscapes in our urban environments, and through studying many factors you can, pretty convincingly conclude, that none of our urban landscapes are truly sustainable. They need some form of subsidy, and ultimately do lead to a greater release of carbon than storage of carbon, greater consumption of oxygen than release of oxygen, and a greater net production of pollution, indirectly and directly through the way that we plan, design, and maintain our landscapes.

Public Comments Excerpts

So, we have a product here that is very counterproductive and a lot of what is stimulating this counterproductive product is the availability of water and the way in that we choose to use it and historically we have had access to water at a very cheap rate and abundant supplies that has allowed us to define lifestyle as a way of expressing it through landscape. I'm very pleased to see Metropolitan beginning to show, through their conservation programs these days, the intent to step into the landscape issue and to work with it, with the goal of conserving resources, mainly water. In this regard, I've looked at a number of programs here, and realized that saving water and landscape is not simply done through retrofitting some of the equipment but is affecting peoples' awareness and their sense of values. And, I like very much to hear in this conservation program, the idea of returning to California's natural heritage, and think that we need to really embrace upon visions and programs that speak to people's hearts and commitments to how they wish to live and I do see this beginning to happen in the conservation program again. Along these lines, a practical note is to realize the need to work with water pricing, that many people are influenced by the cost of water and this is going to stimulate their choices and to have them take the issue of conservation more seriously. The idea of working with California native plants also allows us to talk about the sense of community, the sense of place, and again I find these to be very powerful concepts and influential ones to continue to incorporate in the Metropolitan programs in the future. And so I am very positive about the latest activities over the past year to develop the landscape conservation program and to work in this direction."

- Bob Perry, landscape architect

"I just wanted to share with the group some perspectives that our utility has with regard to future urban water management plans, in light of a new report that has come out by the Department of Water Resources, which indicates what their draft guidelines for implementation of Senate Bill 610 and Senate Bill 221 are [Draft Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001, to assist water suppliers, cities, and counties in integrating water and land use planning, Department of Water Resources, September 25, 2002]… in our view, the bar has been raised with future urban water management plans… and since all of our water comes from Metropolitan, we're suggesting that the schedule shift a little bit for Metropolitan [to supply applicable data], since we are going to need at least some of your data on [SB] 610/221 compliance. And, we would hope that that data would be available at least by the first quarter of the year that it's due, and our only suggestion is that when this group meets next year, hopefully you have a plan on how to accomplish that."

- Norm Buehring, director of resource conservation, Las Virgenes Municipal Water District

Community Partnering Program Recipients

Other Recipients of Community Partnering Program Co-sponsored Educational Projects in 2002 include:

Abuelitos Internacional

Creation of a three-part series of children's books on environmental protection, including water conservation

Ask Earthman Foundation

Video series for television includes ecology, conservation, and California's environmental heritage

California Science Center, Los Angeles

Community youth water education program for more than 2,000 students

City of Oxnard

Groundwater recovery enhancement and treatment outreach program with emphasis on recycled water

City of Pasadena Department of Water and Power

Consumer water forum

City of Santa Monica

Ballona Creek Watershed/Wetlands map Phase II

Friends of the Children's Museum

On-going water resources education via a proposed exhibit, "Clear Water Mountain." Museum attendance approximately 50,000 students and 30,000 walk-ins annually

Helix Water District

Community outreach program for new water treatment plant for elementary students and adults

Rincon del Diablo Metropolitan Water District

Upgrading of demonstration garden for xeriscape awareness and residential landscape classes

Sacramento River Watershed Program

Partnership with News 10 to promote public awareness on watershed issues and water purity issues

South Coast Resource Conservation and Development

"Conservation on Wheels: the pH Experience" teaches third and fourth graders the importance of healthy watersheds

Community Partnering Program Recipients

The Foundation for Cal State San Bernardino

Water festival 2003, includes water forum, school garden; attendance 10,000

The Japanese Garden

Public education center to teach and promote water conservation, reclamation, reuse and general water science awareness

Three Valleys Municipal Water District

Learning to be Water-Wise program for 630 fifth-grade students

TODEC Legal Center

Outreach program on water issues for limited- and non-English-speaking rural Riverside County agricultural workers

Water Conservation Garden Authority

Production of an educational 30-minute video on water conservation, irrigation and xeriscape techniques for use on public-access TV

Water Education Foundation

Sponsorship of water resources, water leaders and water law courses

Water Resources Center Archives

California colloquium on water lecture series, available to all UC students through on-line library system and newsletter

Western Municipal Water District—The Water Education Advisory Council

Project WET workshop for 54 teachers and 1,700 students, and signage for existing xeriscape garden

White Memorial Medical Center

Water education programs for educators and healthcare workers

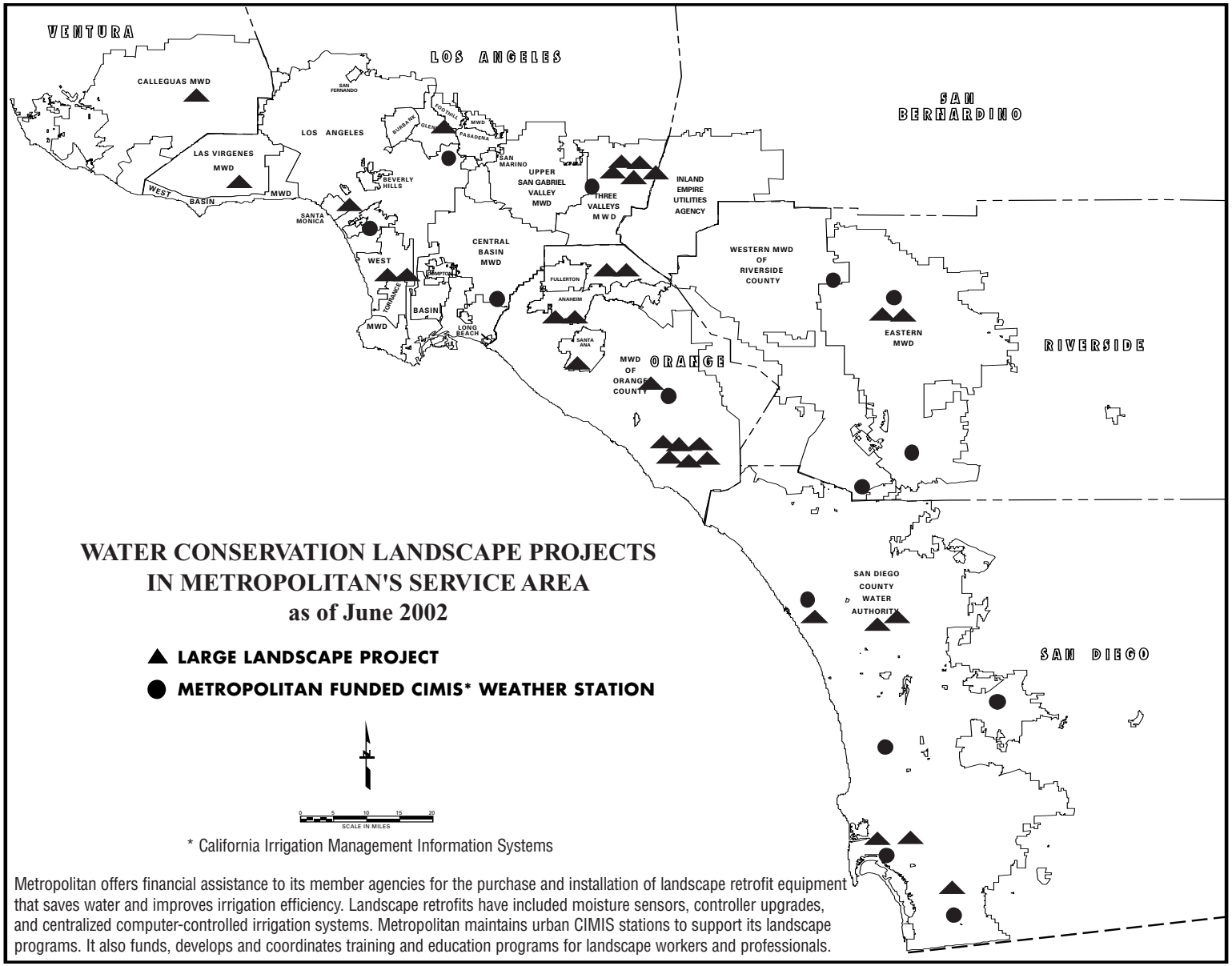
Summary of Metropolitan's Best Management Practices (BMP) Conservation Programs

BMP #	BMP name	Metropolitan Program Description	Metropolitan Program Activities	Quantities 6-30-01	Dollars Through 6-30-01	Quantities FY 2002	Dollars FY 2002
1	Residential Water Surveys	Financial support for surveys, retrofits & R&D	Surveys Toilet device distribution Residential R&D (projects)	62,096 1,130,196 8	$1,779,935 $1,303,436 $299,799	3,641 613	$94,292 $2,087
2	Residential Plumbing Retrofits	Financial support for retrofits & distribution	Low-flow showerheads distributed Faucet aerators distributed	2,960,929 211,471	$12,375,809 $210,305	1,480 3,831	$7,231 $3,831
3	System Water Audits, Leak Detection	Distribution system leak detection audits	MWD surveys own pipes & aqueducts MWD water audits & leak detection for MAs	Annually 6	$3,150,000 $280,000	Annual	$350,000
4	Mertering & Commodity Rates	All connections metered		N/A	Yes	N/A	Yes
5	Large Landscape	Financial support for surveys, retrofits, education & R&D	Audits conducted Moisture sensors Irrigation controllers Central controllers Protector del Agua graduates Landscape education Circuit rider program (cities) Landscape R&D (projects)	1,530 499 45 4 11,080 24 240 10	$666,441 $132,329 $299,006 $490,692 $883,601 $45,485 $162,250 $324,586	132 1 5,421 N/A	$44,682 $6,139 $278,535 $32,052
6	High Efficiency Washing Machines	Financial support for rebates	Residental HE washers rebated (via MAs) Residental HE washers rebated (via energy utilities)	13,121 8,060	$453,480 $282,100	10,047	$350,985
7	Public Information	Materials & programs provided		N/A	$11,028,160	N/A	$376,481
8	School Education	Full range of school curricula		N/A	$6,664,157	N/A	$750,000
9	Commercial, Industrial, Institutional	Financial support for surveys, retrofits, workshops & R&D	ULFTs Urinals Flush valve kits Cooling tower retrofits Clothes washer rebates Industrial process improvements Pre-rinse spray valves Surveys Workshops on commercial retrofits CII R&D (projects)	31,628 564 185 221 3,411 N/A N/A 905 7 10	$1,865,880 $41,036 $2,775 $103,000 $288,500 N/A N/A $650,000 $7,000 $325,071	9,091 152 80 80 2,792 1 53 1 N/A	$566,428 $11,695 $1,983 $42,825 $512,885 $84,284 $3,525 $1,000 $2,523
10	Wholesale Agency Assistance	Financial support & assistance provided for BMPs 1-9 & 11-14		N/A	See Total Below	N/A	See Total Below
11	Conservation Pricing	Commodity rate structure in place		N/A	Yes	N/A	Yes
12	Conservation Coordinator	Staff of 9 people		N/A	$8,784,000	N/A	$965,690
13	Water Waste Prohibition	Exempt		N/A	N/A	N/A	N/A
14	Residential ULFT Replacements	Financial support for retrofits & rebates	Toilet rebates for retrofits	1,618,481	$102,518,878	190,463	$11,428,780

Total Spent by Metropolitan Water District:	$155,418,000	$15,917,000
Total Spent by Metropolitan Water District Through FY 2002:		$171,335,000

(Totals have been rounded)

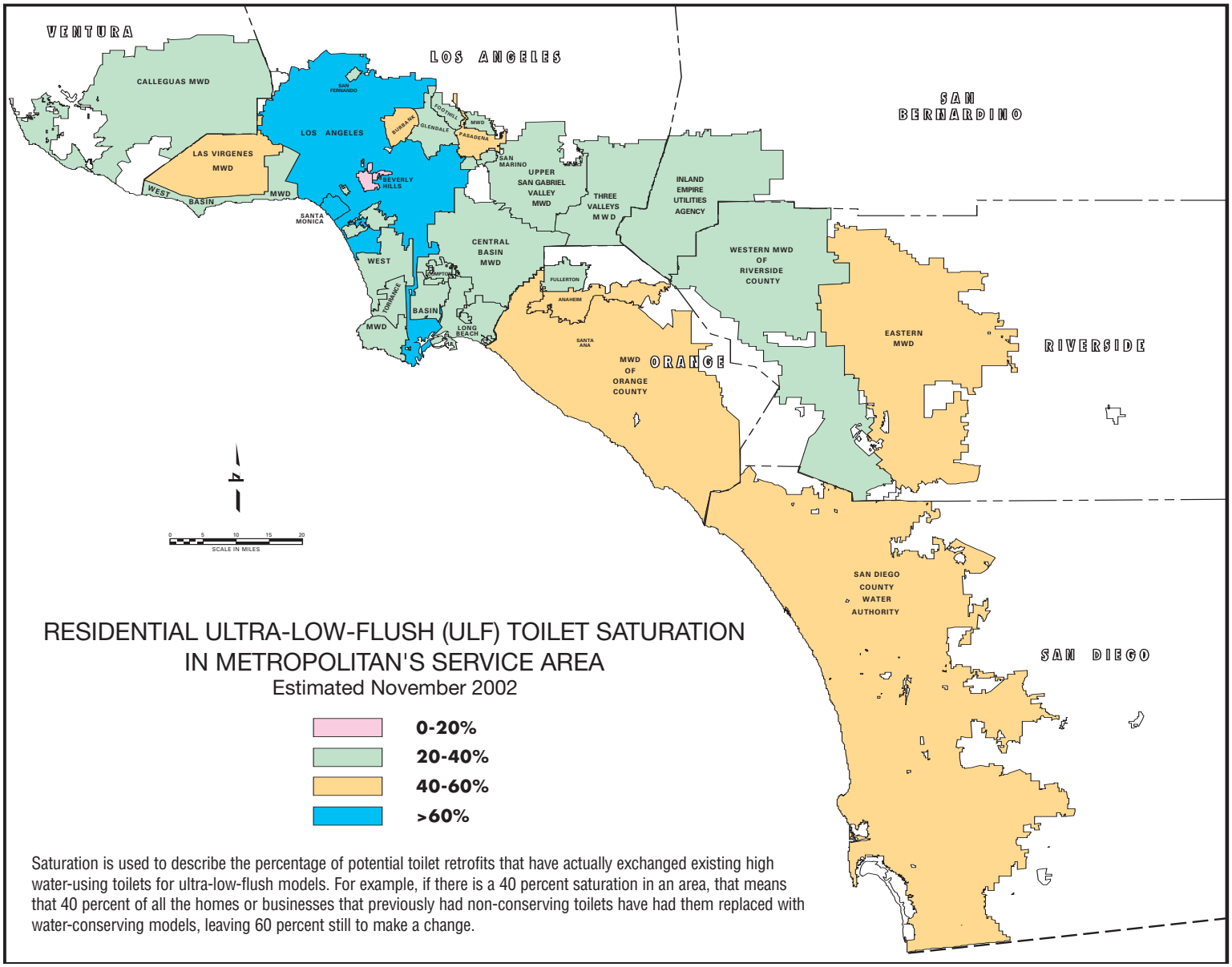
Water Conservation Landscape Projects



* California Irrigation Management Information Systems

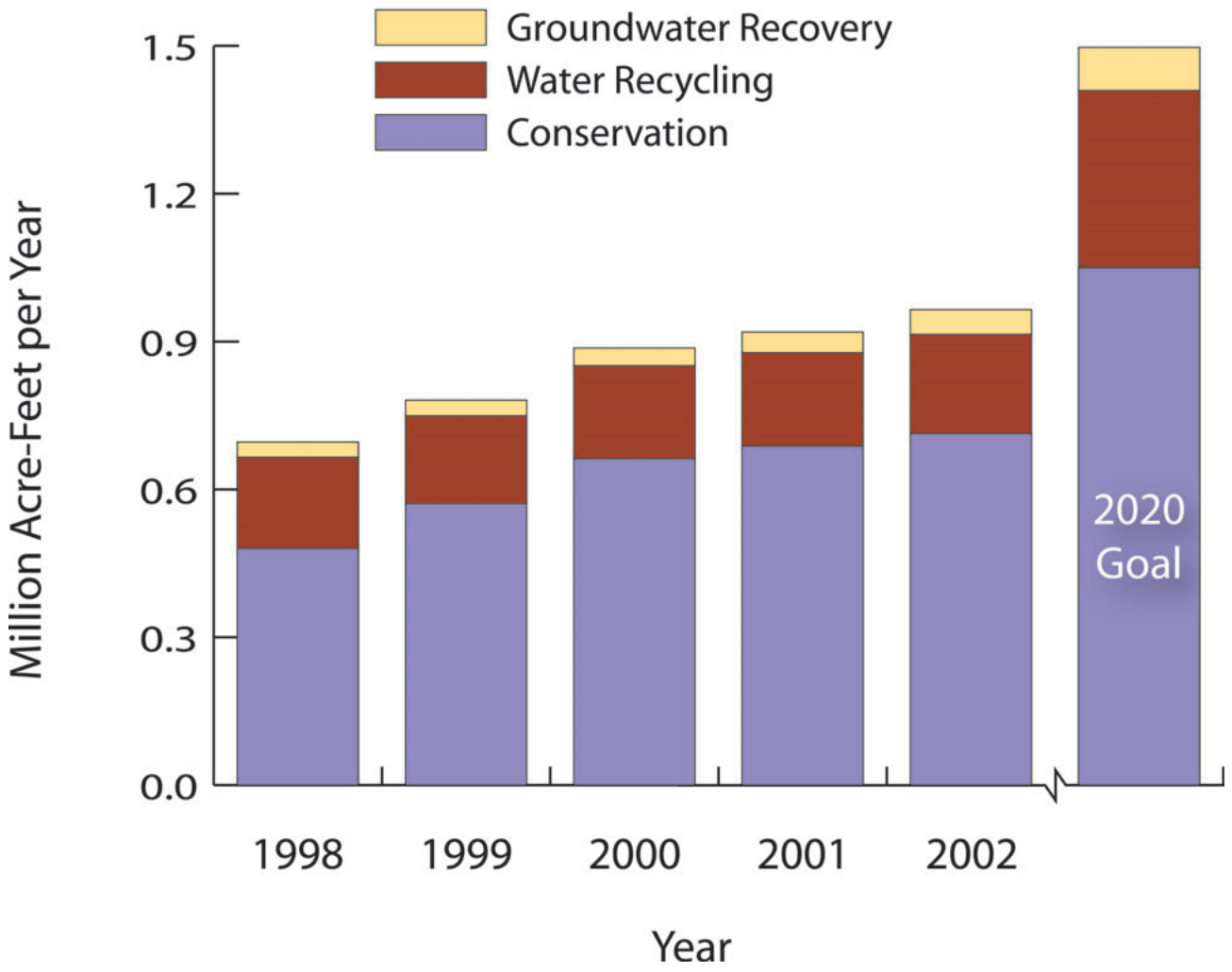
Metropolitan offers financial assistance to its member agencies for the purchase and installation of landscape retrofit equipment that saves water and improves irrigation efficiency. Landscape retrofits have included moisture sensors, controller upgrades, and centralized computer-controlled irrigation systems. Metropolitan maintains urban CIMIS stations to support its landscape programs. It also funds, develops and coordinates training and education programs for landscape workers and professionals.

Residential Ultra-Low-Flush Toilet Saturation



Saturation is used to describe the percentage of potential toilet retrofits that have actually exchanged existing high water-using toilets for ultra-low-flush models. For example, if there is a 40 percent saturation in an area, that means that 40 percent of all the homes or businesses that previously had non-conserving toilets have had them replaced with water-conserving models, leaving 60 percent still to make a change.

Comparison of Regional Conservation, Water Recycling, and Groundwater Recovery with 2020 Integrated Resources Plan Goal



Native Plant Resource Guide

This list offers a good starting place to learn more about native plants. There are many more resources available.

Botanic Gardens Displaying Native Plants

Descanso Gardens
(818) 949-4200 (La Cañada)
www.descansogardens.org

Fullerton Arboretum
(714) 278-3579
www.arboretum.fullerton.edu

Rancho Santa Ana Botanic Garden
(909) 625-8767 (Claremont)
www.rsabg.org

UC Riverside Botanic Gardens
(909) 787-4650
www.gardens.ucr.edu

Native Plant and Water Conservation Demonstration Gardens

The Water Conservation Garden
(619) 660-1684 (El Cajon)

El Alisal: Charles F. Lummis Home
(213) 222-0546 (Los Angeles)

Landscapes Southern California Style
(909) 780-4170 (Riverside)

Waterwise Garden
(714) 765-4256 (Anaheim)

E. Rowley Demonstration Garden
(909) 626-2711 (Montclair)

South Coast Botanic Garden
(310) 544-6815 (Palos Verdes Penninsula)

Organizations

Metropolitan Water District of Southern California
www.mwdh2o.com

Rancho Santa Ana Botanic Garden
(909) 625-8767
www.rsabg.org

California Native Plant Society
www.cnps.org

California Oaks Foundation
www.californiaoaks.org

Theodore Payne Foundation
(818) 768-1802
www.theodorepayne.org

Wildflower Hotline
(March-May)
(818) 768-3533

Nurseries

Dean's Greens
(909) 899-1820 (Etiwanda)

El Nativo Growers, Inc.
(626) 969-8449 (Azusa)

Garrison Foothill Nursery
(909) 949-9878 (Upland)

Las Pilitas Nursery
(760) 749-5992 (Escondido)

Matilija Nursery
(805) 523-8604 (Moorpark)

Mockingbird Nursery
(909) 780-4571 (Riverside)

Mt. Fuji Nursery
(909) 985-2219 (Upland)

Native Sons
(805) 481-5996 (Arroyo Grande)

Persson's Nursery
(626) 792-6073 (Pasadena)

San Marcos Growers
(805) 683-1561 (Santa Barbara)

Suncrest Nurseries, Inc.
(831) 728-2595 (Watsonville)

Tarweed Nursery & Landscape
(818) 888-2318 (Chatsworth)

The Garden
(909) 629-2062 (Pomona)

Tree of Life Nursery
(949) 728-0685 (San Juan Capistrano)

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 and replenishment, watershed management, habitat restoration, and environmentally compatible community development utilizing the resource potential of the Los Angeles River, the San Gabriel River, or other southern California rivers, including storm water runoff from these rivers:

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

(2) The Water Replenishment District of Southern California.

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

(4) The County of Los Angeles.

(5) The United States Army Corps of Engineers.

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

Member Agencies

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

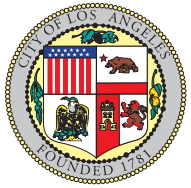
Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

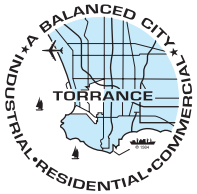
Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928



Joined Metropolitan
December 6, 1928

Joined Metropolitan
February 27, 1931



Joined Metropolitan
February 27, 1931

Joined Metropolitan
February 27, 1931

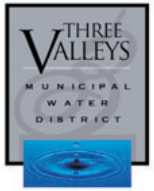
Joined Metropolitan
February 27, 1931

Joined Metropolitan
December 17, 1946

West Basin
Municipal Water District

Joined Metropolitan
July 23, 1948

Joined Metropolitan
October 16, 1950



Joined Metropolitan
November 15, 1950

Joined Metropolitan
November 26, 1951

Joined Metropolitan
November 26, 1951

Joined Metropolitan
January 15, 1953

Joined Metropolitan
November 12, 1954

Central Basin
Municipal Water District

Joined Metropolitan
November 12, 1954

Joined Metropolitan
December 1, 1960

Joined Metropolitan
December 14, 1960

Joined Metropolitan
March 27, 1963

Joined Metropolitan
November 12, 1971

ANNUAL PROGRESS REPORT TO THE CALIFORNIA STATE LEGISLATURE

SNAPSHOTS OF THE PAST...
...PORTRAIT OF A NEW REALITY

ACHIEVEMENTS IN CONSERVATION, RECYCLING AND GROUNDWATER RECHARGE
FEBRUARY 2004

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

THIS PAGE INTENTIONALLY

LEFT BLANK

ANNUAL PROGRESS REPORT TO THE CALIFORNIA STATE LEGISLATURE
FEBRUARY 2004

SNAPSHOTS OF THE PAST... PORTRAIT OF A NEW REALITY

ACHIEVEMENTS IN CONSERVATION, RECYCLING AND GROUNDWATER RECHARGE

75TH ANNIVERSARY
1928 - 2003

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Then . . .

Frank E. Weymouth
First General Manager
& Chief Engineer

W.P. Whitsett
First Board Chair

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.

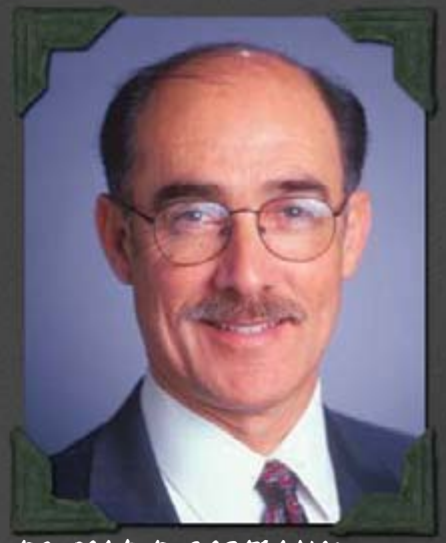
It is now governed by a 37-member board of directors representing 26 member public agencies that purchase some or all of their water from Metropolitan and serve 18 million people across six Southern California counties.

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.

For more information about this report contact Kathy Cole, Metropolitan's Executive legislative representative, at (916) 650-2642 or kcole@mwdh2o.com

. . . Now



Ronald R. Gastelum
Current President & CEO

Phillip J. Pace
Current Board Chair

Table of Contents

1. Executive Summary 2

2. Achievements 9

3. System Reliability 23

4. Colorado River Aqueduct and State Water Project Programs 25

5. Water Quality Programs 30

6. Public Participation 33

7. Appendix 35

Metropolitan's mission has evolved to include much more than just building and maintaining water facilities. Supply reliability comes not just from a sound infrastructure, but innovative programs like the Native and California Friendly Plant campaign

Executive Summary

The Metropolitan Water District of Southern California celebrated its 75th anniversary in 2003. So did the Volvo Car Corporation, Motorola, Farmer's Insurance, and Rice Krispies Cereal. Being in existence for 75 years is an accomplishment in and of itself, but being able to straddle such an enormous expanse of time and change and still have some snap, crackle and pop to spare is pretty remarkable.

If we were to look at a set of before and after pictures of all of these celebrants, we'd see a largely changed profile that still retains some features reminiscent of earlier days. Volvo was and still is distinguished by a commitment to safety. Metropolitan was and still is committed to a mission of providing reliable water supplies for Southern California.

Just as car frames and safety features have changed over time, so too has Metropolitan's definition of its mission and way of doing business.

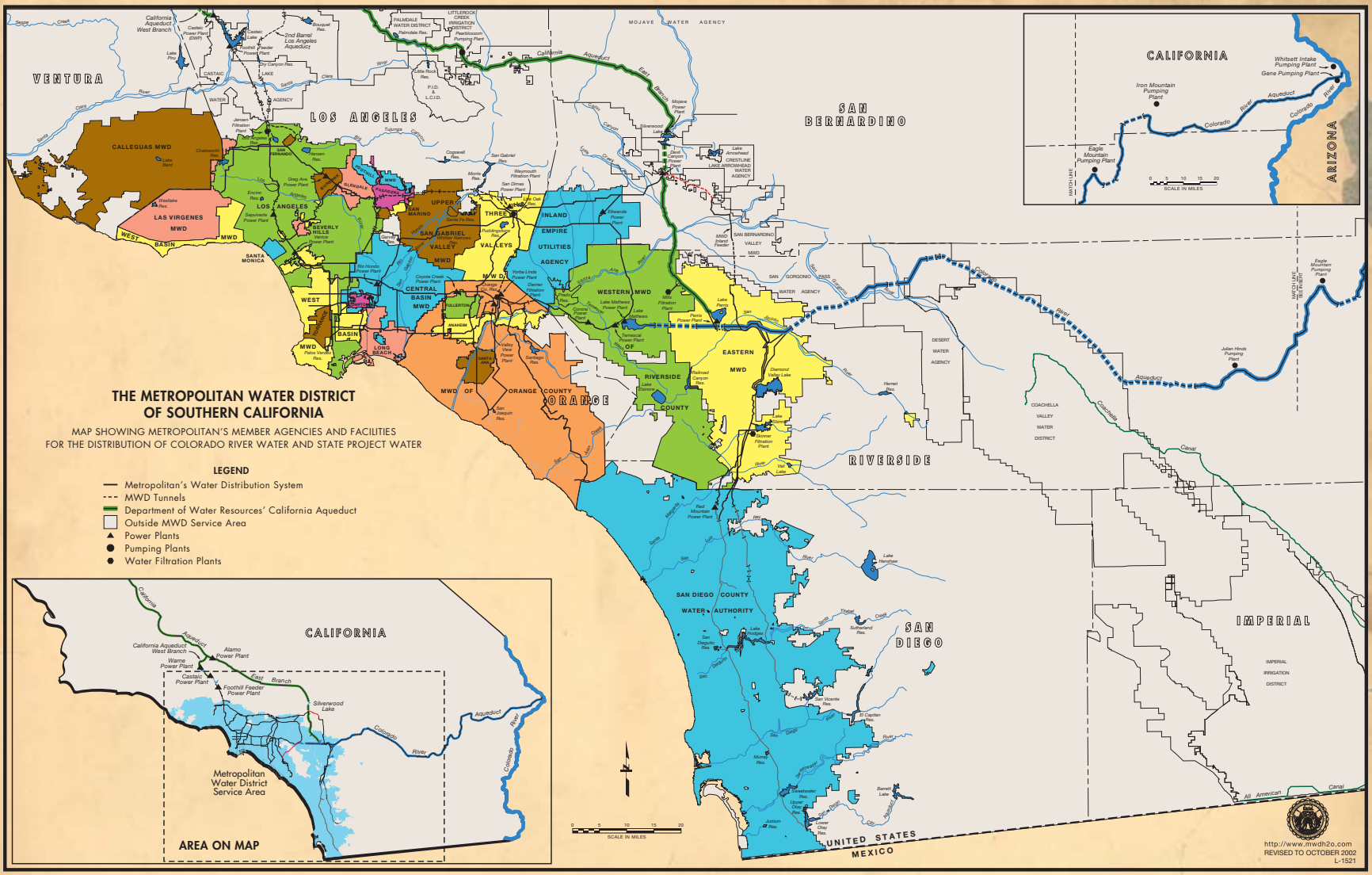
This annual report, submitted to the state Legislature, will highlight the old and new realities for Metropolitan. It will track Metropolitan's progress in water conservation, recycling and groundwater recharge programs and highlight other achievements that contribute to a reliable water supply for Southern California through 2020 and beyond.

Metropolitan celebrated much more than a big anniversary in 2003; many major milestones were achieved. In keeping with the theme of diamond anniversaries, Metropolitan opened Diamond Valley Lake—the Southland's largest reservoir and the biggest earth-moving construction project in United States history—to public recreation.

METROPOLITAN BOARD MEMBERS, THEN...

AND NOW

Executive Summary



METROPOLITAN'S SERVICE AREA

Executive Summary

Metropolitan-Assisted Local Resources

	Active Conservation[1]	Water Recycling	Groundwater Recovery
Cumulative Investment Through Fiscal 2003	$191 million*	$109 million	$33 million
Cumulative Production	509,500 AF**	605,000 AF	202,000 AF
2003 Production***	82,000 AFY**	72,000 AFY	38,000 AFY

Metropolitan-Assisted Groundwater Programs

	Contractual Storage[2]	Water Rate Incentives
Cumulative Investment Through 2003	$28.5 million	$290 million****
December 2003 Storage/Delivery	239,000 AF	

1 "Active Conservation" is water saved directly as a result of conservation programs funded by water agencies. In contrast, "Passive Conservation" is water saved as a result of changes in efficiency requirements for plumbing fixtures and plumbing codes.

2 Contractual storage investments are Metropolitan funding of Groundwater Cunjunctive Use programs activated prior to or during 2003.

*Total spending under Metropolitan's Conservation Credits Program and conservation-related public information and education activities.

**Water savings estimates are based on plumbing device retrofits, industrial process improvements, landscape efficiency improvements, and water efficiency surveys. The total water savings that will accrue during the effective life of these devices and activities will be roughly 1.6 MAF.

***Data shown for Fiscal Year 2003.

****"Water Rate Incentives" represent the discount in water rates Metropolitan provides to its Member Agencies to encourage groundwater storage.

Note: Because water savings over the life of a device are not included, it would be incorrect to divide water savings by total spending in an effort to calculate the unit cost of conservation.

AFY = acre-feet per year. 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.

The agency also was signatory to an historic agreement that lays out the plan for reducing California's dependence on Colorado River water and addresses environmental issues related to the Salton Sea. Term for the agreement: 75 years! Other milestones in 2003 included:

- The launch of a City Makeover Program which provided grant monies to 11 recipients for new native and California Friendly-themed landscapes in prominent public locations
- Groundbreaking for the Center for Water Education, and Western Center for Archaeology and Paleontology at Diamond Valley Lake
- A targeted advertising campaign for residential homeowners offering tips for reducing water waste with more efficient sprinkler programs and encouraging the use of California Friendly and native plants
- Implementation of a new and more flexible rate structure
- Construction of the Arrowhead Tunnels of the Inland Feeder that will allow more flexibility to deal with future changing conditions, including climate change
- Completion of comprehensive planning documents including a report on water supply reliability and release of the updated 1996 Integrated Resources Plan for public comment
- Completion of an upgrade to the first of five Metropolitan water treatment plants scheduled to convert to ozone disinfection
- Renovation of Metropolitan's oldest reservoir outlet tower at Lake Mathews
- Approval to move forward with a plan to fluoridate Metropolitan's imported water supply by 2005
- Execution of several new groundwater storage agreements

This list of achievements hints at a new reality—that the Southland's water supply mix has some different features. In fact, about 50 percent of Southern California's demand is being met through water conservation, recycling, groundwater recovery and local supplies. The list also underlines a continued commitment to water quality improvements.

ACTRESS RENE RUSSO ANNOUNCES FINALISTS FOR METROPOLITAN'S CITY MAKEOVER PROGRAM

ONE OF ELEVEN CALIFORNIA FRIENDLY LANDSCAPES PLANNED FOR PUBLIC LOCATIONS

Executive Summary

COLORADO RIVER AQUEDUCT CONSTRUCTION

NEW TECHNOLOGY PROVIDES LINK TO WEATHER STATIONS FOR BETTER IRRIGATION EFFICIENCY

It's been said that Southern California is coming full circle in terms of where its water comes from. In the early part of the 20th century, the region was mostly dependent on what it could find locally. Then came the dream of aqueducts and the reality of getting water from faraway places. In the 1940s and 50s, the Colorado River became a major source of Southland water. The State Water Project filled up even more of the gap between local supply realities and need. Limitations in both sources of imported supply have challenged Southern California water managers to develop additional local resources in order to live up to promises of reliability.

Conservation

In 2003, Metropolitan committed $20 million to conservation programs and related activities.

Metropolitan expanded its efforts by augmenting indoor water conservation programs with new outdoor saving opportunities through a targeted advertising campaign. The message: encourage residents to get their automatic sprinkler schedules more in sync with their plant and soil needs and to consider native and California Friendly plants in their future landscape plans.

To support greater consumer awareness of the benefit of more water-efficient landscapes, Metropolitan launched its City Makeover Program which grants funds to retrofit prominent public spaces with native and California Friendly plants. Working in concert with established native plant societies and experts, Metropolitan has been successful in enlisting retailers to offer more native and California Friendly plants.

Recycling

Regional recycled water production in 2003 is estimated to be 204,000 acre-feet. A growing portion of landscape is being irrigated with recycled water, and more and more agencies are expanding their recycling programs to insulate against future droughts. The most recent program expansion is a Metropolitan agreement with the Inland Empire Utilities Agency that expands the geographic area of their existing project eligible for Metropolitan's financial contributions.

Groundwater

In 2003, Metropolitan entered into several new 25-year groundwater storage agreements that will cumulatively put more than 53 billion gallons of water into storage in Orange County, the west San Gabriel Valley and the Inland Empire. The agreements, funded in part by Proposition 13, *The Safe Drinking, Clean Water, Watershed Protection and Flood Protection Act* approved by voters in 2000. Proposition 13 gave $45 million to Metropolitan for local resource development to continue a wave of new groundwater agreements. Partnerships were entered into

this year with the Orange County Water District, Municipal Water District of Orange County, Foothill Municipal Water District and Inland Empire Utilities Agency, Three Valleys Municipal Water District, and the Chino Basin Watermaster.

New Storage Partnerships

In 2003, Metropolitan gained three new partners for groundwater storage, improving the region's reliability in dry years by arranging for additional storage in wet years. The new agreements are with Kern-Delta Water District, the Mojave Water Agency and North Kern Water Storage District.

Water Quality

Metropolitan's board approved new policy principles in support of a consumer's right to know about the quality of water from all sources, including bottled and vending machine water. Other new policy principles support efforts to communicate water quality information in spoken languages and terms that all consumers can understand. Metropolitan also engaged in watershed activities to address water quality protection including continued involvement in CALFED programs.

Desalination

An increased goal for desalting seawater has been added to the Integrated Resources Plan (IRP) Update, which examines new supply realities since the original report was drafted in 1996. Desalination is becoming a more viable supply source due to technical advances and potentially lower costs. Metropolitan has been working with five of its member agencies that submitted proposals under the 2001 Seawater Desalination Program to finalize uniform agreement terms and principles. Additionally, to help launch member agency research efforts, Metropolitan's board approved a contribution of $250,000 that will be divided equally among the five member agencies to conduct research leading to full project implementation, including site assessment and feasibility studies.

Community Outreach

In its fourth year, Metropolitan's Community Partnering Program continued to provide grants for conservation-themed projects and awarded more than $500,000 in 2003 for 97 projects (described in more detail in the body of the report and Appendix). Partnering opportunities extended to Northern California as well.

Average Per Capita Water Use
(gallons per capita per day)

Seattle	103
San Francisco	106
Tucson	135
El Paso	136
Portland	137
Los Angeles	140
San Diego	150
Santa Cruz	155
Boulder	157
Missoula	158
Oakland	160
Albuquerque	182
Phoenix	184
Denver	228
Salt Lake City	284
Las Vegas	307

Source: American Water Works Association, 1999.

Executive Summary

This year the Innovative Conservation Program, which was approved to be a permanent program by Metropolitan's board in 2002, selected 10 projects for further study and development. As its name suggests, this program seeks to explore new and innovative approaches to water conservation.

The Integrated Resource Plan Update

In 2003, an update to the 1996 IRP was prepared, accomplishing the three objectives of reviewing goals and achievements of the 1996 IRP, identifying changed conditions for water resource development and updating the resource targets through 2025.

The 2003 IRP Update, a process that occurred over a two-year period, included several meetings, workshops and briefings that were held to gather input and report findings. Public review is planned for early 2004.

The results of the Update analysis demonstrate that the resource targets of the 1996 IRP, factored in with changed conditions—the most significant being higher projected local supplies and greater conservation savings—provide for reliability through 2025.

Even though the 1996 resource targets did not need to be revised, the IRP Update did identify two new areas of concern: 1) increased water quality regulation, and 2) an implementation risk associated with the development of planned projects; in other words, the chance that planned projects would be delayed or never come to be for a variety of reasons. The IRP Update recommends a 10 percent supply buffer to manage the two areas of concern and other uncertainties. The planning buffer calls for Metropolitan to add 500,000 acre-feet to existing water resource plans by 2025, equally split between local and imported sources.

Sacramento Valley Water Transfer Program

In January 2003, Metropolitan's board authorized one-year transfer option agreements with 11 Sacramento Valley water districts to ensure water supply reliability. Metropolitan secured 146,230 acre-feet of options from these districts, of which 126,230 acre-feet were exercised.

Conclusion

There is a new reality for Southern California's water supply outlook. The outlook is a reflection of how well we, as a region, have adapted to change. We started out totally dependent on local water supplies, brought imported supplies to augment local resources, and have now developed a balanced portfolio of local and imported supplies to meet current and future demands. Just as we are trying to recapture our landscape heritage by promoting native and California Friendly plants, Metropolitan recognizes that the key to our future may very well come from the pages of our past.

MEETING OF UPPER & LOWER COLORADO RIVER BASIN INTERESTS

ANNUAL STUDENT FORUM ON WATER ISSUES

Conservation

Guiding Policies

Metropolitan is committed to providing effective water conservation programs and services. Since 1992, Metropolitan has invested more than $191 million in conservation programs and related activities within the region. The commitment to conservation continues to expand while the focus of programs has shifted to capture new innovative opportunities for saving water.

Metropolitan's conservation policies have their foundation in two documents—Metropolitan's IRP and the California Urban Water Conservation Council's Memorandum of Understanding Regarding Urban Water Conservation in California (as amended December 11, 2002), to which Metropolitan is a signatory. Metropolitan's leadership and support of conservation extends to the greater water community in California.

Metropolitan's implementation of a new rate structure in January 2003 includes a funding source dedicated to conservation, recycling, groundwater recovery and other local projects. It includes a two-tiered water supply charge for imported water that uses price signals to encourage water agencies to invest in cost-effective conservation, water recycling, transfers, desalination and groundwater programs. In addition, the two-tiered structure allocates a greater share of costs to Metropolitan's member public agencies that use more water in the future. This new structure represents a departure from the previous structure in many ways, most notably in a pricing plan that gives member agencies more flexibility and choice in how they obtain water. The "Water Stewardship Rate" funds Metropolitan's Local Resources and Conservation Credits Programs and provides financial support to member agencies for furthering local water management programs.

WATERLESS URINAL - A NEW CONSERVATION DEVICE

The Conservation Credits Program

The backbone of Metropolitan's conservation program is the Conservation Credits Program initiated in 1988. Metropolitan contributes $154 per acre-foot of water conserved (up to one-half the program cost) to assist member agencies in pursuing conservation opportunities.

Partnering with Agriculture

Parallel to its urban water conservation efforts, Metropolitan began a pioneering agricultural water savings program in 1990 with the Imperial Irrigation District (IID). To date, Metropolitan has invested more than $193 million to construct, operate and maintain projects with IID which will conserve more than 100,000 acre-feet of agricultural water every year to transfer to Metropolitan. Calendar year 2003 water savings were 105,130 acre-feet. The agreement is for a minimum 43 years.

Agricultural Conservation Program Numbers

$193 million - Cumulative investment to date by Metropolitan to construct, operate and maintain projects in cooperation with Imperial Irrigation District to conserve more than 100,000 acre-feet of agricultural water every year for a minimum of 43 years

105,130 acre-feet - 2003 calendar year water savings for the IID-Metropolitan projects

2004 - Implementation of the Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program is expected to begin in 2004

Achievements

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

From 1992 to 1994, Metropolitan conducted a test program with farmers served by the Palo Verde Irrigation District (PVID) in the Palo Verde Valley. Participants agreed to not irrigate a portion of their land in exchange for payment by Metropolitan. No farmland was "retired," no land converted to another use, or lost as prime agricultural land. The program saved about 186,000 acre-feet of water from roughly 20,000 acres of farmland that were not irrigated.

With the success of the pilot program, Metropolitan's board authorized $94.3 million in October 2002 to initiate a full-scale 35-year land management, crop rotation, and water supply program. Under the proposed agreement, farmers will stop irrigating between 7 to 29 percent of their land on a rotating basis at Metropolitan's request, securing about 8 to 36 billion gallons of water each year for urban Southern California. A one-time payment of $3,170 per acre is allocated for each farmer's maximum non-irrigated acreage and an additional annual payment of $602, subject to escalation, for each acre not irrigated under the program in that year.

As part of the agreement, Metropolitan will provide an estimated $6 million for local community improvement programs. The funds are to be administered by a non-profit foundation being selected by Palo Verde Valley community representatives. Field implementation of the program is expected in 2004.

Metropolitan is involved in several water conservation and transfer programs with other agricultural agencies which include:

- San Diego County Water Authority/Imperial Irrigation District Agreement for Transfer of Conserved Water
- Sacramento Valley Water Transfers
- Coachella and All-American Canal Lining (transferred to San Diego County Water Authority as part of the Quanitifcation Settlement Agreement)

Conservation Incentive Program Numbers

Six - New grants awarded in 2003 whose benefits accrue to Metropolitan for:
- Residential clothes washer rebates
- Evapotranspiration Irrigation Controller Installation Rebates
- Pre-rinse spray valve installations
- California Friendly landscape pilot for new homes
- Data logger analysis
- Support for additional Innovative Conservation Program applicants

$6.3 million - Cumulative total of grant funds for program pilots, extensions, and device analyses

2.1 million+ - Number of ultra-low-flush toilets retrofitted to date saving roughly 24 billion gallons per year

67,000 - High-efficiency clothes washers credited to the rebate program.

1,750 - On-site surveys of interior/exterior water use this fiscal year

10 - Number of new projects to receive grants for the Innovative Conservation Program

24,000 - Total number of participants through FY 2003 who have participated in the Protector del Agua Training Program in water-wise landscaping

PROPOSITION 13-FUNDED GRANTS IN 2003 (THE SAFE DRINKING, CLEAN WATER, WATERSHED PROTECTION, AND FLOOD PROTECTION ACT)

Prop. 13 grant monies are to be used for:

- Residential Washer Rebate Program - $2.5 million

  Extends the rebate program for high-efficiency clothes washers for another year at its current rebate level of $100 per unit
- Evapotranspiration (ET) Irrigation Controller Installation Rebate - $1,780,000
- Establishes a new rebate program that will install 5,500 units and perform studies over a three-year period

CALIFORNIA PUBLIC UTILITIES COMMISSION GRANTS

Metropolitan, in partnership with the California Urban Water Conservation Council, used CPUC grant funding to install 12,600 pre-rinse spray valves in restaurants within Metropolitan service area. This resulted in savings of 13,900 acre-feet over the five-year life of the devices. Another round of funding to continue this effort is currently under review by the CPUC.

U.S. BUREAU OF RECLAMATION (USBR) GRANTS

The following projects received funding this year:

- California Friendly Landscape pilot for new homes using incentives to establish up to 10 acres of water-efficient landscaping - $182,000
- Evaluation of data loggers, devices that attach to a water meter to provide precise, unobtrusive water use information - $50,000
- Funding for four additional Innovative Conservation Program applicants, all landscape efficiency-related - $218,000

LINING CANALS TO SAVE WATER

HIGH-EFFICIENCY CLOTHES WASHER ELIGIBLE FOR $100 REBATE

Achievements

Hardware Retrofits and Other Services

New and expanded rebate programs supported new gains in conservation. The following milestones were reached:

- Retrofitted nearly 200,000 ultra-low-flush toilets (ULFT), bringing the total to over 2.1 million retrofits to date, saving roughly 24 billion gallons per year
- Provided rebates for 30,000 high-efficiency clothes washers, bringing the total to over 67,000. These washers will save approximately 90,000 gallons over their expected useful life compared to their less efficient alternatives
- Conducted 1,750 on-site surveys of outdoor/interior water use, identifying opportunities for water savings

Regional Commercial, Industrial and Institutional Rebate Program (CII)

Metropolitan conducted a research study to evaluate the current Regional CII Rebate Program and to make recommendations for a long-term program proposed to begin July 2004. Information gained from focus groups comprised of member agency and rebate participants will be used to design the new program.

Innovative Conservation Program (ICP)

The ICP encourages the investigation and development of creative ways to conserve water. The first ICP grant award cycle was completed in 2002. Two new devices developed under this program included a recirculating X-ray film developer used in hospitals and a pressurized water broom. Both have since been incorporated into the Regional CII Rebate Program. The second ICP cycle received proposals in February 2003 totaling $8.4 million in funding requests from more than 60 applicants including public agencies, community-based organizations, private companies, entrepreneurs, research institutes, and equipment manufacturers.

Metropolitan seeks value in innovative ideas and technology like the "water broom" (left)

Ten projects for grant funding totaling $250,000 were selected. Proposals include a water-wise landscape incentive program, an artificial turf demonstration test project, and savings studies on commercial food steamers, and residential point-of-use hot water devices. These projects will start in early 2004.

New Programs

Some of the more recent conservation activities that Metropolitan supports include:

- The Innovative Supply Program (ISP), started in 2003, which solicits ideas for developing new water supply sources in the region. The program budget is $250,000. There were 18 proposals received from this first solicitation, and their evaluation will conclude in Spring 2004.
- Consolidating residential program contracts into single multi-year contracts that can handle future program changes easily
- Expanding the evapotranspiration (ET) irrigation controller rebate to target-commercial units that have numerous stations

Research and Support

Metropolitan supports a wide variety of research efforts to conserve water including:

- Evaluation of landscape maintenance certification pilot project by Municipal Water District of Orange County
- A bench test of three competing ET irrigation controllers
- Maintenance of nine California Irrigation Management Information Systems (CIMIS) stations to provide real-time irrigation efficiency information
- A new data tracking tool for evaluating and managing centralized irrigation controller system retrofit projects
- A review of the Protector del Agua (PDA) program to redefine the program design and delivery methodology

Protector del Agua Training

The PDA training series on outdoor landscape irrigation continues to be extremely popular. Professional landscape participants numbered 2,300 in 2003, and residential participants numbered 5,000. The total number of PDA participants from the program's inception through fiscal 2003 was 24,000. The PDA residential course covers the basics of landscape design, plant identification, irrigation systems and watering and fertilizing. The course offers hands-on training and demonstration displays to provide an interactive learning experience and understanding of irrigation hardware and the plant-water-soil relationship.

The PDA professional course is directed toward landscape maintenance personnel and is taught in both English and Spanish. It consists of six, four-hour classes in landscape management and covers basic irrigation principles, irrigation scheduling, system trouble-shooting and controller programming.

PROTECTOR DEL AGUA TRAINING

Achievements

Education

In 2003, Metropolitan and its member agencies made education materials, activities and events available to more than 210,000 K-12 students and 1,150 teachers throughout the six-county service area. Key curriculum programs included All About Water (grades K-3), Admiral Splash (grade 4), Water Ways (grade 5), Water Quality (grades 7-12), Water Politics (grades 9-12), and Water Works (grades 6-12). K-12 students and schools participated in assembly, classroom and field trip programs conducted by Metropolitan staff. Each experience featured interactive activities and hands-on opportunities with the science of water.

Also in 2003, Metropolitan conducted a new, very successful program called, "Solar Splash." The program promoted clean boating practices at public drinking water reservoirs that also serve recreational purposes. Eight high school teams sponsored by six member agencies constructed solar-powered boats and competed in endurance and sprint races at Metropolitan's Lake Skinner in Riverside County. This first-of-its-kind event in California will see triple the number of teams in 2004. The media exposure for this event included local and regional newspapers, local cable channels, major stations and affiliates-both regional and national. The event was even seen on international cable.

"SOLAR SPLASH" PROMOTES CLEAN BOATING PRACTICES

Metropolitan also continued its Sixth Annual Water Politics Student Water Forum where 150 high school students from 15 different high schools debate, discuss and decide issues regarding the future of Southern California's water supply in the next 20-30 years. A student essay contest selected four students to attend the "Classroom to the State Legislature" program to speak with legislative staff, water and environmental organizations in Sacramento. A new case study comparing Bay-Delta water issues with the Middle East has been added to the Water Politics unit. The geopolitical approach globalizes the issue of water for high school students.

The ninth year of Diamond Valley Lake's Education Program welcomed more than 3,200 students. The program features interactive activities that focus on the biology, chemistry, geography/geology of the Southland's largest reservoir as well as environmental and conservation issues. For the first time, it expanded to include not only sixth-grade students, but also grades 4-7.

The Center for Water Education (CWE)

The CWE, sponsored by the non-profit Foundation for the Water Education Center, will chronicle the development of water in Southern California and offer hands-on learning experiences and exhibits for visitors of all ages. It will spotlight the importance of water as a shared public resource and the need to manage it fairly. The CWE is expected to open in the near future at the new museum complex situated at the east entrance to Diamond Valley Lake. Metropolitan has provided $16 million in grants to assist in development of the CWE.

Outdoor Conservation Outreach Effort

In November 2002, the Metropolitan Water District board authorized $2.3 million for a campaign to educate Southern Californians on the need to conserve water without declaring a drought emergency. The timing of the campaign was unique because it was a call to action in advance of critical need. It combined advertising, education, publicity and community outreach elements to foster a new landscape ethic coined by Metropolitan as "heritage gardening." Metropolitan partnered with several different agencies to develop parallel programs. Each focused on creative and efficient ways to keep landscape colorful and green and at the same time reclaim a piece of our shared history that once defined this region as authentically "Southern California." A synopsis of the different program elements follows:

ADVERTISING CAMPAIGN

The region-wide campaign was based on research that homeowners typically give their landscapes twice the amount of water needed to be healthy. The challenge was to raise awareness of residential over-watering and promote new tools—the watering index and calculator available online —that would be helpful for homeowners to determine how much water to use.

Components of the four-month advertising campaign included radio spots in both English and Spanish across Metropolitan's six-county service area; traffic report sponsorships in English, Spanish, Mandarin Chinese and Japanese running on nearly 100 stations; outdoor billboards in high-density single-family home areas; 30 buses carrying messages in North San Diego county; ads in three issues of Sunset Magazine; a full page ad in the playbill (program) for the "The Producers;" and web page advertisements and inclusion of the watering index on the weather page of latimes.com. In addition to these paid spots, the campaign received free publicity through more than 200 public service announcements on radio stations and through sponsorship and giveaway opportunities at 50 high-profile community events including the Anaheim Home & Garden Show and Los Angeles County Fair. A modified campaign will continue in 2004.

BEWATERWISE.COM

This new web site, promoted by the advertising campaign, is packed with tools to help homeowners program and customize their outdoor sprinklers to run more efficiently. Bewaterwise.com provides information and examples of heritage gardening and online resources that include a landscape watering calculator, watering index, conservation tips and a database with information on 1,500 native and California Friendly plants. More than 75,000 people visited the site during its first three months of operation; an average of 900 visitors access the site daily.

NATIVE PLANT CARE AND MAINTENANCE PRIMER

This first-of-its-kind reference guide for native plants is under development by experts at Rancho Santa Ana Botanic Garden, California Native Plant Society and the Theodore Payne Society. It will be distributed free of charge to public agencies and others interested in maintaining native landscapes.

CONSUMER ATTITUDE AND AWARENESS SURVEY

The first phase of a survey, designed to track baseline water usage behavior and related attitudes, was conducted July 11 - 17, 2003 and included 400 homeowners in Los Angeles, Orange County, San Diego and the Inland Empire. The key finding was that most homeowners are aware of the importance of water conservation and believe they are not overwatering. However, data provided by homeowners indicates most are watering landscapes at least twice as much as recommended by Metropolitan's watering calculator. The second phase of interviews will be conducted mid- to late-November 2003, and will survey 500 homeowners on the same topics to measure campaign effectiveness through awareness and behavior change.

CITY MAKEOVER PROGRAM

This competitive grant program was established in 2002 to provide funding to cities and public agencies for new native and California Friendly landscapes in prominent public locations. More than 40 agencies and cities applied in the first year, their applications judged by a panel of experts including representatives from water agencies, public works directors, historians and landscape architects who rated each project on its environmental, educational and social value for the community. Eleven winners were announced in May 2003 at a press conference attended by Rene Russo, actress and native plant enthusiast. Five winners received $75,000 grants each; six received $20,000 each.

WHIMSICAL ADVERTISING CAMPAIGN AIMED AT REDUCING OUTDOOR WATER USE

Achievements

Heritage Landscape Forums I, II and III

More than 150 individuals gathered at Metropolitan in November 2002, March and August 2003 for three forums created to bring together the native plant community with city planners, landscape architects, nursery retailers and wholesalers, builders and developers, water agencies and local officials to discuss the challenges of promoting native plants. Participants divided into task groups to try to overcome challenges to the widespread adoption of native plants, such as creating markets, educating city planners and working with builders and developers. Groups continue to meet and work together.

Retailer Outreach

Twenty retailers have committed to carrying native and California Friendly plants and displaying the campaigns' banner and plant tags. Outreach effort to 5,000 Southern California retailers will continue to enlist more partners.

Recycled Water Numbers

1982 - Start of Metropolitan's Local Projects Program

72,000 - Number of acre-feet produced with recycled water distributed in fiscal year 2003 by Metropolitan-funded member agency projects

$14 million - Metropolitan's fiscal year 2003 commitment to recycled water projects

$109 million - Metropolitan's 21-year investment in recycled water projects

Water Recycling

A Valuable Source of Supply

By the 1950s, local water agencies realized the value of recycled water as a source of supply. This vision most recently led to the development of approximately 204,000 acre-feet of recycled water in fiscal 2003.

For more than 21 years, Metropolitan has invested in regional water recycling projects, committing about $109 million to date. Metropolitan's newest program, the Local Resources Program, was established in 1998 and includes a competitive element. Member agencies are asked to submit project proposals for evaluation which fosters competition and encourages the development of cost-effective recycled water and groundwater recovery projects.

Metropolitan currently has funding agreements for 53 member agency recycling projects; 37 were in operation in fiscal year 2003. Together, these projects produced about 72,000 acre-feet of recycled water, with Metropolitan contributing about $14 million toward production in fiscal 2003. Local agencies produced an additional 132,000 acre-feet of recycled water without financial assistance from Metropolitan.

Many more opportunities for recycled water projects are being evaluated. One long-term study, spearheaded by the U.S. Bureau of Reclamation nearly a decade ago, points to the potential for 34 projects with an estimated yield of more than 450,000 acre-feet per year.

New Recycling Projects

Inland Empire Utilities Agency Regional Recycled Water Distribution System

The 13,500 acre-feet per year project started operating in 1998. In 2003, Metropolitan and Inland Empire Utilities Agency entered into a new agreement to expand the project to a greater geographical area and continue Metropolitan's financial support for the next 14 years.

Olivenhain Recycled Project

Started in August 2003, the project delivers up to 1,788 acre-feet of recycled water for landscape irrigation. A portion of the project delivers tertiary treated recycled water to users previously served untreated water from the San Diego County Water Authority. Metropolitan contributes $150 per acre-foot of recycled water delivered to eligible end-users for a contract term of 25 years.

CONEJO CREEK RECYCLED WATER PROJECT

Calleguas Municipal Water District's Conejo Creek Recycled Water Project started operating in July 2003. It diverts recycled water discharged by the city of Thousand Oaks' Hill Canyon Waste Water Treatment Plant and uses the water for urban and agricultural irrigation in the cities of Oxnard, Camarillo, and Port Hueneme. Metropolitan contributes $154 per acre-foot for a contract term of 10 years.

2003 LOCAL RESOURCES PROGRAM REQUEST FOR PROPOSALS

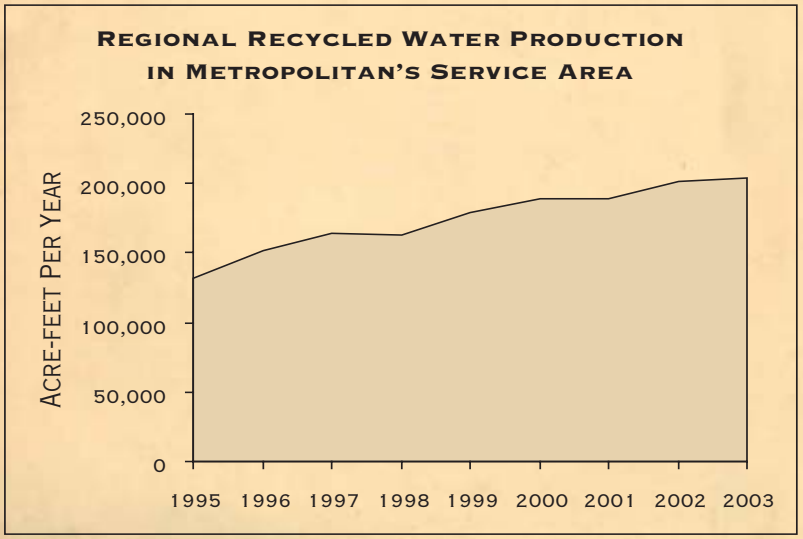
In April 2003, Metropolitan issued a request for proposals to competitively develop 65,000 acre-feet per year of recycled water and recovered groundwater. Financial incentives of up to $250 per acre-foot for terms up to 25 years will be provided for new recycled water and groundwater recovery projects that improve regional water supply reliability by reducing Metropolitan's capital investments and demands for imported supplies. Member agencies submitted 27 proposals totaling 125,000 acre-feet per year.

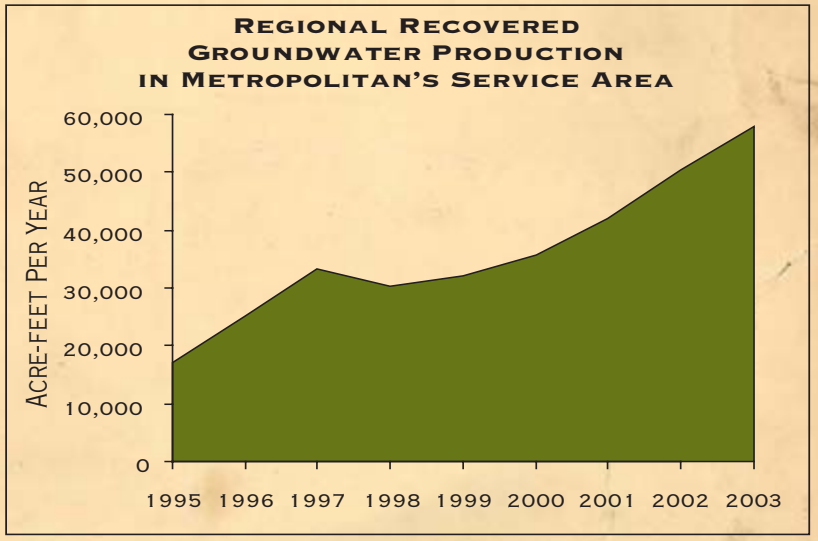
GROUNDWATER RECOVERY

GROUNDWATER RESERVOIRS

When groundwater in storage becomes contaminated, water agencies have to rely more heavily on imported supplies or try to recover the water through treatment which is quite costly and poses environmental challenges. Over the past 12 years, Metropolitan has invested about $33 million to help fund member agency groundwater recovery projects. Funding agreements exist for 22 projects, of which 16 are in operation and recovered about 38,000 acre-feet of water in fiscal year 2003. In addition, local water agencies produced another 18,000 acre-feet of recovered groundwater without financial assistance from Metropolitan, bringing the regional total to 56,000 acre-feet for the year.

Metropolitan's fiscal year contribution was $7 million.





Achievements

Groundwater Recovery Project Start-ups

Beverly Hills Desalter Project

The project produces up to 2,600 acre-feet per year of water from brackish water in the Hollywood Basin underlying the City of Beverly Hills and the community of West Hollywood. It is made possible under a 20-year agreement between Metropolitan and the City of Beverly Hills. This project provides the City of Beverly Hills with a second water supply source in addition to imported water purchased from Metropolitan.

Menifee Basin Desalter Project

Located in Sun City, this project pumps and treats brackish water from the Menifee Basin to produce 3,360 acre-feet per year. It is made possible under a 20-year agreement between Metropolitan and the Eastern Municipal Water District, and began operation in fiscal 2002-03.

Groundwater Recovery Numbers

12 - Number of years Metropolitan has been funding groundwater recovery projects

$7 million - Metropolitan's fiscal year 2003 contribution

$33 million - Metropolitan's total investment to date

22/16 - **22** is the number of agreements between Metropolitan and member agencies to fund recovery projects; **16** is the number of projects in operation

56,000 -Number of acre-feet recovered through groundwater treatment both by Metropolitan-funded projects and member agency projects

Groundwater Conjunctive Use

Conjunctive Use Plays a Significant Role in California Water Management

Conjunctive use means storing imported water in groundwater basins for later use during shortages or drought. Groundwater basins in Metropolitan's service area yield an annual average of 1.3 million acre-feet. The water withdrawn from these underground reservoirs is replenished both naturally and artificially.

Since the 1950s, Metropolitan has pursued conjunctive use arrangements with local agencies and supported a wide variety of programs. Conjunctive use programs are an integral part of Metropolitan's central planning document, the Integrated Resources Plan.

Conjunctive use program development received a financial boost with funds from Prop. 13 which awarded $45 million to Metropolitan to help finance conjunctive use programs in Metropolitan's service area.

New Storage Agreements

To date, Metropolitan has utilized Proposition 13 funds to develop five contractual groundwater storage programs, with two additional programs in the planning stages. Metropolitan has entered into agreements with:

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

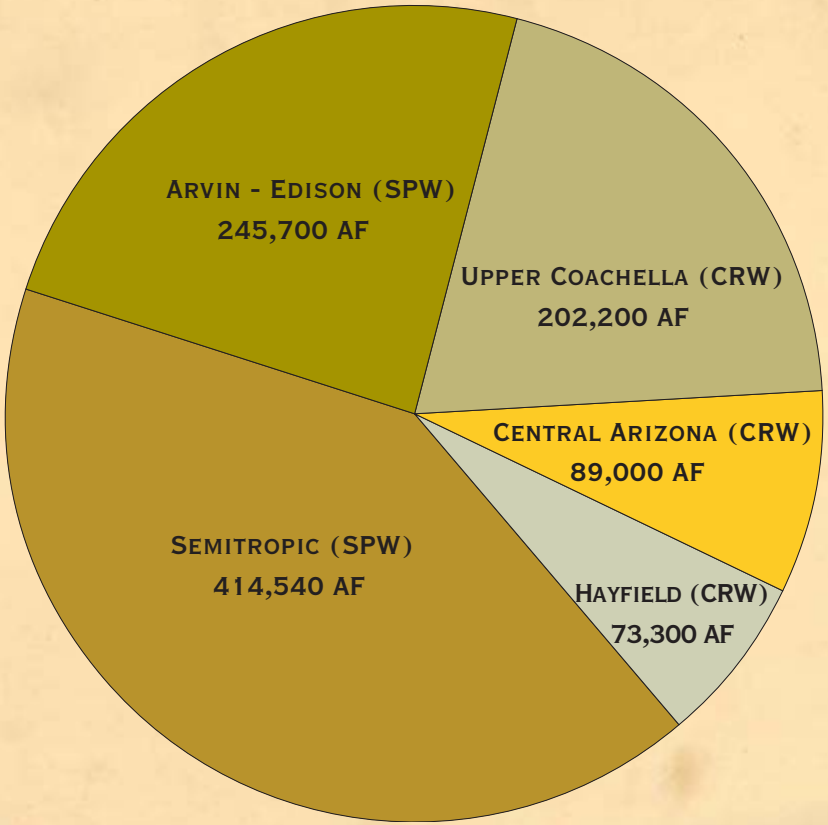
These five agreements will provide a total of 185,000 acre-feet of storage. In addition, Metropolitan is finalizing agreements with the San Diego County Water Authority to develop two more conjunctive use programs within Metropolitan's service area. Collectively, these programs will develop approximately 192,000 acre-feet of storage for Southern California.

Metropolitan is continuing to pursue a program in the Raymond Basin for up to 75,000 acre-feet of storage. 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 program has been phased; phases 1 and 2 are scheduled to come online by 2005. Completion of facilities necessary for management of a 210,000 acre-foot storage program in this basin should be operational by 2010.

Metropolitan Water Stored in Groundwater Basins Outside its Service Area

(as of December 2003)

Total Colorado River Water (CRW) Groundwater Storage:	364,500 AF
Total State Project Water (SPW) Groundwater Storage:	660,240 AF
Total MWD Groundwater Storage Outside its Service Area:	1,024,740 AF

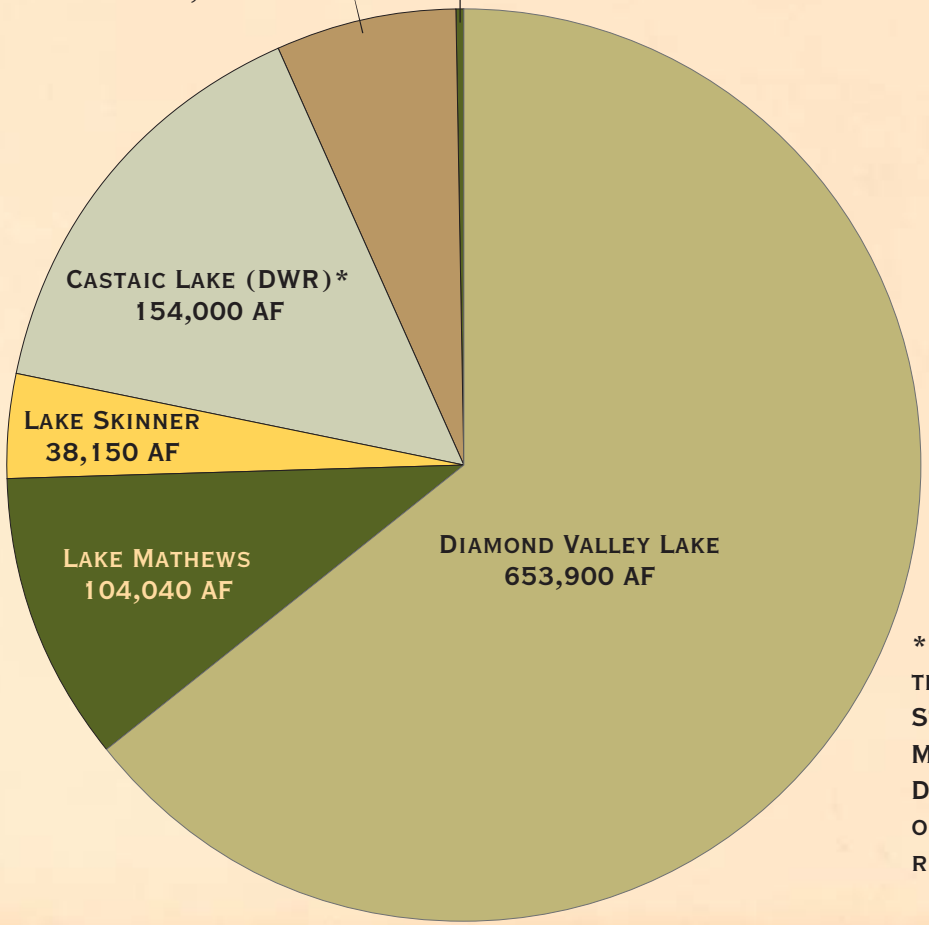


Achievements

Metropolitan Water Stored in Metropolitan & DWR Reservoirs in Southern California

Total Storage : 1,018,252 AF

(as of December 2003)



Live Oak Reservoir
1,911 AF

Garvey Reservoir
754 AF

Palos Verdes Reservoir
327 AF

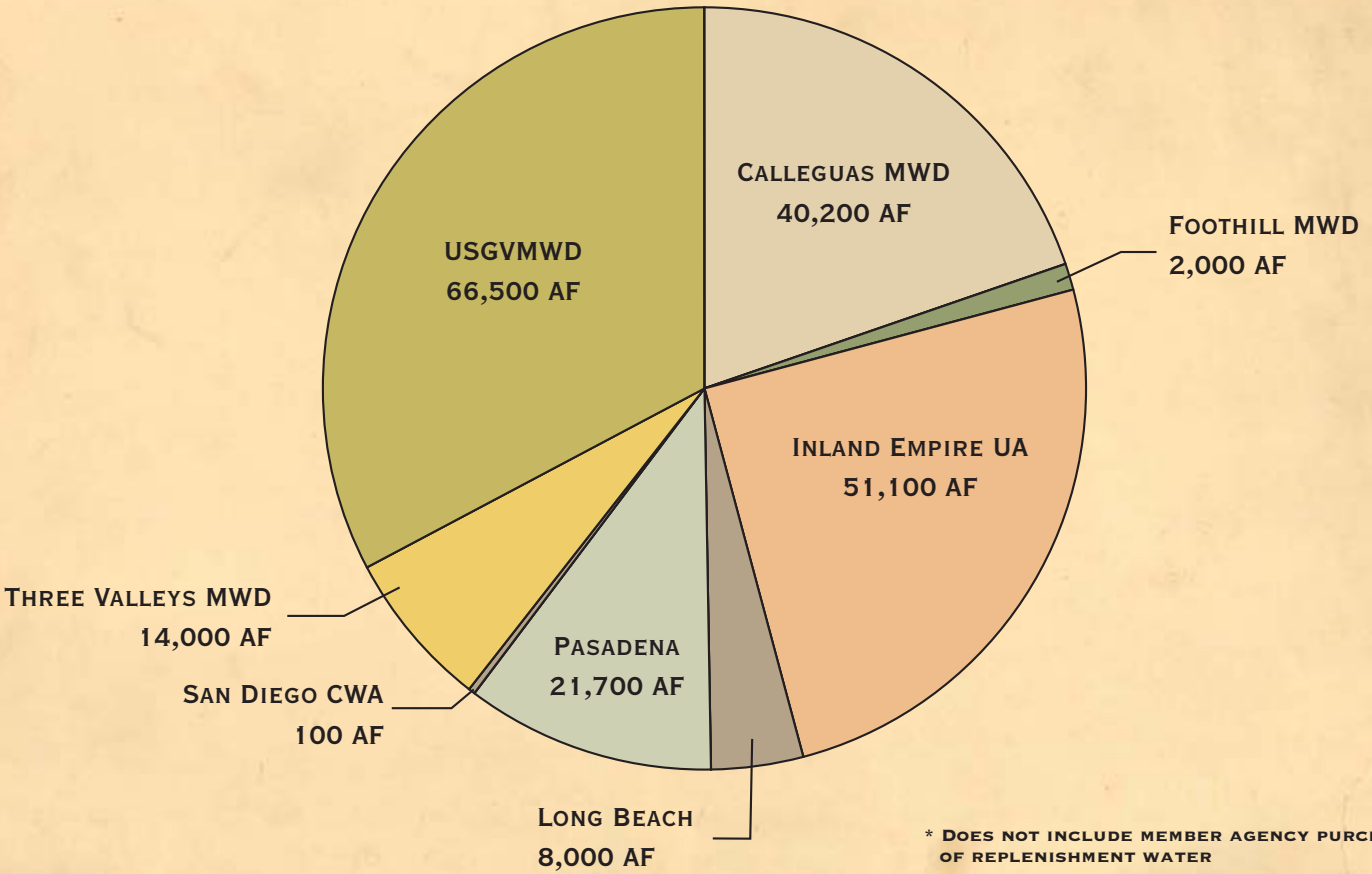
Orange County Reservoir
170 AF

* These figures represent the amount of Flexible Storage available to Metropolitan from these DWR reservoirs, and are only a portion of each reservoir's total capacity

METROPOLITAN WATER STORED IN SOUTHERN CALIFORNIA GROUNDWATER BASINS AND LOCAL AGENCY RESERVOIRS*

TOTAL STORAGE: 203,600 AF

(AS OF DECEMBER 2003)



* DOES NOT INCLUDE MEMBER AGENCY PURCHASES OF REPLENISHMENT WATER

SEAWATER DESALINATION

SEAWATER DESALINATION PROGRAM

In August 2001, Metropolitan initiated the Seawater Desalination Program to support the development of cost-effective seawater desalination projects and increase water supply reliability. In November 2001, Metropolitan issued a competitive RFP soliciting member agency project proposals for up to 50,000 acre-feet per year of desalinated water. Metropolitan offers financial incentives up to $250 per acre-foot of production. Five proposals were received that collectively could produce about 126,000 acre-feet per year. Proposals from the Los Angeles Department of Water and Power, Long Beach Water Department, Municipal Water District of Orange County, San Diego County Water Authority and West Basin Municipal Water District were evaluated by a review committee comprised of Metropolitan staff and outside water resource specialists. All of the parties are working to finalize uniform agreement terms and principles.

Desalination Numbers

2001 - Year Metropolitan issued a Request for Proposal for seawater desalination projects

Five - Number of proposals received

126,000 - Number of acre-feet that could be produced by combination of 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 - Number of acre-feet of desalted seawater considered for Metropolitan's new planning target

Metropolitan's board is considering the inclusion of an additional 100,000 acre-feet per year of desalted seawater as part of the current IRP Update. This could increase the desalination target from 50,000 to 150,000 acre-feet per year to meet service area demands. Metropolitan and its member agencies are evaluating the costs and benefits of an expanded seawater desalination target.

SEAWATER DESALINATION RESEARCH

Metropolitan is working with its member agencies to develop a coordinated, cooperative agenda for seawater desalination research. To help launch member agency research efforts, Metropolitan's board approved a contribution of $250,000 that will be divided equally among the five proposals. Member agencies will use the money to conduct research, including site assessment and feasibility studies.

DESALINATION EQUIPMENT

Diamond Valley Lake

One cornerstone of Metropolitan's supply plan is the district's Diamond Valley Lake in Riverside County. Southern California's largest water storage reservoir, with a capacity of 800,000 acre-feet or 260 billion gallons of water, provides critical water storage south of the Bay-Delta and almost doubles Southern California's surface storage. Diamond Valley Lake holds six months of emergency water supplies for Southern California in case of a major system interruption due to earthquakes or other unforeseen events.

Diamond Valley Lake is counted among the various sources of surface and groundwater storage that can be delivered to Southern California customers to meet demands. Including Diamond Valley Lake, Metropolitan has a total of more than two million acre-feet of water stored in:

- Castaic and Perris Lakes
- Multi-year banking and transfer programs in the California Central Valley
- Metropolitan reserves in the San Luis Reservoir
- Groundwater conjunctive use programs
- North Las Posas Storage Program

In addition, Metropolitan continues to pursue other storage programs, including its own Hayfield groundwater storage program near the Colorado River Aqueduct, and other storage programs funded by Prop. 13. The availability of Diamond Valley Lake also has allowed Metropolitan needed flexibility for operations as well as infrastructure maintenance and repair, particularly with a major overhaul of the Colorado River Aqueduct during fiscal 2002-03 as well as improvements to Lake Mathews (see next page). Other benefits include:

- Ability to manage system capacity constraints introduced by limited Colorado River Aqueduct supplies
- Water quality benefits that allow Metropolitan to blend water from the State Water Project and Colorado River supplies
- Ability to take water from the Bay-Delta when supplies are available and environmental effects to endangered species are minimal
- Ability to release surplus water supplies through Metropolitan's distribution system to member agencies to improve the region's groundwater recharge program

FINDING TIME FOR RECREATION DURING CONSTRUCTION

FISHING ON DIAMOND VALLEY LAKE

System Reliability

New Storage Partnerships

Metropolitan has developed and implemented three additional groundwater storage partnerships outside its service area and along the California Aqueduct in 2003. These programs, developed with the Kern-Delta Water District, the Mojave Water Agency, and the North Kern Water Storage District, improve Metropolitan's ability to store wet-year supplies for use in a dry year.

Improving Infrastructure Reliability

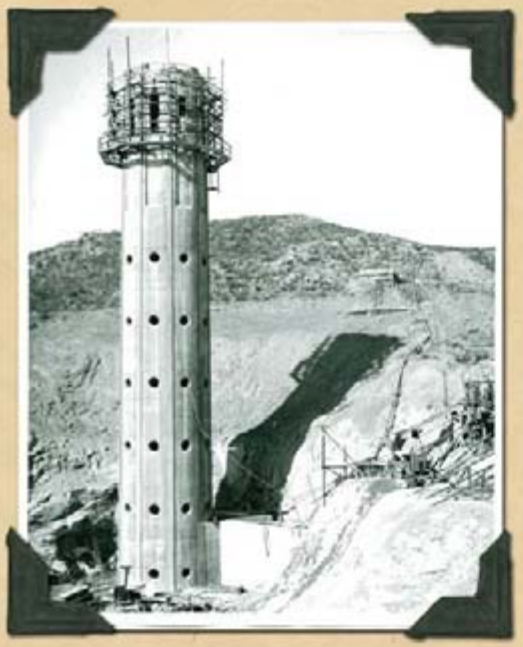
As the region's population has increased, so have the challenges of ensuring supply reliability. In response to those challenges, Metropolitan has launched several initiatives:

Lake Mathews

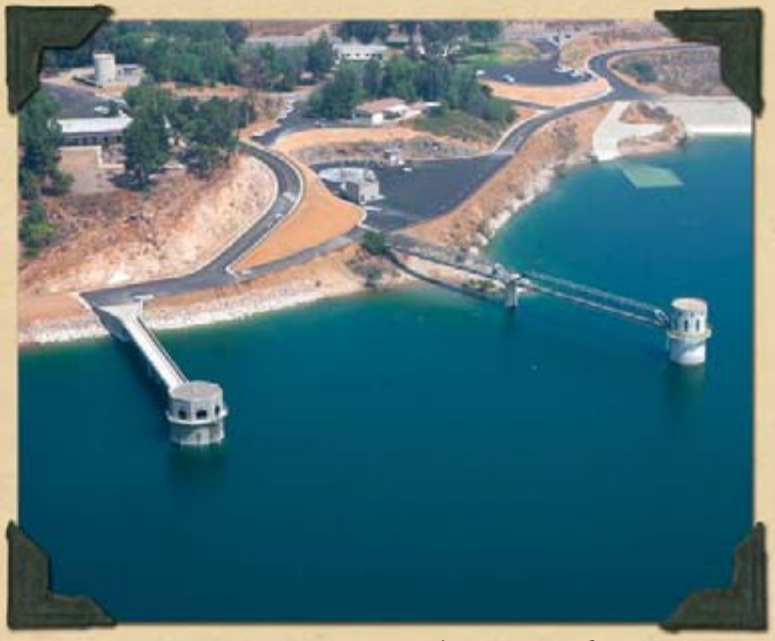
Metropolitan's oldest reservoir now has a new outlet tower to draw water out of the lake and into Metropolitan's distribution system. This $92 million renovation protects the system from seismic events and adds flexibility to operations. Before the construction of Diamond Valley Lake, Lake Mathews was Metropolitan's largest reservoir.

San Diego Pipeline No. 6

In October 2002, Metropolitan's board authorized $6.5 million for design work and the start of land acquisition for a portion of a major supply pipeline that will deliver water to Temecula in southwestern Riverside County, and eventually extend to the San Diego County Water Authority service area. The initial phase of San Diego Pipeline No. 6 is a $100 million project that will deliver water from the Colorado River and the State Water Project to the Eastern Municipal Water District and the Western Municipal Water District of Riverside County. The first section of the pipeline is expected to be complete in 2006. The total project cost is estimated at $426 million.



ORIGINAL LAKE MATHEWS OUTLET TOWER



NEW OUTLET TOWER (ON THE LEFT)

Colorado River Aqueduct Programs

With a mandated reduction in California's draw from the Colorado River and the uncertainty of surplus water availability, Metropolitan has bolstered its Colorado River supply with a number of storage, conservation and transfer agreements.

Quantification Settlement Agreement (QSA)

On October 10, 2003, representatives from Metropolitan, the Imperial Irrigation District (IID), and Coachella Valley Water District (CVWD) executed the QSA and several other agreements. Parties involved include the San Diego County Water Authority (SDCWA), the California Department of Water Resources (DWR), the California Department of Fish and Game, the U.S. Department of the Interior and the San Luis Rey Indian Water Rights Settlement Parties. The QSA establishes individual water budgets for IID and CVWD, making new water transfers viable on the Colorado River. The QSA includes a water transfer from IID to SDCWA, which began in 2003 and will eventually ramp up to 200,000 acre-feet per year. While the water will belong to SDCWA, the transfer helps reduce Metropolitan's demands and increases water supply reliability for the region.

Metropolitan has an agreement with DWR to receive water made available by IID through 2017 in amounts increasing up to 250,000 acre-feet per year with a 1.6 million acre-foot cap. The actual amount will depend on whether the Secretary for the California Resources Agency determines that the transfer of this water is consistent with the preferred alternative for Salton Sea restoration.

Under the QSA, canal lining conservation programs that Metropolitan had with IID and CVWD will now be managed by SDCWA. Water conserved through these programs will be conveyed to San Diego through Metropolitan's system.

Interim Surplus Guidelines (ISG): Colorado River Use

On January 16, 2001, former Secretary of the Interior Bruce Babbitt signed a Record of Decision (ROD) to implement the ISG. Adoption of the ISG recognizes California's Colorado River Water Use Plan and its commitment to reduce its draw of Colorado River water.

The U.S. Bureau of Reclamation uses the ISG to determine the availability of special surplus water to Metropolitan through 2016. Under a seven-state agreement, California was given 15 years to reduce its draw on the river from about 5.2 million acre-feet to its basic apportionment of 4.4 million acre-feet a year in the absence of surplus water. During the 15-year ramp-down period, California could continue to receive surplus water from the river; the annual amount depends on the storage level of Lake Mead.

The ISG was temporarily suspended and then reinstated in October 2003 when the QSA was signed. Because of a four-year drought in the Colorado River watershed, the amount of surplus water available to Metropolitan has been substantially reduced from earlier projections. In order to avoid potential impacts to system storage, Metropolitan did not divert special surplus water in 2003 that was available through the ISG. Surplus water could be diverted in the future, and decisions to do so will be dependent on associated risks of shortages.

EARLY PIPELINE CONSTRUCTION

QUANTIFICATION SETTLEMENT AGREEMENT SIGNING CEREMONY

CRA Storage, Transfer & Exchange Programs

Arizona Water Bank

Interstate off-stream water banking of Colorado River water provides an added water management opportunity for meeting the needs of Arizona, California and Nevada. In 1992, Metropolitan reached an agreement with the Central Arizona Water Conservation District to allow unused Colorado River water to be stored in Central Arizona aquifers. The Southern Nevada Water Authority also participates in the program. This water can be recovered at Metropolitan's discretion.

Hayfield Groundwater Storage Program

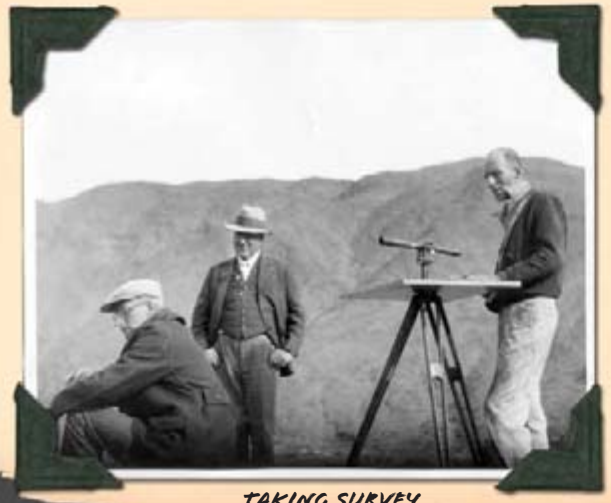
The Hayfield Groundwater Storage Program was approved by Metropolitan's board in June 2000. The program will allow CRA water to be stored in the Hayfield Groundwater Basin in east Riverside County (about 50 miles east of Palm Springs) for future withdrawal and delivery to the CRA. As of December 2003, there are 73,300 acre-feet in storage.

Chuckwalla Groundwater Storage Program

Under the proposed Chuckwalla Groundwater Storage Program, Colorado River water would be stored in the Upper Chuckwalla Groundwater Basin for future delivery to the CRA. The basin is located in Riverside County about 70 miles east of Palm Springs. A feasibility study was approved by Metropolitan's board in June 2000. A $250,000 grant from the California Department of Water Resources was awarded to Metropolitan for a portion of the feasibility study. The anticipated benefits of this program echo those of the Hayfield Groundwater Storage Program, but development of the project is subject to the outcome of the feasibility study which takes into account the basin water quality and the availability of surplus Colorado River water. Metropolitan staff is currently analyzing water quality and water supply data and will make a determination based on the feasibility study in 2004.

Lower Coachella Valley Groundwater Program

Metropolitan, in conjunction with Coachella Valley Water District and Desert Water Agency, is currently looking at the feasibility of a conjunctive use storage program in the Lower Coachella groundwater basin. The basin, which is currently in an over-drafted condition, has the potential to provide a total storage capacity for Metropolitan of 500,000 acre-feet. The Lower Coachella Program would have the advantage of using the All American and Coachella canals to deliver water for storage, preserving capacity in the CRA for service area demands.



TAKING SURVEY...

OF TECHNOLOGICAL ADVANCES

State Water Project

Metropolitan's Participation in CALFED

More than two-thirds of California's drinking water passes through the San Francisco Bay-Sacramento/San Joaquin Bay-Delta (Bay-Delta). In June 1995, state and federal agencies with regulatory responsibility in the Bay-Delta system launched an historic partnership under the CALFED Bay-Delta Program to address issues of reliability and quality of supplies. Metropolitan works cooperatively with CALFED and other Bay-Delta stakeholders to develop balanced and cost-effective solutions.

In 2002, the California Legislature passed the California Bay-Delta Authority Act to provide a long-term governance structure to coordinate the 20 state and federal agencies involved in the program, and to ensure direct involvement of public representatives. California voters have passed approximately $5 billion in state general obligation bonds to support CALFED-related projects. This includes $1 billion from Proposition 204 in 1996; $2 billion from Proposition 13 in 2000; and another $2 billion from Proposition 50 in 2002. Federal authorization legislation for CALFED that would substantially benefit Southern California is still pending. Benefits of the authorization would come through increased statewide, local, and federal investments in water supply and water quality infrastructure, as well as additional environmental safeguards to protect the Bay-Delta watershed.

The Inland Feeder

Metropolitan's Inland Feeder consists of nearly 44 miles of tunnels and pipelines that will link the East Branch of the SWP to Metropolitan's Diamond Valley Lake and Lake Mathews. It will allow Metropolitan to schedule its water deliveries to match weather patterns and the needs of the Bay-Delta estuary environment. Through an agreement between Metropolitan and the San Bernardino Valley Municipal Water District (SBVMWD), an intertie to the SBVMWD facilities was constructed that allowed a portion of the Inland Feeder to go into operation. Use of the pipeline allows Metropolitan to blend additional water from the SWP with Colorado River water to increase overall water quality benefits.

Water Imports to Southern California

Other 2003 milestones include:

- Development of a proposed set of SWP and Central Valley Project Operating Rules that will be evaluated as part of the larger set of actions identified in the CALFED Record Of Decision to improve water supply reliability and water quality while protecting the health of the Bay-Delta ecosystem
- Continued development of the South Delta Improvement Program that will increase the available pumping capacity for Metropolitan at the SWP Banks Pumping Plant and advance the ability to move Sacramento Valley Phase 8 Settlement water and additional transfer water during environmentally benign periods
- A third 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
- Reaching nearly $400 million to date in funding for over 400 environmental projects within the Bay-Delta watershed
- Final designs completed by the California Department of Water Resources (DWR) for the Tehachapi 2nd Afterbay, which will minimize the use of costly on-peak power. The 900 acre-foot reservoir, located east of Gorman, will allow SWP pumping plants in the San Joaquin Valley to move water into storage during off-peak periods. During the day, the reservoir will provide water to the East Branch of the California Aqueduct. DWR estimates that this project will save over $100 million in energy costs over its lifetime.

State Water Project Water Storage, Transfer & Exchange Programs

Sacramento Valley Water Transfers

In January 2003, Metropolitan's board authorized one-year transfer option agreements with eleven Sacramento Valley water districts to ensure water supply reliability. Metropolitan secured 146,230 acre-feet of options from these districts, of which 126,230 acre-feet were exercised. Due to a wet April 2003, much of this water has been moved into storage for delivery in 2004. Metropolitan also entered into an exchange agreement with the U.S. Bureau of Reclamation to ensure that approximately 50,000 acre-feet of these purchased supplies will be available in a future dry year.

Dry-Year Transfer Program

Metropolitan stored 325,000 acre-feet in existing storage programs in the San Joaquin Valley to ensure water supply reliability.

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.

The storage balance as of December 2003 is 414,540 acre-feet.

Arvin-Edison Water Storage District

Metropolitan and the Arvin-Edison Water Storage District have developed a program that 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, dry-year withdrawals could average between 40,000 - 75,000 acre-feet per year through groundwater extraction and/or entitlement exchanges. This storage capability increases Metropolitan's water supply reliability.

The storage balance as of December 2003 is 245,700 acre-feet.

Colorado River Aqueduct & State Water project Programs

Kern-Delta Water District

Metropolitan's board approved the Water Management Program Agreement with the Kern Delta Water District in November 2002. Under the 25-year program, Metropolitan will store up to 250,000 acre-feet of its available SWP water 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 2003 is 18,000 acre-feet.

San Bernardino Valley Municipal Water District

Under the SBVMWD Program, Metropolitan purchases water provided to SBVMWD from its annual SWP allocation. Depending on SWP conditions, approximately 20,000 to 80,000 acre-feet per year would be available for purchase. In addition, Metropolitan could store up to 50,000 acre-feet for later delivery from the San Bernardino groundwater basin.

North Kern Water Storage District

In 2003, Metropolitan entered into a pilot groundwater banking demonstration program agreement with North Kern Water Storage District (North Kern). Metropolitan will store a portion of its available SWP water supplies in 2003 and 2004 in a storage account of 60,000 acre-feet per year within the groundwater basin underlying North Kern. At Metropolitan's request, North Kern will return up to 30,000 acre-feet per year of the previously stored SWP water to Metropolitan from the groundwater basin in subsequent years.

Mojave Water Agency

In 2003, Metropolitan entered into a water exchange demonstration program agreement with the Mojave Water Agency (Mojave). Metropolitan will store a portion of its available SWP water supplies from 2003 and 2004 in a storage account up to a maximum amount of 75,000 acre-feet within the ground basin underlying 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.

THE STATE WATER PROJECT'S HARVEY O. BANKS PUMPING PLANT

METROPOLITAN'S WATER QUALITY INITIATIVE

PROTECTING WATER AT THE SOURCE, SO YOU CAN TRUST IT AT THE TAP

Metropolitan's water management priorities are simply stated: quality, reliability, and fairness. All water provided by Metropolitan meets or exceeds current drinking water standards. In support of this mandate, Metropolitan launched a number of water quality initiatives with progress made on national, regional and local levels.

Among its water quality initiatives, Metropolitan:

- Has committed to retrofitting all five of its water treatment plants to use ozone, a disinfectant highly effective in reducing chlorinated disinfection byproducts and other disease-causing contaminants
- Has committed to adding fluoride to treated drinking water supplies in order to prevent tooth decay. Fluoridation of drinking water is supported by most national and international health agencies and dental organizations including the American Dental Association, the American Medical Association and the Academy of Pediatric Dentistry
- Began participation in the Technical Work Group charged with responsibility for reviewing and commenting on monitoring results and remediation plans for groundwater contaminated with chromium VI at a site adjacent to the Colorado River near Topock, Arizona
- Implemented a recreational policy for Diamond Valley Lake that protects water quality by requiring combustion-engine watercraft to use fuel free of Methyl Tertiary Butyl Ether (MTBE), restricting the types of engines that can be used in watercraft and prohibiting body contact with reservoir water. Diamond Valley Lake is Metropolitan's largest reservoir and was first opened to the public for recreation in October 2003
- Continued participation in a federal-state basin-wide effort to reduce salinity in the Colorado River resulting in the utilization of $24 million in federal funds and $11 million in matching state and local funds for that purpose, including funding provided by Metropolitan through its purchase of energy from Hoover Power Plant
- Continued to monitor efforts to clean up perchlorate contamination of the Colorado River at Lake Mead in Nevada. Perchlorate is a chemical used in the manufacture of solid rocket fuel, munitions, and fireworks. Conventional water treatment does not remove perchlorate. It is a health concern because it can affect the production of thyroid hormones that play an important role in body growth, mental development, and metabolism
- Continued to implement blending and treatment strategies to reduce disinfection byproducts, perchlorate levels and salinity in treated drinking water supplies
- Supported the DWR policy to govern the quality of non-project water conveyed by the California Aqueduct

SAFEGUARDING WATER QUALITY...

Water Quality Programs

- Enhanced security efforts and authorized an additional $10.7 million to improve physical security and monitoring capabilities to further protect drinking water supplies and facilities
- Continued funding DWR's Municipal Water Quality Investigations Program that monitors and studies conditions affecting the drinking water quality of the Bay- Delta
- Continued water quality exchange partnerships with the Friant Water Users Authority and the Kings River Water Association with the goal to invest in local infrastructure in our partners' service areas. This provides an incentive for our partners to exchange high-quality Sierra water supplies for a portion of Metropolitan's SWP supplies
- Implemented selective withdrawals from the Arvin-Edison storage program and the Kern Water Bank to improve water quality
- Continued promoting water quality management as a water conservation measure. Water quality management not only protects public health and safety, but results in less water use, more water recycling opportunities, and maintains the integrity of stored supplies
- Implemented a program to study alternatives for improving Lake Perris Water Quality

...has always been a priority

Why Salty Water is a Problem

The management of salt in our drinking water is both a water supply and water quality problem. Water high in salts is not good for recycling or groundwater projects. By limiting salts in our water supplies, the economy of Southern California and its environment both benefit. Reducing salt loads in imported water supplies allows the region to realize savings of millions of dollars in avoided treatment and impact costs such as the premature replacement of household plumbing and appliances that have been corroded by salt, and reduced agricultural production.

Metropolitan is involved with several groups all focused on coordinating salinity management and identifying ways to reduce salt levels in imported water sources. These groups include the Colorado River Basin Salinity Control Forum, the Salinity Management Coalition, and the Desalination Research and Innovation Partnership. Southern California leaders also are working with urban areas in Arizona, Nevada, New Mexico and Texas to find solutions to mutual problems with salinity in the Colorado and other Western Rivers.

Watershed Activities

Many statewide watershed management activities were initiated in 2003. These activities included the development of the California Agency Watershed Management Strategic Plan, the formation and inaugural meeting of the California Watershed Council, and the continued implementation of the CALFED Bay-Delta Program Watershed Program. Metropolitan participated in these forums to provide input to the important public discussion addressing the development of a statewide policy framework for watershed management and planning activities.

Metropolitan also continued to provide seed money for watershed protection activities throughout its service area through the Community Partnering Program (CPP). In 2003, Metropolitan provided funding to support numerous education and outreach activities addressing watershed protection, water quality, habitat restoration and water conservation issues at the community level.

Los Angeles and San Gabriel Rivers Watersheds

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 watersheds is a viable means of augmenting water supply without adversely affecting groundwater 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 program currently is monitoring six sites with different land uses, analyzing water quality of storm runoff, soil, and groundwater. The next phase of the study will be a neighborhood- scale demonstration project to look at infiltration potential and associated costs and benefits.

Sacramento River Watershed

Metropolitan supports the Sacramento River Watershed Program to help preserve and enhance one of the nation's largest and most critical watersheds. The Sacramento River, via the Bay-Delta, yields more than 35 percent of the state's developed water supply and is an important source of water for the State Water Project system. The watershed program was founded in 1996 to bring together public and private stakeholders, including representatives of agricultural, environmental, and urban interests. The program encourages these interest groups to come together in search of workable solutions to water quality problems in the watershed.

As part of the 2003 CPP, Metropolitan continued to provide funds to the Sacramento River Watershed Program to help finance production and distribution of public service announcements to educate the public about the need to protect water quality in the watershed. Metropolitan also continued to participate in the watershed program to provide input to the development and implementation of the water quality monitoring program.

Southern California's Integrated Resources Plan

In 2003, Metropolitan completed the technical phase of the 1996 IRP Update and released a draft report. The IRP Update is an assessment of the progress made in implementing Southern California's water resource targets under the landmark 1996 IRP. The 1996 IRP was a regional stakeholder planning process that culminated in a long-term water resources development strategy for Southern California. Included were goals for imported supply, recycling and groundwater recovery, surface and groundwater storage, and transfers.

The IRP Update looked at the 1996 resource development targets in light of changed conditions, the most significant being higher projected local supplies and conservation savings. The other two objectives of the update where to review the goals and achievements of the 1996 IRP and to update the resource targets through 2025.

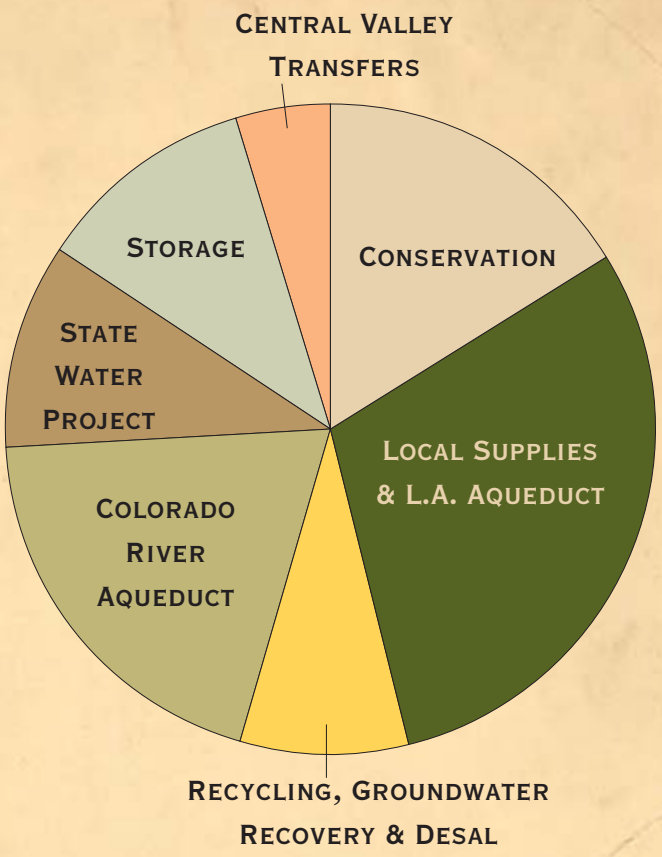
The results of the IRP Update analysis demonstrate that the resource targets of the 1996 IRP, factored in with the changed conditions, provide for 100 percent reliability through 2025.

Although the current resource targets did not need to be modified, the IRP Update identified two new areas of concern: 1) increased water quality regulation, and 2) resource implementation risk surrounding the development of planned projects.

The Update recommends a 10 percent supply buffer to manage the two concerns and other uncertainties. The planning buffer calls for Metropolitan to add 500,000 acre-feet to existing water resource plans by 2025, equally split between local and imported sources.

Metropolitan continues to implement the comprehensive supply plan identified by the 1996 IRP Process and reviewed in the 2003 IRP Update. The supply plans continue Metropolitan's current practices of developing a diverse mix of supplies and providing a very high degree of reliability.

2020 IRP Goals



COMMUNITY PARTNERING PROGRAM

Metropolitan's CPP was created in 1999 to channel Metropolitan resources to community based groups, nonprofit organizations, and professional associations for activities that encourage discussion and involvement in regional water issues. With a grass-roots orientation, the CPP supports programs that empower Southern Californians to learn more and become involved in water issues. The program encompasses sponsorships, memberships and support for selected activities that include research, educational collaborations, and policy forums.

In 2003, watershed management/protection and native plant and California Friendly garden programs became CPP's primary focus. Contributions for fiscal 2003 exceeded $500,000 and were divided among 97 projects. Each project is unique in scope, but all share the ability to reach people with a message about water.

The following list represents only a fraction of the organizations that have received CPP sponsorships, primarily for watershed management and landscape education programs. Other projects sponsored by the CPP are listed in the Appendix.

AMBUEHL ELEMENTARY SCHOOL

Native Plant Guide Book. Students create a drought-tolerant garden book demonstrating viable plants for the San Juan Capistrano community

BALLONA WETLANDS FOUNDATION

Educational Project. CPP program supports "Wonders of Wetlands," an educational tool expected to reach nearly 5,000 students in grades 4 to 6 to focus on the functions of a wetland

BOLSA CHICA LAND TRUST

Habitat Restoration. CPP helps fund efforts to revegetate the Bolsa Chica Mesa to create a more livable habitat for animals and plant life and improve groundwater quality. Support was also provided to create "Miracles of a Marsh," a K-6 outdoor education program to address urban watershed management and water quality issues over three years that will host 5,000 students and 300 teachers

CAL POLY FOUNDATION, INC.

Demonstration Gardens. The 21st Century garden project will demonstrate water-conserving plant material, methods to capture rainwater, practices to minimize water loss and other microclimate efficiencies. Lessons from the gardens can be applied to school gardens

California State Parks Foundation

Weeds 2 Wonder Program. CPP co-sponsors three non-profit organizations that assist underserved high school youths with opportunities to plant native species in the Baldwin Hills Scenic Overlook State Park

EL CENTRO DE ACCION SOCIAL, INC.

School in the Park Program. CPP contributes to the comprehensive six-week Summer School in the Park program that reaches 300 low-income and recently immigrated Pasadena youth in grades K-12 at Pasadena's Center Park. Activities highlight the water cycle, watersheds, and health benefits of water, water science lessons, water-related art projects, water storytelling and water in basic math problems

FRIENDS OF SHIPLEY NATURE CENTER

Native Garden. CPP sponsors a native garden at the Shipley Nature Center. This garden demonstrates benefits of a native plant garden for water conservation and attracts native wildlife through native habitat

RANCHO SANTA ANA BOTANIC GARDENS

Learning Series. CPP supports the Fall Horticulture Series to teach homeowners how to incorporate water-saving native plants into their landscaping

HEMET LIBRARY FOUNDATION

Water Education Collection. CPP supports the establishment of a water resources library book collection: history, water cycle, and science projects for K-12 students

RAINBOW MUNICIPAL WATER DISTRICT

Community Center Garden. CPP sponsors a one-acre native plant garden at Rainbow's headquarters that includes trails, educational signage, and interactive kiosks

RIVERS FOUNDATION OF THE AMERICAS

Green Map Project. Provided funding for research to develop a green map with pictographs of hydrology, river science, policies, geography and water resource employment opportunities

BEST MANAGEMENT PRACTICES FOR URBAN WATER CONSERVATION

BMP Number	BMP Name	Metropolitan Program Description	Regional Program Status	Quantities and Dollars Through 6/30/2002		Quantities and Dollars FY 2003	
1	Residential Water Surveys	Financial support for surveys, retrofits, and research & development	Surveys	65,737	$1,874,227	1,497	$37,442
			Toilet devices distributed	1,130,809	$1,305,523	814	$2,528
			Residential R&D (projects)	8	$299,799	0	$0
2	Residential Plumbing Retrofits	Financial support for retrofits and distributions	Low Flow Showerheads distributed	2,962,409	$12,383,040	2,319	$11,338
			Faucet Aerators distributed	215,302	$214,136	3,794	$3,794
3	System Water Audits, Leak Detection	Distribution system leak detection audits	MWD surveys own pipes & aqueducts	annually	$3,500,000	annual	$350,000
			MWD water audits and leak detection for MAs	6	$280,000		
4	Metering and Commodity Rates	All connections metered		yes		yes	
5	Large Landscape	Financial support for retrofits, surveys, education, and research & development	Audits conducted	1,662	$711,123	253	$64,612
			Moisture sensors	499	$132,329		
			Standard irrigation controllers	45	$299,006	0	$0
			Central controllers	5	$496,831	0	$0
			Protector del Agua Graduates	16,501	$1,162,136	7,545	$371,864
			Landscape education	24	$45,485		
			Circuit Rider Program (cities)	240	$162,250		
			Landscape R&D (projects)	10	$356,638	1	$19,225
6	High Efficiency Washing Machines	Financial support for rebates	Residential High Efficiency washers rebated	31,246	$1,086,565	25,022	$1,573,556
7	Public Information	Materials & programs provided		$11,404,641		$1,780,000	
8	School Education	Full range of school curricula		$7,414,157		$811,136	
9	Commercial, Industrial, Institutional	Financial support for retrofits, surveys, workshops, and research & development	ULFTs	40,719	$2,432,308	8,112	$591,431
			Urinals	716	$52,731	1,011	$82,124
			Flush valve kits	265	$4,758	334	$9,519
			Cooling tower retrofits	301	$145,825	226	$106,630
			Clothes washer rebates	6,203	$801,385	5,014	$1,295,839
			Industrial process improvements	1	$84,284	1	$36,072
			Pre-rinse spray valves	53	3525	6,104	$405,651
			Other device rebates (not previously offered)			642	$174,084
			Surveys	905	$650,000		
			Workshops on commercial retrofits	7	$7,000		
			CII R&D (projects)	10	$327,594	1	$8,809
10	Wholesale Agency Assistance	Financial support and assistance provided for BMPs 1-9 and 11-14		See Total Below		See Total Below	
11	Conservation Pricing	Commodity rate structure in place		yes		yes	
12	Conservation Coordinator	Staff of 10 people		$9,749,690		$1,800,000	
13	Water Waste Prohibition	Exempt					
14	Residential ULFT Replacements	Financial support for retrofits and rebates	Toilet rebates for retrofits	1,808,944	$113,946,658	174,724	$10,483,440

Indicates program not offered

Cumulative Total Spent by Metropolitan Water District Through FY2002 >> $171,333,644

Total Spent by Metropolitan Water District During FY2003 >> $20,019,094

Cumulative Total spent by MWD through FY 2003 >> $191,352,738

Appendix

Public Hearing Comments Excerpts

The following excerpts are from the Public Hearing held on December 8, 2003, to review Metropolitan's Regional Urban Water Management Plan for adequacy in achieving an increased emphasis on cost-effective conservation, recycling, and groundwater recharge.

"My name is Tim Piasky and I am here representing the Building Industry Association of Southern California. As you know, a reliable supply of water is vital to just about every facet of modern living, but it is especially critical to the building industry. With MWD being the main provider of water in Southern California and having an increased emphasis on conservation, it is mutually beneficial for the building industry and MWD to have a strong working relationship. Fortunately, this relationship is growing stronger and stronger…We need to expand upon the momentum we have gained over the past year. That is why the Building Industry Association of Southern California is asking MWD to expand its efforts and support next year in the following areas: 1) the development and implementation of new technology such as desalination and weather controlled irrigation systems to broaden water supply options; 2) incentives for cost-effective water conservation programs to reduce the need for new facilities and to more efficiently use existing new facilities; 3) increase storage and other water management strategies to ensure sufficient water supplies are available under drought conditions. An increased focus in these areas over the next year will take us from the good year we have just had to a great year in 2004. We gratefully acknowledge MWD for its proactive handling of water supply issues and look forward to an even greater joint effort going forward."

Tim Piasky, Building Industry Association of Southern California

"The Los Angeles and San Gabriel River Watershed Council has been involved with MWD since the beginning of our organization in 1991; [Metropolitan's role was first] as a liaison, and since 1996 as a voting board member….In the last couple of years we've created a Landscape Ethic Committee which is focused on promoting native landscaping in the watersheds and the LA basin in general that was largely the inspiration from Met…One of our most recent efforts is developing landscape guidelines for the Los Angeles River. This is not yet a public document, it needs to be reviewed by the LA County Board of Supervisors, but it was submitted to LA County Public Works this last week. This is an example of suggesting a planting palette that is going to be much less water-consuming than other potential ones and we expect this to be a model and a template for other water bodies in the LA Basin. Met has also stimulated [our] collaboration with Rancho Santa Ana Botanical Gardens and that's reflected in the development of these landscape guidelines, etc. For a number of years Met has also been a prime participant from the respect of the water quality program and our water augmentation study…These and many other ways, we feel that we've benefited greatly by the partnership with Metropolitan and we acknowledge and appreciate Metropolitan's important role in these programs and others."

Rick Harter, Los Angeles and San Gabriel Rivers Watershed Council

"As we look forward to the next 75 years, water resources in California are definitely going to be finite. The population is going to continue to increase and priorities are going to be changing. We've made a tremendous first step to potentially deal with these situations and the first thing I'd like to talk about, I'd like to commend the MWD on the bewaterwise.com program. As we look forward to the future, we've created a lot of artificial Southern California and we've forgotten a lot of our heritage in terms of our planting and this *bewaterwise.com* program looks backwards as we look forward and plant more of our native plants and even more conservation programs…Now, the second topic, you know since the early history of California, the climate has always been hanging out from underneath us and you know when we first built the great MWD Aqueduct Program that was followed by the great dust bowl years, that was pretty dry. Then we went into the fifties and sixties and relatively speaking that was pretty dry. Then all of a sudden the boom years of the eighties and nineties, we actually were very, very wet in California, actually all over the southwest - about 20 percent above normal. But... we've entered into a dryer period and for approximately the last five years we've been approximately 20 percent below our long term average in contrast with the eighties and nineties which were 20 percent above average. And so as we look forward here to the next couple of decades, and if population continues to explode throughout Southern California is that we are going to have to be careful about our water supplies… Now, we've actually entered into a time where it's going to be dryer and so we are going to have to plan accordingly. [Additionally] the population has exploded, we've also changed the climate, not just in Southern California but globally, and we are going to go into what some people call "global warning"…My final remarks here, is that I want you to think and talk more about science when you make your long-range decisions because the water business, unlike politics and many other things that we deal with in society, [has] to have a 50-year plan. Thank goodness you have. You've had actually 20, 30 and 40-year plans. But when you do your next 50-year plan you are going to have to factor in [potential climate change effects]. Now there are a couple of possibilities here. You could either be water winners or water losers and nobody really knows that for sure. But you are going to have to factor in both possibilities in your long-range plan."

Bill Patzert, Jet Propulsion Laboratory

"It is my pleasure to stand here before you as a Member Agency Manager today and commend you on really outstanding leadership and speak specifically of a few of the programs which we are involved here with your staff. I'd like to speak today of three programs: groundwater conjunctive use program, seawater desalination program and your general conservation program. In terms of groundwater conjunctive use, we are very pleased in Long Beach to be one of the participants in several groundwater storage programs that you are developing. I think we have the first one in the region and we are very excited about it. In fact it is in construction as we speak and most importantly I am here to commend your staff for their leadership…Secondly, in terms of seawater desalination, we are very pleased with the cooperation and participation from your staff, both in terms of the financial incentives that you are offering and in terms of the $50,000 per member agency in research money that you've allocated…And then finally, I just want to commend you for continuing to be the leader in California, and the world for that matter, in your water conservation programs; you've developed many new innovative programs this year. We are pleased to participate in many of those and I just want to thank you for that and commend you on your leadership in conservation."

Kevin Wattier, City of Long Beach Water District

Appendix

More Community Partnering Program Recipients

Co-sponsored Educational Projects in 2003 include:

Agua Hedionda Lagoon Foundation
Develop and complete a two-acre Lagoon Discovery Center, which borders a 186-acre biological preserve

Altadena Foothills Conservancy
Support Conservancy's Millard Canyon watershed habitat restoration education outreach and partnership with Outward Bound Adventures

Anaheim Beautiful
Support educational program, in particular, the purchase of native plant workshop materials, ongoing maintenance, and water awareness signage

City of San Juan Capistrano
Re-landscaping of the Montanez Adobe and a public relations campaign to educate the community on the merits of native plants and practical irrigation methods

County of Orange, Watershed & Coastal Resources
Develop teacher training materials for water resources at Santiago Oaks Regional Park

Crescenta Valley Water District
Support the water conservation demonstration garden as well as signage, brochures and workshops

Friends of Baldwin Hills
Co-sponsors "Weeds 2 Wonder" program to assist underserved high school youths with opportunity to plant native species in the Baldwin Hills Scenic Overlook State Park

San Gabriel Mountain Regional Conservancy
Co-sponsor "Think River," an Integrated Youth Watershed Education Program that provides youth, teachers and community leaders an opportunity to learn about the natural resources in the San Gabriel River Watershed

St. John Bosco High School
Funding for water sampling kits and supplies for environmental science class

Tides Center / Marine Educational Project
Determine most effective irrigation techniques for native plant survival and water conservation; restore habitat near the interpretive center

TODEC Legal Center
Outreach program on water issues for limited- and non-English-speaking rural Riverside County agricultural workers

Vallecitos Water District
In conjunction with the San Marcos Boys & Girls Club, sponsor after-school water awareness and education activities

Water Replenishment District of Southern California
Sponsor educational partnership for a variety of water resources education activities, including elementary school poster, essay and calendar contests

Windows-On-Our-Waters
"TidePool Cruiser" offers underserved students in the Santa Ana Unified School District hands-on, interactive activities

Yuima Municipal Water District
Much-needed upgrade of a 1989 water conservation garden featuring new plants and signage

Sections 130.5 and 130.7 of the Metropolitan Water District Act

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

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

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

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

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

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

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

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

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

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

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

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

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

(2) The Water Replenishment District of Southern California.

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

(4) The County of Los Angeles.

(5) The United States Army Corps of Engineers.

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

Member Agencies

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
February 27, 1931

Joined Metropolitan
February 27, 1931

Joined Metropolitan
February 27, 1931

Joined Metropolitan
Febryary 27, 1931

Joined Metropolitan
December 17, 1946

Joined Metropolitan
July 23 ,1948

Joined Metropolitan
October 16, 1950

Joined Metropolitan
November 15, 1950

Joined Metropolitan
November 26, 1951

Joined Metropolitan
November 26, 1951

Joined Metropolitan
January 15, 1953

Joined Metropolitan
November 12, 1954

Joined Metropolitan
November 12, 1954

Joined Metropolitan
December 1, 1960

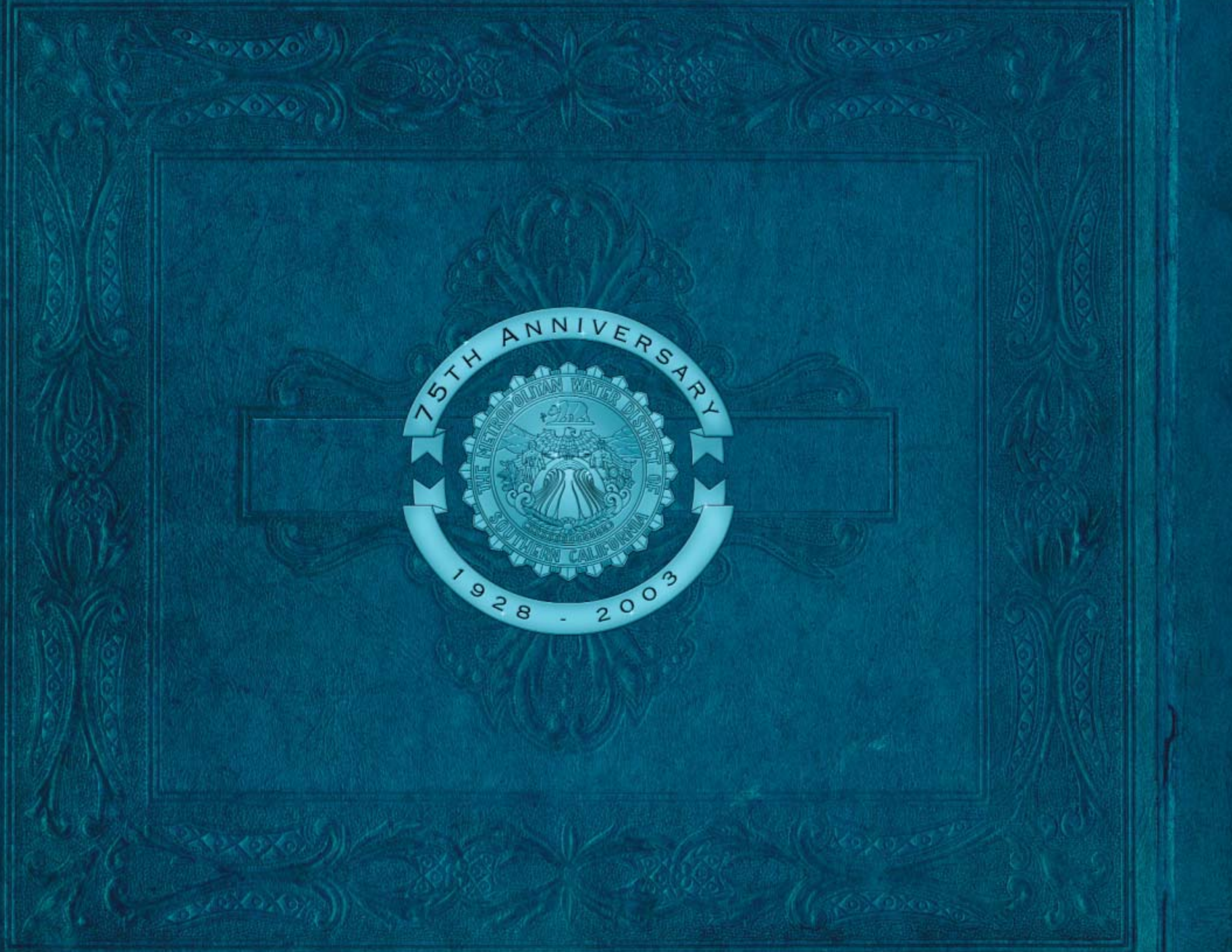
Joined Metropolitan
December 14, 1960

Joined Metropolitan
March 27, 1963

Joined Metropolitan
November 12, 1971

THIS PAGE INTENTIONALLY

LEFT BLANK


75TH ANNIVERSARY
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
1928 - 2003

Every drop saved **now** is there for **tomorrow**...

Annual Progress Report to the
California State Legislature

Achievements in
Conservation, Recycling
and Groundwater Recharge

Metropolitan Water District of Southern California · February 2005

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.

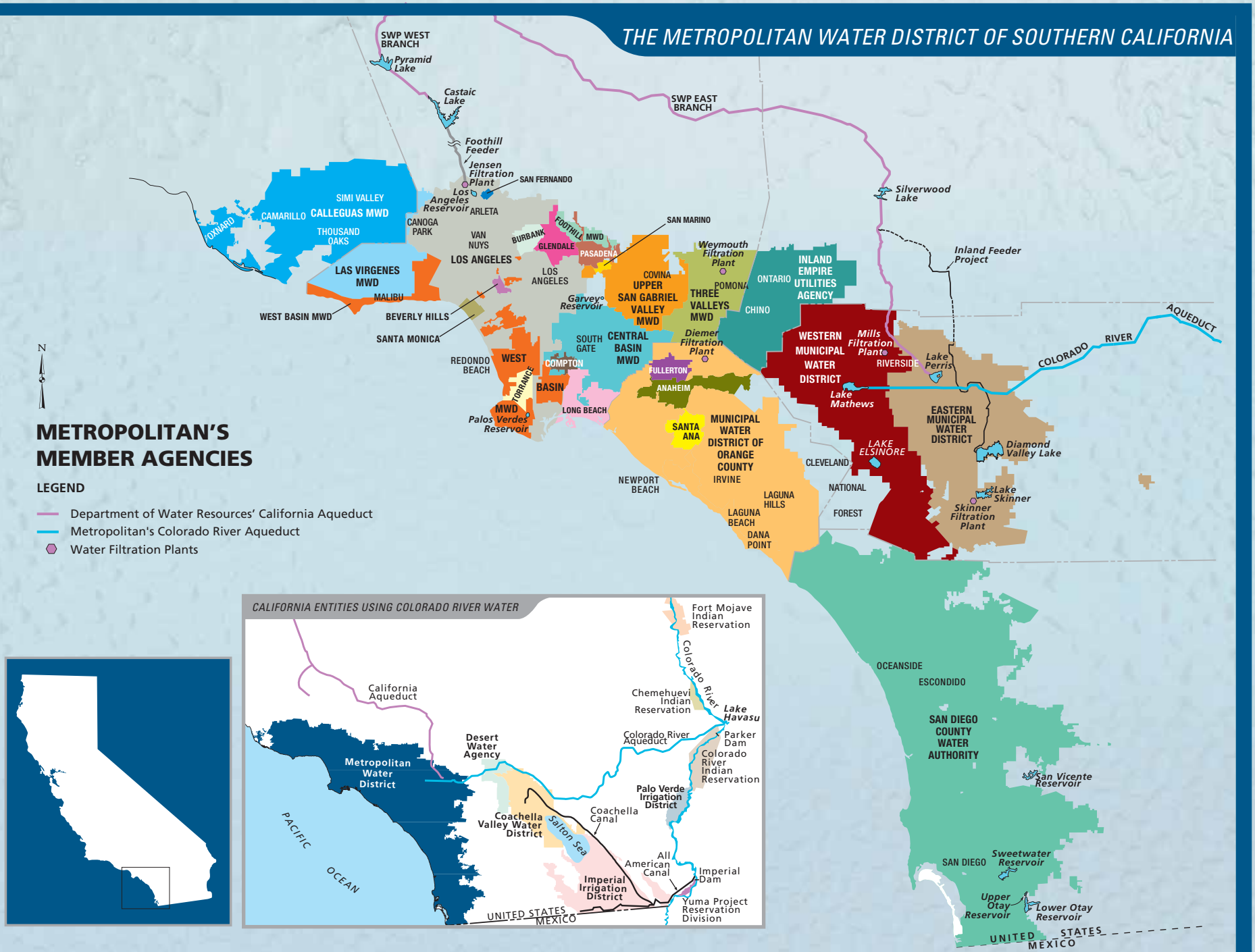
The mission of Metropolitan is to provide its 5,200 square-mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

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.

...for everyone

For more information about this report contact
Kathy Cole, Metropolitan's Executive Legislative Representative,
at (916) 650-2642 or kcole@mwdh2o.com

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



METROPOLITAN'S MEMBER AGENCIES

LEGEND

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

Table of Contents

1.	Executive Summary	2
2.	Achievements	7
3.	Colorado River Aqueduct and State Water Project Programs	22
4.	Water Quality Programs	27
5.	Public Participation	33
6.	Appendix	38

Executive Summary

Despite formidable challenges, Southern California achieved water reliability in 2004 as it reaped the payoff from investments in conservation, water recycling, watershed management and several other water resource tools. Along the Colorado River, reservoirs have dropped to historically low levels, one revealing an entire town that had been submerged since the early 20th century. Yet, because of Metropolitan's diverse portfolio of resources, the Colorado River is slated to meet approximately 30% of the region's demands. What used to be provided by the Colorado River has been made up by storage supplies available as a result of continuing water conservation and strategic resource management alternatives.

The California Friendly and native plant movement gained momentum in 2004, with consumers finding more varied selection of plants from retailers.

Metropolitan's efforts have protected not only against drought, but also shielded its 18 million customers from a confluence of events and uncertainties that have been as unpredictable as the weather.

Consider the events of the past six years. In 1999, the pumps powering the state's water system were stilled when the Delta Smelt stayed longer than usual in the Bay-Delta. In 2002, the Colorado River basin faced its driest year on record. In 2004, climate experts were warning of a severe, one-in-500-year drought on the Colorado, while in the Bay-Delta crews labored round the clock to repair a levee break. California has faced both smaller snow packs and torrential rainstorms.

Beyond that, the world's climate may be changing for a variety of complex reasons. We hear speculation that such change will have impacts on our water supply strategies in the future. Does it mean more rain, or less? Will there be less melting snow and runoff from the Sierra Nevada Mountains? Could there be more extreme floods or prolonged droughts, and how would we manage them?

Flexible adaptability is key to our mission.

As this annual report will show, in 2004 the Metropolitan Water District of Southern California continued to withstand record drought conditions on the Colorado and below average precipitation in Southern California without shortages, using a successful, diversified resource portfolio that keeps our region one step ahead of dry conditions.

Metropolitan has achieved this stability by integrating a variety of strategies, while resisting calls to apply a narrow approach that relies heavily on one particular solution or another.

For example, some might say increased surface storage is the magic bullet, and downplay conservation and water recycling. Others could say that Southern California should simply "write off" billions of dollars invested in the state's water system and its environmentally-sensitive storage programs, and rely instead on conservation and water recycling.

Executive Summary

Metropolitan's 2004 Achievements Scorecard

Metropolitan-Assisted Local Resources

Active Conservation:

101,610 AF	FY 2004 Production
$22 Million	FY 2004 Investment
712,527 AF	Cumulative Production
$213 Million	Cumulative Investment

Active conservation is water saved directly as a result of conservation programs funded by water agencies, and includes plumbing device retrofits, industrial process improvements, landscape efficiency improvements and water efficiency surveys. In contrast, ***Passive Conservation*** is water saved as a result of changes in efficiency requirements for plumbing fixtures and plumbing codes.

Water Recycling:

75,000 AF	FY 2004 Production
$15 Million	FY 2004 Investment
680,000 AF	Cumulative Production
$124 Million	Cumulative Investment

Metropolitan provides financial incentives to its member agencies for recycling projects through its ***Local Resources Program (LRP)***. Metropolitan's ***LRP*** began in 1982 (originally called the *Local Projects Program*).

Groundwater Recovery:

43,000 AF	FY 2004 Production
$8 Million	FY 2004 Investment
245,000 AF	Cumulative Production
$41 Million	Cumulative Investment

Metropolitan also provides financial incentives to its member agencies for groundwater recovery projects through its ***LRP***. Metropolitan began helping to fund these projects in 1991.

Metropolitan-Assisted Groundwater Programs

Contractual Storage:

$35.1 Million	Cumulative Investment Through 2004
$64.3 Million	Metropolitan Funds Earmarked for Programs
$45 Million	Prop. 13 Grant Funds Administered by Metropolitan

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

Water Rate Incentives:

$319 Million	Cumulative Investment Through 2004

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

December 2004 Conjunctive Use Storage & Replenishment Delivery Storage: 203,600 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.

Executive Summary

Metropolitan believes you can't do one without the other. Conservation and water recycling are crucial. Southern California is one of the leaders in reducing the state's per-capita consumption of water, keeping demands relatively flat despite growth. Because of conservation, water recycling and other innovative water management efforts, Metropolitan was able to absorb a 50 percent loss of water supplies that it has historically relied upon from the Colorado River. What has made conservation and other efforts successful has been the fact that Metropolitan stored available imported water during wet years so that it could be called upon when the weather turned dry.

The region continues to invest in groundwater storage, water transfers and the recovery of contaminated groundwater basins, among other resource management tools. Metropolitan's current supply portfolio demonstrates its reliability; aggressive advances in conservation will help maintain reliability in the future.

Metropolitan and its member agencies shifted their focus to greater opportunities for outdoor water conservation by highlighting the beauty and efficiency of native and California Friendly landscapes.

Southern California's simple strategy is that *every drop of water saved now is there for tomorrow* for everyone, including cities, farms and the environment.

For Metropolitan, placing a greater emphasis on cost-effective conservation, water recycling and groundwater programs is not something done under duress – it's a matter of common sense.

CONSERVATION

Conservation is not something to be done only by the "water agency" or the government when the drought alarm goes off. It is something that needs to be done by everyone regardless of drought or wet conditions. For the average resident who takes the message to heart, it means that when drought hits — or when water service is interrupted because of unforeseen events — their garden won't suffer. For businesses, it means they can continue to operate. For government it means stable tax revenues because businesses won't flee because of uncertain water supplies.

When neighborhoods, cities and regions cooperate in the effort, and when water agencies and government can make a credible, informative case to the public about the value and need for conservation, the benefits are numerous.

If we can achieve conservation savings in fall and winter, it translates into water that can be stored for dry times. It permits Metropolitan to obtain water through various arrangements with agricultural partners and place that water into reserve, reducing competition for scarce resources with the environment and other farmers at critical dry times.

In 2004, conservation loomed larger than ever as the foundation for Metropolitan's reliability strategy, with additional investments totaling more than $22 million.

Naturally, there were the old stand-bys, such as the tens of thousands of ultra-low-flush toilets installed in 2004. But when it comes to conservation, resting on one's laurels and relying on the same old tools is a risky strategy.

In addition to investing millions of its own dollars, Metropolitan has harnessed a variety of state and federal grants to promote the latest conservation technology and techniques across its six-county service area.

For example, more than 30,000 homes are saving millions of gallons by using high-efficiency, front-loading clothes washers. High tech sprinkler timers are improving thousands of landscapes through better irrigation. More than 25,000 restaurants are saving huge amounts of energy and water by washing dishes with pre-rinse spray valves.

Yet more than ever, Metropolitan's efforts have turned outdoors, introducing a new term to the state's lexicon – California Friendly.

More than 100 retailers large and small have begun offering California Friendly and native plants to their customers, who are also getting in-store lessons in waterwise landscaping. Homeowners and professional landscapers alike are getting comprehensive training on advanced, water-efficient landscaping through the Protector del Agua Program.

Thousands of homebuyers are being exposed to California Friendly landscape designs and new conservation devices, such as dual-flush toilets, through a model home partnership with the region's building industry. Others are using grant funds to create waterwise landscapes in their communities.

Thousands continue to get on-site surveys on the best way to save water indoors and out.

Since 2004 began, millions of Californians have learned how not to over-water their yards, thanks to a series of whimsical advertisements. Cable television reinforced that theme with a native plants episode of Metropolitan's "Straight from the Tap" program. As 2005 begins, Metropolitan is unveiling a new public action campaign with the flexibility to adapt to changing conditions.

An average of 1,000 people a day visit the bewaterwise.com web site. At least 250,000 others are popping a CD-ROM in their computers for a look at a thousand native and low water-using plants. They can also get hotline advice from a Metropolitan-funded native plants expert in a partnership with Rancho Santa Ana Botanic Gardens.

Metropolitan kept busy updating its water curriculum for thousands of elementary school students. It also launched a World Water Forum as part of a new outreach program that attracted the region's top universities to develop and research water saving and water quality technologies.

Meanwhile, grass-roots efforts to promote conservation, California Friendly plants and other water management tools through community groups, schools, cities and other organizations received a major boost from the Community Partnering Program, which provided hundreds of thousands of dollars in grants in 2004.

The bewaterwise.com web site offers a series of tools and ideas for conservation savings and receives an average 1,000 visitors a day.

The California Municipal Utilities Association honored Metropolitan's Innovative Conservation Program in 2004 as an exemplary method of implementing conservation best management practices. The public relations profession rated the *bewaterwise* water conservation campaign superior to the national Rock the Vote program.

And what about the future? Could more storm water that is now quickly shunted to the ocean be used instead to recharge groundwater basins? Can more "mow and blow" professionals be trained to become California friendly gardeners? Those are just two of the possibilities under investigation.

But in an uncertain world where a single emerging contaminant could disable a key water supply for thousands, perhaps millions of people, urban conservation alone is not sufficient.

Executive Summary

AGRICULTURAL PARTNERSHIPS

Farmers must face their own set of uncertainties, including an unpredictable global commodities market, and they continue forming mutually advantageous partnerships with Metropolitan that help provide a steady source of revenue while keeping their most productive acreage in use.

In August 2004, Metropolitan and the Palo Verde Irrigation District executed a 35-year agreement to implement the Land Management, Crop Rotation and Water Supply Program. As it is implemented in January 2005, the program will help stabilize the Palo Verde Valley economy and leave 71 to 93 percent of the farmed acreage in cultivation, while transferring up to 110,000 acre-feet of water per year to Metropolitan's service area.

WATER RECYCLING

Metropolitan invested $15 million in water recycling projects that produced 75,000 acre-feet of water in fiscal year 2004, enough to supply roughly a quarter-million Southern Californians. When other member agency projects that do not receive Metropolitan incentives are included, the total rises to 209,000 acre-feet.

Metropolitan also worked hard to pass the CALFED authorization bill that contains funding for water recycling projects that will further enhance Southern California's water reliability.

GROUNDWATER RECOVERY

Metropolitan has steadily increased its investment in groundwater recovery projects to assist its member agencies with developing this increasingly vital source of supply. The $8 million investment in fiscal year 2004 represents a 33 percent increase over a two-year period, and the 64,000 acre-feet of groundwater recovered by Metropolitan- and member agency-funded projects is three times the amount of groundwater recovered in 1995.

SEAWATER DESALINATION

Buoyed by the interest in seawater desalination from its member agencies, Metropolitan issued an Integrated Resources Plan Update that set its long-term desalination target at 150,000 acre-feet to meet the region's future demand. In 2004, Metropolitan also provided $50,000 each to three separate member agencies as part of a $250,000 allocation for seawater desalination research.

WATER QUALITY

Metropolitan's ongoing water quality programs have also enhanced its reliability.

Metropolitan and its member agencies continued their campaign to drive down salinity in Bay-Delta, Colorado River, and local groundwater supplies. It's a boon for both water quality and water recycling.

Metropolitan also continued its record as one of the West's most aggressive defenders of source water quality, pressing hard to keep contaminants such as perchlorate and chromium 6 from diminishing the water quality of the Colorado River.

CONCLUSION

Even the best-laid insurance plans can't defend against all catastrophes – but Metropolitan's integrated, diverse water reliability strategy has already exceeded the expectations of a decade ago, and in 2004 it continued to serve Southern California well. We're optimistic that this strategy will be equally effective in 2005 and beyond, providing real shared benefits for the environment in Northern California and the Colorado River Basin, as well as the 18 million people who depend on a Southern California economy that is anchored in the region's reliable water supply.

Conservation

A dictionary defines conservation as "The protection, preservation, management, or restoration of natural resources such as forests, soil, and water." Southern California's $700 billion-plus economy depends on reliable water supplies, and there aren't many "new" sources to tap. As part of a larger integrated approach, conservation helps ensure a reliable water supply for years to come, while limiting impacts to the environment. Wise, efficient use of water will play an increasingly essential role in Southern California's water future.

Seawater desalination is a key ingredient in the region's Integrated Resources Plan.

Guiding Policies

Metropolitan's conservation policies have their foundation 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 MOU's March 2004 amendments better define the level of support that wholesalers like Metropolitan are expected to provide their retail agencies.

Metropolitan is committed to providing effective water conservation programs and services, and has invested more than $220 million in conservation programs and related activities within the region. This continually expanding commitment has witnessed a shift in focus to capture new innovative opportunities for saving water, such as high efficiency clothes washers.

Metropolitan's staff is pursuing a number of initiatives to make its conservation programs more effective.

- Using revised forecasts from Metropolitan's Integrated Resources Plan Update to gauge progress in meeting the regional commitment to reduce demand for water
- Developing a long-term conservation strategy in collaboration with our member agencies
- Staying active on the legislative front by finding regional solutions among disparate interests
- Identifying new partnership opportunities to leverage conservation programs

We are engaged in active programs with the home building development community, the state energy commission and retail chains such as Home Depot and Armstrong Garden Centers. We continue to explore our common interests with sanitation districts.

Achievements

Conservation Credits Program

The backbone of Metropolitan's conservation effort is the Conservation Credits Program initiated in 1988. Metropolitan contributes one-half the program cost -- up to $154 per acre-foot of water conserved -- to assist member agencies and the public in realizing opportunities to increase water use efficiency.

Rate Structure

Metropolitan's new rate structure implemented in January 2003 includes a Water Stewardship Rate, which funds conservation, water recycling, groundwater recovery and other local projects through Metropolitan's Local Resources and Conservation Credits programs. A two-tiered water rate for imported water provides price signals to encourage water agencies to invest in cost-effective conservation, water recycling, transfers, seawater desalination and groundwater programs. In addition, the two-tiered rate structure allocates a greater share of costs to Metropolitan's member public agencies that use more water in the future.

Grocery store giveaways were a new twist on the conservation outreach campaign.

Grant Funding

Proposition 13

Last year's annual progress report came on the heels of two key state water conservation grants awarded under Proposition 13 (The Safe Drinking, Clean Water, Watershed Protection, and Flood Protection Act). These grants are now being put to use:

- $2.5 million for a rebate program where increased incentives have helped place more than 33,000 residential high efficiency clothes washers in Southern California homes, saving an estimated 173 million gallons each year. A 2004 amendment to the Urban Water Conservation MOU revised the clothes washer incentive programs in light of legislation set to take effect in 2007, requiring that all clothes washers meet efficiency standards
- $1.8 million to assist in the installation of up to 5,500 weather-based irrigation controllers for homes and businesses throughout Southern California

This Chino Basin recharge field naturally treats water so it can be used beneficially.

California Public Utilities Commission

Metropolitan, in partnership with the California Urban Water Conservation Council, used grant funding from the California Public Utilities Commission to install 12,000 pre-rinse spray valves in restaurants within Metropolitan's service area. In July 2004, the commission provided a $2.2 million phase two grant that is expected to result in another 17,000 pre-rinse spray valve installations. This grant program, funded by energy utility service charges, is considered one of the most cost-effective and successful efforts the CPUC has ever funded.

Synthetic turf, pictured here in Santa Monica, is being considered for difficult-to-maintain locations such as narrow public medians and parking lots.

U.S. Bureau of Reclamation

The following projects received funding in 2004:

- California Friendly Landscape Pilot Rebate Program for New Homes — Last year's $182,000 grant provided incentives to homebuilders to establish up to seven acres of water-efficient landscaping for new homes. This year, the Bureau awarded an additional $80,000 to expand this program to indoor and outdoor efficient designs
- Industrial incentive programs — This provides $100,000 in incentives to develop regional marketing and technical expertise
- Turf replacement on municipal and public lands — Earmarks $220,000 in incentives to help eligible entities replace irrigated landscape with synthetic turf in difficult-to-maintain locations, such as narrow medians and parking lots
- Industrial Recirculation Study —This $180,000 grant pays for analyzing the cost-saving opportunities for industry using on-site or centralized water treatment and recirculation technology
- World Water Forum — A $50,000 Innovative Conservation Grant (maximum of $10,000 per team) in conjunction with other participating agencies allows college teams to compete for funding by proposing new efficiency technologies or strategies

Regional Commercial, Industrial and Institutional Rebate Program (CII)

In 2004, Metropolitan entered into a five-year, $20 million contract with a vendor to provide management and marketing services for the widely successful CII program. The bulk of the money will go directly to businesses as rebates for water-efficient fixtures such as water-pressurized brooms, recirculating X-ray machines, commercial ULF toilets and more efficient clothes washers. A region-wide vendor provides a single point of contact for prospective customers and allows for cost-effective marketing. In Metropolitan's service area (except San Diego County) interested parties can call 1-877-SAV A BUC (728-2282) to learn more about program rules and eligibility requirements. In San Diego County, the number is 1-800-986-4538.

Innovative Conservation Program (ICP)

We are currently in the second ICP program cycle. Results from 10 new projects selected in 2003 (which include a landscape incentive program, an artificial turf demonstration project, commercial food steamers and other proposals) are expected in 2005. Four additional projects were selected as a result of grant funding from the Bureau of Reclamation. Meanwhile, the ICP program received the California Municipal Utilities Association 2004 Community Service/Resource Efficiency Award for large utilities.

Achievements

Innovative Supply Program (ISP)

In 2004, Metropolitan issued 10 contracts worth nearly $250,000 to evaluate proposals for new water sources that could benefit Southern California. Among the cutting-edge technologies to be investigated under the ISP are: Harnessing more storm water runoff for groundwater recharge, new techniques to increase reservoir yields, and new approaches to localized recycled water treatment.

Landscape Programs

Metropolitan retooled its landscape incentives program in 2004, providing new ways to offer incentives that encourage landscape efficiency. Aimed at small businesses and larger commercial sites, the program provides customers multiple incentive tracks to support efforts at reducing their irrigation water use. Each business gets a customized irrigation plan, along with ongoing feedback on how their performance compares to the model plan. Customers also receive training through the Professional Protector del Agua (PDA) program (described later in this report). Metropolitan provides an incentive of up to $3.50 per month for each irrigated acre under management. If a customer installs equipment upgrades, Metropolitan provides an incentive based on actual water savings.

In support of these activities, Metropolitan maintains nine California Irrigation Management Information Systems (CIMIS) stations to provide real-time irrigation efficiency information for more developed areas. Data from these specialized weather stations is used to calculate the watering index used for self-adjusting irrigation control systems.

Model Home Program

This pioneering effort creates incentives and design assistance for new home-builders to install more efficient water saving devices in model homes. Each development's model home displays will contain at least one version with dual-flush toilets, high efficiency clothes washers, native and California Friendly landscaping and state-of-the-art, self-adjusting irrigation control systems. These model homes provide an excellent opportunity to reach the home-buying public regarding voluntary improvements to new and existing homes. This program is expected to create 117 high efficiency demonstration model homes and at least 200,000 square feet of associated California Friendly landscaping.

Water saving fixtures, such as the dual-flush toilet pictured, are easily integrated into residential and commercial settings.

The Model Home Program reaches a new sector by providing incentives for developers to showcase water-saving technologies in a residential setting.

The California Friendly Landscape Rebate Program for New Homes

This pilot program provides financial incentives to builders for the installation of water-efficient landscaping, fixtures, and appliances in new homes. Co-funded by the U.S. Bureau of Reclamation, and in coordination with Eastern Municipal Water District, Metropolitan has partnered with Barratt American, John Laing Homes, KB Homes, Shea Homes, Lewis Operation Corporation, Lennar, Centex Homes, and K. Hovnanian Company to provide tangible examples of waterwise gardening to the general public. The program will help to determine water savings potential, and gauge customer acceptance for this new style of responsible landscape. Builders receive financial incentives for the installation of water-efficient landscaping and state-of-the-art irrigation technology in new homes. The program is expected to reach as many as 400 homes during its implementation in fiscal year 2004/2005. The first homes are expected to be built in the spring of 2005 and ready for sale in fall 2005.

Protector del Agua (PDA) Training

Metropolitan's residential Protector del Agua program received a revamp and new focus in 2004, allowing larger audiences greater access to basic landscape design, plant identification, irrigation, watering and fertilizing. With Metropolitan's support, training once provided by Metropolitan staff will be offered in customized versions by Metropolitan member agencies. After receiving training by Metropolitan, Home Depot staff will offer their customers short courses on landscape water-use efficiency. The residential PDA courses include demonstration displays to provide an interactive learning experience for understanding of irrigation hardware and plant-water-soil relationships.

The Professional PDA series targets landscape maintenance personnel and is taught in both English and Spanish. It consists of five 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 2004, participants in all PDA programs topped 6,700, bringing the total number of graduates since the program's inception to more than 30,000 through fiscal year 2004.

Achievements

Armstrong Garden Centers introduced their own line of native and California Friendly plants in fall 2004.

Outdoor Conservation Effort

In November 2002, Metropolitan's board authorized $2.3 million for a campaign to educate Southern Californians on the need to use water wisely, long before supplies run short. The first phase of the multi-faceted outreach effort combined advertising, publicity, community relations, and coordination with retailers and wholesalers to educate residents about the importance of efficient irrigation and native and California Friendly plants. The board allocated an additional $3.2 million in October 2004 to extend this advertising campaign, and also create a new public action campaign educating Southern Californians on efficient landscape design and irrigation that will provide reductions in water demand well into the future. The combined effort will have the flexibility to incorporate a call for urgent measures should the region's water supply conditions warrant a more serious message.

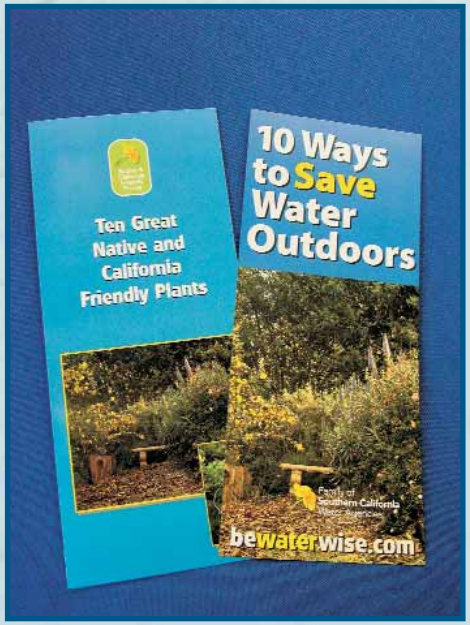
Metropolitan measured its first-year results in both quantitative and qualitative terms. The campaign spurred long-term interest toward "heritage-style" gardening, as evidenced by a Sunset magazine article calling native plants "chic," plus several related stories in the Los Angeles Times. The campaign has sparked a new focus among retailers: Armstrong Garden Centers has launched a new "Spirit of California" native plant line, Home Depot is offering classes in how to be more water efficient outdoors, while other independent retailers such as Gelson's and Whole Foods markets are joining in the educational outreach campaign. Results from three measurement tools — web site hits, a consumer attitude and awareness survey, and a study of retail water demand in the city of Los Angeles — indicate that the message is getting through and that consumers are responding.

Advertising Campaign

The region-wide campaign was based on findings that homeowners typically give their landscapes twice the amount of water needed to keep their plants healthy. The challenge was to raise awareness of residential over-watering and promote new tools – such as the watering index and available online calculator – that enable homeowners to determine how much water to use. The campaign ran from August to October 2003, and from December to February 2004. Radio, online and outdoor advertising used clever and whimsical approaches to educate residents about smarter water use, driving listeners and viewers to the bewaterwise.com web site for more information.

Family of Southern California Water Agencies

The advertising campaign gave voice to the Family of Southern California Water Agencies.



A variety of handouts were provided to retailers to help educate their customers about water saving techniques and plants.

Bewaterwise.com

The one-year-old web site receives an average of 1,000 visitors per day, and has hosted as many as 3,000 visitors a day during high volume periods. It is packed with tools to help homeowners create and maintain a California Friendly landscape, and an extensive catalog of beautiful plants suited for Southern California's climate.

Community Outreach

Metropolitan continued to build broad-based community support with the engagement of key stakeholders and opinion leaders through twice-yearly Heritage Landscape Forums. Attendees include Monrovia Nurseries, Village Nurseries, Valley Crest Companies, more than 25 cities (including Los Angeles and San Diego), and representatives from the building industry, green industry and local public agencies.

Retail Partnerships

Metropolitan has collaborated with retailers large and small to encourage the inclusion of native and California Friendly plants in their product mix, and to join the campaign by providing outdoor water conservation education through material distribution and classes. As the peak planting season began in fall 2004, Armstrong Garden Centers, Home Depot and approximately 30 independent retailers agreed to provide a series of short courses on waterwise landscaping, as well as including program materials in their stores.

City Makeover Program

Metropolitan's plan to transform high visibility public spaces into waterwise landscape showplaces took root this year, with five heritage gardens installed and six more under way. Each garden was awarded grants up to $75,000 through a competitive process that yielded 43 applicants in 2003, its first year. New applications will be accepted in 2005 for the next cycle of funding.

Educational Tools

A number of educational tools have been developed to support the outreach campaign. They include a heritage gardening guide CD-ROM that contains a searchable database of 1,000 native and California Friendly plants with information on their care and maintenance. More than 100,000 CD-ROMS have been distributed region wide. Content of the CD-ROM is also available on bewaterwise.com.

An Expert Hotline will soon be operational to provide the public with one-on-one technical information about native plant care and maintenance. The Hotline is in partnership with one of the state's premier native plant institutions, Rancho Santa Ana Botanic Garden, and will launch in early 2005. A native plant expert funded by Metropolitan will staff the Hotline, and also will develop educational materials for bewaterwise.com.

A special edition of Metropolitan's public access program "Straight from the Tap" aired on nearly 100 cable networks and featured a native and California Friendly plant theme. The program generated a lot of interest and call-ins for additional information. A "How To" segment is now being produced to track the conversion of a typical Southern California residential landscape to a waterwise landscape.

Achievements

Education

During 2004, Metropolitan and its member agencies reinforced their conservation message by making education materials, activities and events available to more than 107,000 K-12 students and nearly 1,300 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 Quality (grades 7-12), Water Politics (grades 9-12) and Water Works (grades 6-12).

Metropolitan's annual calendar features conservation-themed artwork from students living throughout the six-county service area.

Among the year's highlights:

- 2004 marked the debut of Water Times, a newspaper tailored to sixth-grade sensibilities that was developed, field-tested and printed by Metropolitan's Education Unit as part of its new sixth-grade curriculum. The sections include "Casa de Agua," a module that emphasizes water conservation choices and activities in and around the home, especially outdoors.
- More than 2,350 fourth through 12th graders participated in assemblies, field trips and classroom programs conducted by Metropolitan staff, gaining interactive, hands-on experience in the science of water.
- Metropolitan initiated a first-of-its-kind Southern California World Water Forum as a new grant and educational outreach to community colleges and four-year colleges and universities. This competitive grant program encourages research and development of water-use efficiency technology that can be cost-effectively implemented in water-stressed regions, locally or internationally. A total of $120,000 in grant funds is available. Based upon grant proposals, up to 12 school teams could receive up to $10,000 each for completing their prototype or applied research proposal. In its first year, this conservation-focused program drew interest and grant proposals from more than 40 academic institutions throughout Metropolitan's six-county service area, including Cal Tech, UCLA, USC, UC Irvine, UC Riverside, Cal State San Diego, Cal State Long Beach and a number of community colleges. Metropolitan's partners include the Bureau of Reclamation, the County Sanitation Districts of Los Angeles, the United Nations and other major federal, state, county and engineering groups. Grant winners will be selected in April 2005.
- Metropolitan's highly successful Solar Cup 2004 solar boat competition program tripled in size to 22 high school teams sponsored by nine member agencies. 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. The event attracted extensive local newspaper coverage and national media exposure, including some key morning television news programs.

In its second year, the Solar Cup program grew from six to 22 competing teams.

- In 2004, Metropolitan helped more than 2,200 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. 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 education trips are a critical element of educating our 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. Invited guests include local, state and federal elected officials and their staff, other private and public utilities, environmental organizations, business owners and organizations, community activists, community-based organizations, homeowners, parents, elementary, high school and college level educators and administrators, homemakers and senior citizen organizations.
- The Diamond Valley Lake Education Program celebrated its 10th anniversary in 2004, welcoming more than 3,500 students to the Southland's largest reservoir, where they plunged into interactive activities focusing on biology, chemistry, water quality, geography/geology, environmental and conservation issues. In all, there were 76 scheduled field trips for grades 4-8 and other outside student and community youth groups.

Inspection trips provide first-hand learning opportunities for community members and Metropolitan staff.

The Center for Water Education

Metropolitan continues to work with The Center for Water Education and The Western Center for Archaeology and Paleontology on development of their museum campus at Metropolitan's Diamond Valley Lake facility. The 18-acre museum campus will include two distinctly different facilities that work collaboratively to illustrate the rich history of water and the environment and cultural heritage of Western North America, focusing on the role that water continues to play in biological, climatic, environmental, social, and economic change in today's world.

The Center for Water Education moved from drawing board to steel frame under the watchful eye of Board Chairman Phillip J. Pace.

Achievements

Water Recycling

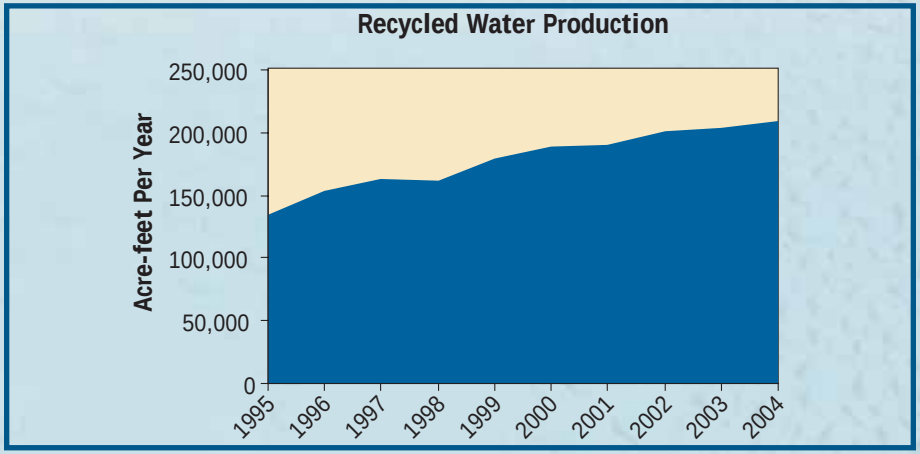
By nature, all water is recycled: Rainfall runs over land into lakes and streams; some is used by plants and animals, and some eventually flows to the oceans. It evaporates, forms clouds, and falls as rain again. The recycling described in this report is simply human use of the same water over and over again for given tasks, but in the real world it's not so simple. Water that has been used in some capacity almost always has to be treated - stripped of contaminants such as silt, bacteria and chemicals - so that it can be used again safely. Most treated recycled water is used for purposes other than human consumption, such as watering golf courses or highway medians. Recycling is an effective way to stretch our water supplies.

A Valuable Source of Supply

By the 1950s, local water agencies realized the value of recycled water as a source of supply. This vision most recently led to the development of approximately 209,000 acre-feet of recycled water for the region in fiscal year 2004.

For more than 22 years, Metropolitan has invested in regional water recycling projects, committing about $124 million to date. Metropolitan's current initiative, the Local Resources Program, was established in 1998 and includes a competitive element. Member agencies are asked to submit project proposals for evaluation, which fosters competition and encourages the development of cost-effective recycled water and groundwater recovery projects.

Metropolitan currently has funding agreements for 54 member agency water recycling efforts; 39 were in operation in fiscal year 2004. Together, these projects produced about 75,000 acre-feet of recycled water, with Metropolitan contributing about $15 million toward production in fiscal year 2004. Local agencies produced an additional 134,000 acre-feet of recycled water without financial assistance from Metropolitan.



Metropolitan has invested about $124 million in water recycling projects, including facilities serving the city of Los Angeles (above) and Las Virgenes MWD (right).

Recycled Water by the Numbers

1982 - Start of Metropolitan's Local Projects Program, now known as the Local Resources Program

75,000 - Number of acre-feet of recycled water produced in fiscal year 2004 by member agency projects receiving Metropolitan funds

$15 million - Metropolitan's fiscal year 2004 commitment to recycled water projects

$124 million - Metropolitan's 22-year investment in recycled water projects

2003 Local Resources Program Request for Proposals

In March 2004, Metropolitan selected 13 projects for funding through the Local Resources Program, out of 27 responses received under the 2003 Request for Proposals (RFP). Metropolitan plans to provide about $158 million toward development of these projects over the next 25 years. These new groundwater recovery and recycled water projects are expected to collectively produce about 65,000 acre-feet per year of local supplies and improve the region's water supply reliability by reducing demands for imported supplies.

Thirteen Local Resource Program Projects Selected in 2004

Project / Member Agency	Yield (AF/Yr)	Contribution ($/AF)
City of Industry Regional WRP / Three Valleys MWD	8,867	50 - 200
Direct Reuse Phase IIA / Upper San Gabriel Valley MWD	2,258	65-200
Groundwater Replenishment System / MWDOC	31,000	100-137
Hansen Area WRP / LADWP	3,665	12-250
IRWD Recycled Water System Upgrade / MWDOC	8,500	117
Pomona Well No. 37 / Three Valleys MWD	1,100	100
RW Distribution Extension / Las Virgenes MWD	225	155
RW Distribution Ext. Malibu Golf Course /Las Virgenes	300	175
RW Pipeline Reach 16 / Eastern MWD	820	82
Sepulveda Basin WRP Phase IV / LADWP	546	125
South Valley Water Recycling Project / LADWP	1,000	175
Tapo Canyon WTP / Calleguas MWD	1,445	100
Wells No. 7&8 / Torrance	5,189	160

WRP = Water recycling project RW = Recycled water WTP = Water Treatment Project

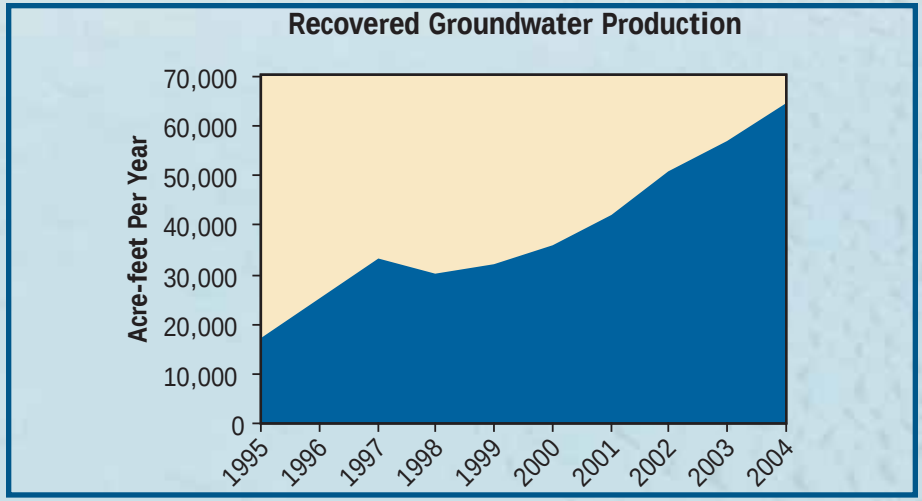
Achievements

Groundwater Recovery

There are many groundwater wells that are no longer viable due to chemical or other contamination, or are just too salty to use. When groundwater in storage becomes contaminated, water agencies face a choice. They can rely more heavily on imported supplies, or they can recover the water by building a treatment plant.

These water recovery operations pump groundwater that may have high levels of these chemicals or salts and puts it through extra treatment steps to make it useable. Though polluters may be identified and compelled to share the financial burden, treatment plants can be quite costly.

In fiscal year 2004, Metropolitan helped groundwater recovery efforts by contributing $8 million toward member agency groundwater recovery projects, bringing to $41 million the amount that Metropolitan has invested over the past 13 years. Twenty projects are under contract, of which 18 are in operation recovering about 43,000 acre-feet of water in fiscal year 2004. In addition, local water agencies produced another 21,000 acre-feet of recovered groundwater without financial assistance from Metropolitan, bringing the regional total to 64,000 acre-feet for the year.



Groundwater Recovery by the Numbers

13 - Number of years Metropolitan has been funding groundwater recovery projects

$8 million - Metropolitan's fiscal year 2004 contribution

$41 million - Metropolitan's total investment to date

20/18 - Twenty is the number of agreements between Metropolitan and member agencies to fund recovery projects; 18 is the number of projects in operation

64,000 - Number of acre-feet of contaminated groundwater recovered throughout the region in fiscal year 2004

4,800 - the annual acre-foot capacity of the brand new San Juan Basin Desalter Project

Groundwater Conjunctive Use

Conjunctive use means storing water in groundwater basins for later use during shortages or drought. Groundwater basins in Metropolitan's service area yield an annual average of 1.3 million acre-feet. The water withdrawn from these underground reservoirs is replenished both naturally and artificially. Since the 1950s, Metropolitan has pursued conjunctive use arrangements with local agencies and supported a wide variety of programs.

Conjunctive Use Plays a Significant Role in California Water Management

Conjunctive use programs are an integral part of Metropolitan's central planning document, 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 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.

New Storage Agreements

To date, Metropolitan has utilized Proposition 13 funds to develop five contractual groundwater storage programs, with three additional programs in the planning stages. Metropolitan has entered into agreements with the following member agencies for the following groundwater basins:

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

These five agreements will provide a total of 185,000 acre-feet of storage. Some of these agreements also provide funding for treatment of contaminated groundwater, ensuring that stored water can be readily used. In addition, Metropolitan is finalizing additional agreements to develop three more conjunctive use programs within Metropolitan's service area. Collectively, these programs will store approximately 194,000 acre-feet of water for dry-year needs in Southern California.

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. 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. The first two phases of this program are scheduled to come online by 2005. This 210,000 acre-foot storage program should be fully operational with the completion of all necessary facilities by 2010.

To date, Metropolitan has developed conjunctive use programs with storage capacity for 395,000 acre-feet, enough to provide dry-year supplies of more than 130,000 acre-feet for each of three consecutive years. As of September 2004, more than 110,000 acre-feet of dry-year water had been stored for Metropolitan in Southern California groundwater basins.

Seawater Desalination

Taking the salt out of salty water is a strategy that dates back to ancient Greece. In arid parts of the world, desalination is one of the only ways to get usable water, even though it takes a lot of energy, which makes it an expensive endeavor. The world of desalination is not a Buck Rogers future, and has many of the conflicts and tradeoffs experienced with other alternatives. But with advances in technology, it's getting cheaper.

Seawater Desalination Program

In 2004, Metropolitan's board adopted an IRP Update that includes a target of 150,000 acre-feet per year for seawater desalination projects to meet future demands. Currently, Metropolitan is working with five member agencies — 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 — to develop projects that collectively could produce about 126,000 acre-feet per year. A review committee comprised of Metropolitan staff and outside water resource specialists evaluated these programs.

This continues an effort begun in August 2001, when Metropolitan initiated the Seawater Desalination Program to support the development of cost-effective seawater desalination projects and increase water supply reliability. Metropolitan offers financial incentives up to $250 per acre-foot of production.

Seawater Desalination Research

Metropolitan is working with its member agencies to develop a coordinated, cooperative agenda for seawater desalination research. To help launch member agency research efforts, Metropolitan is contributing $250,000 that has been divided equally among five member agencies that submitted proposals in response to an RFP seeking seawater desalination production. Member agencies are using the money to conduct research, including site assessment and feasibility studies. In 2004, Metropolitan executed funding agreements with the City of Los Angeles, City of Long Beach, and San Diego County Water Authority to provide $50,000 to each agency toward their research efforts. Agreements for West Basin Municipal Water District and the Municipal Water District of Orange County are expected to be complete by early 2005.

Desalination by the Numbers

2001 - Year Metropolitan issued a Request for Proposal for seawater desalination projects

Five - Number of proposals received

126,000 - Number of acre-feet that could be produced by five proposed projects

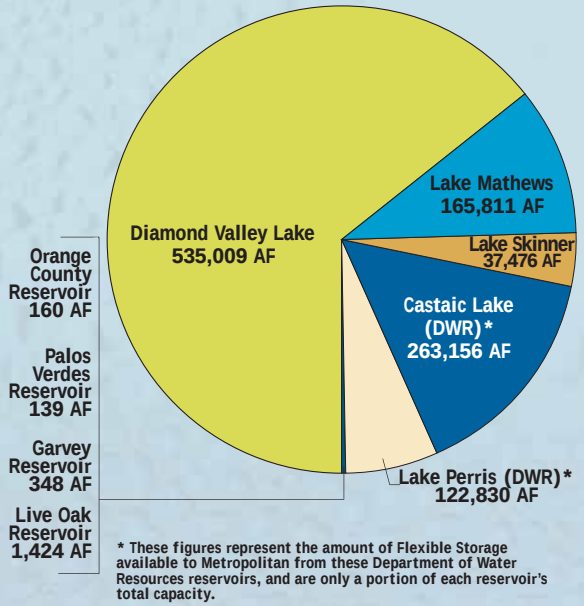
$250,000 - Board contribution to be split among five member agency projects to conduct research leading to full project implementation including site assessment and feasibility studies

150,000 - Number of acre-feet of desalted seawater that is Metropolitan's new planning target

City of Long Beach Water Department developed a two-stage nanofiltration process to remove salt from seawater while using about one-third less energy than traditional desalination.

Metropolitan Water Stored in Metropolitan & DWR Reservoirs in Southern California

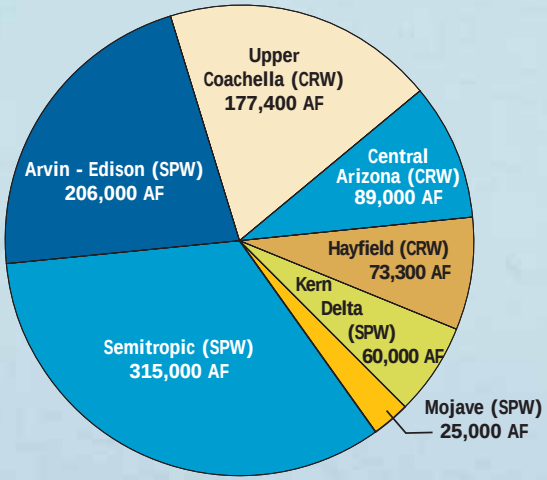
Total Storage : 1,126,353 AF
(as of December 2004)



* 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.

Metropolitan Water Stored in Groundwater Basins Outside its Service Area

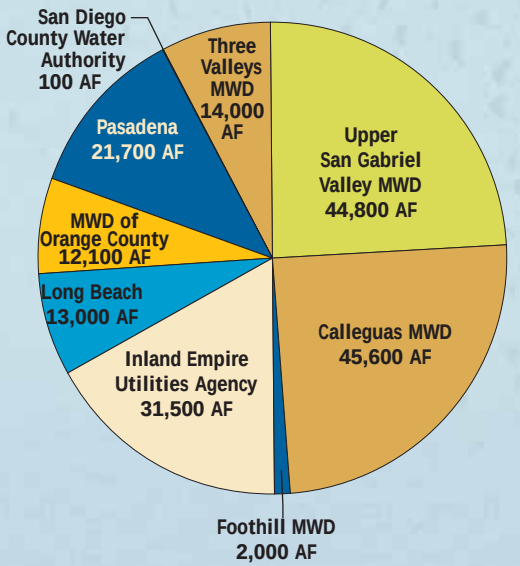
(as of December 2004)



Total Colorado River Water (CRW) Groundwater Storage:	339,700 AF
Total State Project Water (SPW) Groundwater Storage:	606,000 AF
Total MWD Groundwater Storage Outside its Service Area:	945,700 AF

Metropolitan Water Stored in Southern California Groundwater Basins and Local Agency Reservoirs*

Total Storage: 184,800 AF
(as of December 2004)



* Does not include member agency purchases of replenishment water

Colorado River Aqueduct & State Water Project Programs

Colorado River Aqueduct Programs

Already facing a mandated reduction in California's draw from the Colorado River, Metropolitan confronted record drought conditions and declining water levels in reservoirs along the Colorado through 2004. In response, Metropolitan sought creative solutions that would delay or prevent shortage conditions for the Colorado River Basin states, while bolstering its remaining Colorado River supply with a number of storage, conservation and transfer agreements.

Metropolitan recently completed significant repairs to the Colorado River Aqueduct in order to maintain its conveyance reliability.

Quantification Settlement Agreement (QSA) Implementation

Metropolitan has worked hard to find equitable solutions for the division of Colorado River water.

The year 2004 marked the first full year of implementation of the Quantification Settlement Agreement, which was among several documents executed in October 2003 by representatives from Metropolitan, the Imperial Irrigation District (IID), and Coachella Valley Water District (CVWD). Parties involved include the San Diego County Water Authority (SDCWA), the California Department of Water Resources (DWR), the California Department of Fish and Game, the U.S. Department of the Interior and the San Luis Rey Indian Water Rights Settlement Parties. The QSA established individual water budgets for IID and CVWD, making new water transfers viable on the Colorado River. The QSA includes a conservation-based water transfer from IID to SDCWA, which began in 2003 and will eventually ramp up to 200,000 acre-feet per year. While the water is being obtained by SDCWA from IID, the transfer helps reduce Metropolitan's demands and increases water supply reliability for the region.

During the past year, in addition to Metropolitan's basic apportionment of 550,000 acre-feet, Metropolitan received nearly 82,000 acre-feet of water from its longstanding conservation program with IID and 20,000 acre-feet of conserved water provided through the transfer from IID to SDCWA (Metropolitan supplies were reduced by the amount of water needed by the Secretary of the Interior to meet certain needs of holders of Present Perfected Rights).

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

In August 2004, Metropolitan and the Palo Verde Irrigation District executed a 35-year agreement to implement their 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.

Project implementation was anticipated to begin in January 2005. In addition to boosting Metropolitan's water reliability, the program is also designed to stabilize the Palo Verde Valley economy. Like the pilot Metropolitan/PVID program effort that took place from 1992 to 1994, the farmland can remain as prime agricultural acreage and will be neither "retired," nor converted to another use. Landowners will receive a one-time payment of $3,170 per acre that is allocated for each farmer's maximum non-irrigated acreage, and an additional annual payment of $602, 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 being selected by Palo Verde Valley community representatives, and the effectiveness of these programs will be reviewed every five years.

Colorado River Drought Management Actions

2004 marked the fifth consecutive year of drought on the Colorado River. During the year, Lake Mead dropped to its lowest level in more than 35 years, while Lake Powell dropped to its lowest level since the initial filling of the reservoir in 1969. Metropolitan teamed with representatives from the Colorado River Basin states to draft a drought management plan that identified actions to reduce the impacts of ongoing drought and help the reservoirs recover. Once implemented, the plan should delay or possibly prevent the onset of shortage conditions on the Colorado River.

CRA Storage, Transfer & Exchange Programs

In addition to the QSA transfer programs, Metropolitan has invested in a number of storage programs along the Colorado River Aqueduct system to help augment its dry-year supplies.

Upper Coachella Valley Groundwater Storage Program

In cooperation with Desert Water Agency and Coachella Valley Water District, Metropolitan has access to 600,000 acre-feet of groundwater storage space in the Upper Coachella Valley adjacent to the Colorado River Aqueduct. Under the agreement with Desert and Coachella, Metropolitan releases water for storage when Colorado River water is available and suspends deliveries as needed through agreements with the agencies. This agreement and storage program provided Metropolitan about 45,000 acre-feet of additional supplies in 2004.

Hayfield Groundwater Storage Program

Due to ongoing drought conditions on the Colorado River, the development of the Hayfield Groundwater Storage Program has been deferred for two years. Once the Colorado River drought ends, however, Metropolitan will have a need for additional Colorado River storage and plans to complete development of the program, which will eventually have a storage capacity of about 500,000 acre-feet.

Storage and Interstate Release Agreement

In October 2004, Metropolitan's board approved a new storage and interstate release agreement with the Southern Nevada Water Authority. Under this agreement, Metropolitan may divert additional supplies unused by Nevada in a given year that would be returned to Nevada in a future year. In 2004 Nevada requested that Metropolitan divert 10,000 acre-feet.

State Water Project

Metropolitan's Participation in CALFED

Californians celebrated the federal enactment of a long-awaited CALFED authorization bill in 2004. 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. This campaign 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 issues of reliability and quality of supplies. 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.

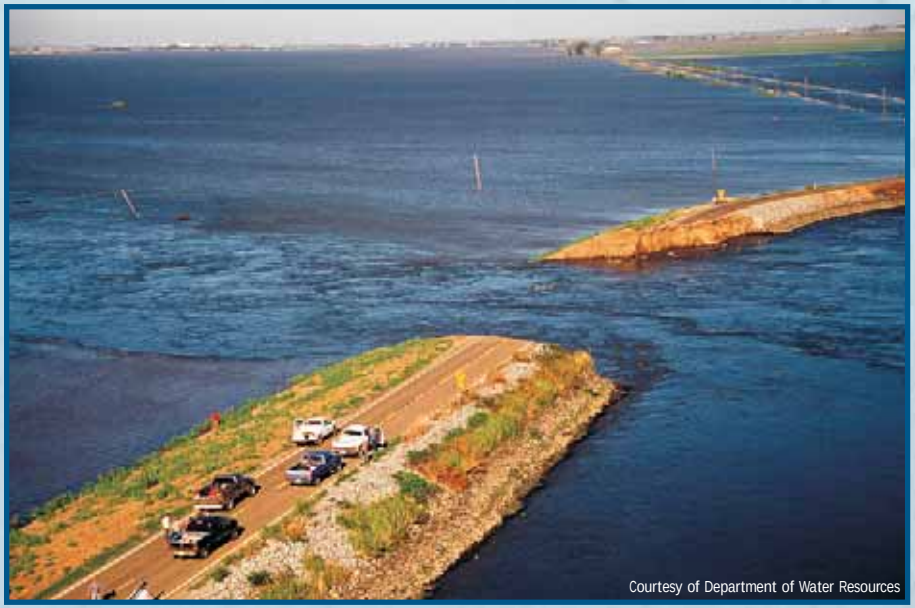
The fall 2004 passage of the $389 million CALFED authorization bill was the latest step in a bipartisan tradition that arose directly out of the 2000 Record of Decision, a landmark accord backed by cities, farmers and environmentalists.

In 2002, the California Legislature passed the California Bay-Delta Authority Act to provide a long-term governance structure to coordinate the 20 state and federal agencies involved in the program, and to ensure direct involvement of public representatives. California voters have passed approximately $5 billion in state general obligation bonds to support CALFED-related projects. This includes $1 billion from Proposition 204 in 1996; $2 billion from Proposition 13 in 2000; and another $2 billion from Proposition 50 in 2002. As 2004 drew to a close, Metropolitan began work 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.

Additional 2004 SWP Milestones

In 2004, other important milestones for the SWP included:

- A broadly supported plan that would begin implementing some of the key elements of the 2000 Record of Decision went before the Bay-Delta Authority for public hearings. Key elements will improve circulation and result in a major reduction in salinity and bromide levels in the Bay-Delta, and also allow the state and federal water projects to operate more effectively together to improve water supply reliability and water quality while protecting the health of the Bay-Delta ecosystem.



California was reminded of the fragility of the Bay-Delta system with this 2004 levee break at Jones Tract.

- Continued development of the South Delta Improvement Program that would allow for more flexible pumping capacity for Metropolitan at the SWP Banks Pumping Plant. As envisioned in the 2000 Record of Decision, it would provide a modest increase of 2 to 5 percent, while advancing the ability to transfer water during environmentally benign periods, including supplies legally mandated under the Sacramento Valley Phase 8 Settlement
- A fourth 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
- Reaching nearly $400 million to date in funding for more than 400 environmental projects within the Bay-Delta watershed

In future dry years, Metropolitan can tap into more than 200,000 acre-feet of stored water in Castaic and Perris reservoirs to supplement the SWP water supplies allocated to Metropolitan. Under that agreement, water would have to be placed back into storage within five years.

State Water Project Water 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 2004, Metropolitan drew more than 300,000 acre-feet from San Luis Reservoir and groundwater storage programs with Semitropic Water Storage District and Arvin-Edison Water District, steps that greatly enhanced Southern California's water reliability and reduced demands on the Bay-Delta during environmentally sensitive, drier periods. Metropolitan had more than 650,000 acre-feet stored in existing storage programs in the San Joaquin Valley at the end of 2004.

Water Transfers

Metropolitan considered acquiring water transfer partnerships for 2004, but ultimately decided not to do so due to favorable water supply conditions. Instead, Metropolitan initiated efforts to secure up to 125,000 AF of one-year water transfer option agreements for 2005. The agreements would provide additional resource options to mitigate potential dry-year conditions in 2005, consistent with Metropolitan's water resource strategy outlined in its 2003 Integrated Resources Plan Update.

Semitropic Water Storage District

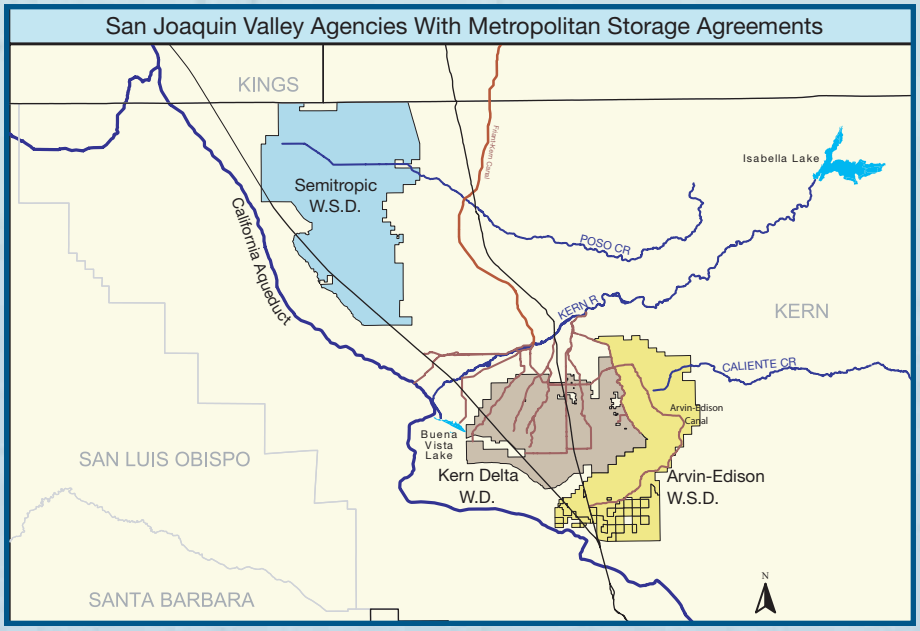
This program allows Metropolitan to store a portion of its available SWP water in the groundwater basin underlying the Semitropic Water Storage District in Kern County. The storage and withdrawal capacities of the program are shared with others – Metropolitan's share equals 35 percent. Over the next 33 years,

The San Francisco Bay - Sacramento/San Joaquin Delta (Bay-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 tracts and 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.

the program will allow cyclic storage and withdrawal of 350,000 acre-feet. In 2004, Metropolitan withdrew nearly 100,000 acre-feet from this program. The storage balance as of December 2004 was about 315,000 acre-feet.

Arvin-Edison Water Storage District

In 2004, Metropolitan withdrew 45,000 acre-feet from a water bank established with the 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, dry-year withdrawals could average between 40,000 to 75,000 acre-feet per year through groundwater extraction and/or entitlement exchanges. This storage capability increases Metropolitan's water supply reliability. The storage balance as of December 2004 was 206,000 acre-feet.



Kern-Delta Water District

During 2004, 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 2004 was 60,000 acre-feet.

San Bernardino Valley Municipal Water District

In 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 and has the ability to purchase much more. Under the 2003 agreement, Metropolitan can buy water provided to San Bernardino Valley as part of San Bernardino's annual State Water Project allocation. Depending on SWP conditions, approximately 20,000 to 80,000 acre-feet per year would be available for purchase.

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.

The storage balance as of December 2004 was nearly 25,000 acre-feet.

Salinity Management Action Plan

In 2004, Metropolitan continued to support the region's effort to reduce the impact of salty water on Southern California's economy and water resources, as part of a comprehensive 1999 plan devoted to salinity management.

The 500 Milligram Standard

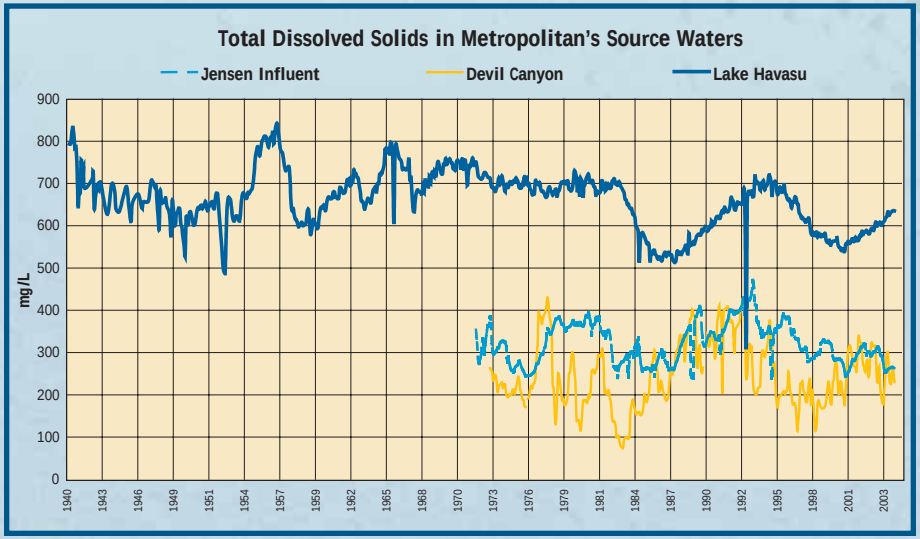
Salinity means more than just salt. It's a collection of dissolved minerals—calcium, magnesium, sodium, sulfate and chloride. That's why salinity is sometimes referred to as total dissolved solids. Several years ago, Metropolitan's board of directors adopted an action plan setting a salinity target of 500 milligrams per liter—anything above 300 mg/L is considered hard water. The reasons were many. Every 100 milligrams of salt per liter in the water supply means many millions in extra costs for the Southern California region. Traditionally, the Colorado River has had salinity levels topping 700 milligrams per liter – that's like having 700 pounds of salt delivered to your doorstep every year. Water with salinity levels above 1,000 mg/L is of questionable use for irrigation and industrial customers. As salinity increases, plumbing fixtures and appliances wear out faster. Industry spends more money fixing boilers and cooling towers, while farmers experience reduced crop yields. Water high in salts is not good for recycling or groundwater projects. Limiting the amount of salt in our water benefits Southern California's economy and its environment. Reducing salt loads in imported water supplies allows the region to realize savings of millions of dollars in avoided treatment and impact costs.

The Problem

High salt concentrations in our drinking water cause adverse user impacts. High salinity can impair water recycling and degrades groundwater resulting in damage to Southern California's economy and environment. High salinity can also cause premature replacement of household plumbing and appliances corroded by salt. The Metropolitan/Bureau of Reclamation 1999 Salinity Management Study found that under 1999 conditions, the region was experiencing an annual salt buildup of approximately 600,000 tons in its groundwater.

Challenges

In 1999, imported water contributed about half of the region's salt, the other half came from local sources. On a long-term basis, the Colorado River constitutes Metropolitan's highest source of salinity, averaging about 700 milligrams per liter at Lake Havasu. The State Water Project provides Metropolitan with lower salinity water, averaging 250 mg/L on the East Branch (Devil Canyon) and 325 mg/L on the West Branch (Jensen Influent). SWP water can be used to blend down CRA concentrations. The graph below shows how the level of total



Water Quality Programs

dissolved solids — the standard measure of salinity — has varied within Metropolitan's imported supplies since 1940. Some peaks and valleys are associated with hydrologic conditions. The current upward trend is the result of the past five years of drought in the Colorado River Basin.

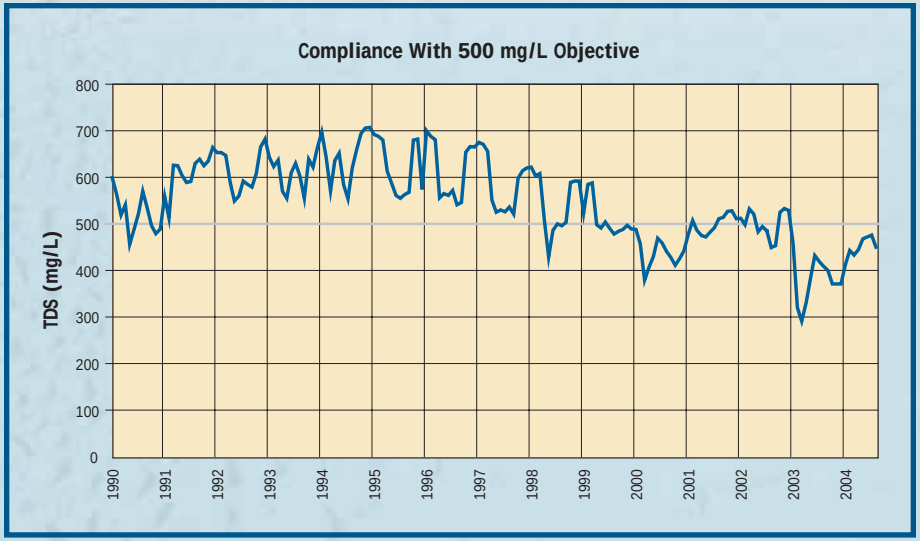
The West Branch of the SWP shows higher concentration because it has local streams entering Lake Pyramid that have elevated salinity levels. There are varied sources that increase salinity levels in recycled water used for irrigation. These include:

- Naturally occurring salts, such as geological formations that "dissolve" in the presence of water
- Salt added by urban water uses
- Agricultural drainage
- Dairies and other animal waste sites
- Infiltration of brackish groundwater into sewers

Imported Supply Blending

Cooperation among Metropolitan and other water and wastewater agencies throughout Southern California is essential to pursue a reduction in salinity, and since 1999, Metropolitan has met its treated water salinity objective of 500 mg/L. (See compliance chart on page 29.)

Metropolitan's agreement with the San Bernardino Valley Municipal Water District to coordinate the use of existing conveyance facilities and SWP water supplies also improves water quality. This intertie allows Metropolitan to help maintain the proper blend of CRA and SWP waters to meet salinity objectives.



Interagency Coordination

Metropolitan is actively working with several groups focused on improving salinity management:

- Colorado River Basin Salinity Control Forum
- Southern California Salinity Coalition
- Desalination Research and Innovation Partnership
- Multi-state Salinity Coalition
- WateReuse Association

Colorado River Basin Salinity Control Program

Since 1973, the Colorado River Basin Salinity Control Forum has developed and implemented salinity control measures that resulted in the control of roughly 800,000 tons of salt per year, or a salinity reduction of 65 mg/L in the Colorado River. That salt reduction results in reduced damages of about $45 million per year to Southern California.

Groundwater Desalters

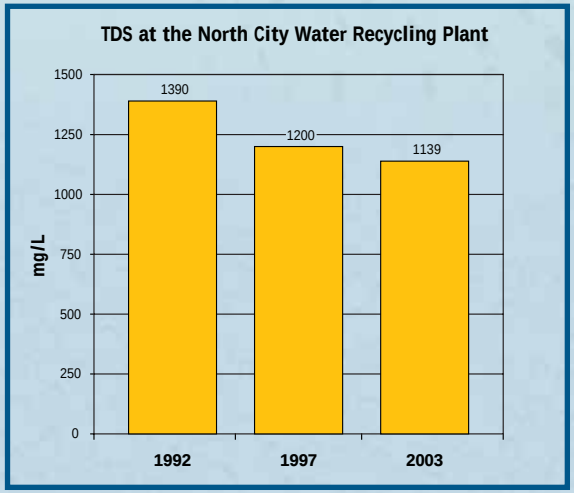
At the local level, agencies have expended major efforts to construct groundwater desalting projects, specifically in the Santa Ana River Watershed along the Chino Basin. In 2002, state voters passed Proposition 50, which earmarked funding for the construction of brackish groundwater desalters that would measurably improve the quality of local water supplies. Even more desalters can be constructed once the region comes up with a strategy to transport and dispose of brine concentrate from desalting plants.

South Delta Improvement Program

Metropolitan has been working with DWR, the Bay-Delta Authority and other agencies to pursue development of improvements in the Sacramento-San Joaquin Delta. Several of the pursued actions may produce a 10 to 20 percent reduction in salinity levels for SWP supplies.

Local Salinity Management

Local agencies are trying to reduce salinity in local supplies through groundwater desalters, wastewater collection system improvements and water softener regulations. One successful example involves the San Diego North City Water Recycling Plant, where improvements to the sewer system have reduced brackish groundwater infiltration. That step, coupled with reduced salinity in San Diego's imported supply from Metropolitan, has reduced the salinity in the plant influent by about 250 mg/L, as shown in the chart to the right.



Southern California Salinity Coalition

In 2004, the Southern California Salinity Coalition launched a collaborative study to develop viable strategies for salinity reduction throughout Southern California. The Salinity Reduction Study is being conducted in partnership with the Water Quality Association/Pacific Water Quality Association, the National Research Institute, the Claremont Graduate University, and the Inland Empire Utilities Agency (IEUA). Focusing on the IEUA's service area, the study would draw from research conducted by the American Water Works Association Research Foundation to study and characterize the sources of salinity in wastewater throughout the Western United States.

Water Softener Regulation Legislative Actions

Assembly Bill 334 became effective on January 1, 2004 and implements a key recommendation of the 2002 Recycled Water Task Force established by the California Legislature. AB334 gives local communities greater ability to protect their own water supplies and streams from excessive quantities of salt added to sewer systems by self-regenerative water softeners. The bill allows local agencies to limit the availability or prohibit the installation of self-regenerative water softeners if it is a necessary means of achieving compliance with various regulations.

Adequacy of Existing Salinity Policy and Action Plan

Metropolitan considers its existing salinity policy and action plan as effective responses to current conditions. However, these guidelines would benefit from a review that would assess future system, regulatory and source water changes. With record setting drought conditions, Colorado River salinity levels are on the rise. As established agriculture-to-urban transfers ramp up, the Colorado River Aqueduct will begin to refill. The addition of this higher salinity Colorado River water will place greater reliance upon State Water Project supplies to achieve Metropolitan's TDS blend objective of 500 mg/L. Completion of the Inland Feeder and future expansions of the East Branch of the California Aqueduct will provide hydraulic capacity to convey lower-salinity SWP water to key internal Metropolitan blend points, including Diamond Valley Lake. Ongoing ozone retrofits to Metropolitan's treatment plants will better position Metropolitan to blend water without violating water quality standards for disinfection byproducts. The timing and extent of South Delta improvements will also have bearing on the future salinity concentrations of SWP water. Local agencies are taking steps to reduce salt levels of recycled water and groundwater. All of these in-progress events reinforce the notion that the region's salt balance, and facilities needed to influence it, will be better understood in the next few years. This warrants a careful review of regional salinity management strategies.

Ozone Retrofit Activities

In July 2003, Metropolitan's board authorized the use of ozone as the primary disinfectant at all five Metropolitan treatment plants. Previously, only two plants that treat 100 percent State Water Project supplies had been slated for this treatment upgrade to meet new disinfection byproducts regulations that protect water from potentially harmful combinations of substances that form when chlorine-based disinfection is used. The Henry J. Mills Treatment Plant in Riverside went on-line with ozone in October 2003 and the Joseph Jensen Treatment Plant is slated for 2005 completion. With the board's action, the Robert A. Skinner Plant near Hemet, the F.E. Weymouth Plant in La Verne and the Diemer Plant in Yorba Linda will all be converted to ozone facilities. Another benefit of ozone treatment is better tasting and smelling water.

Ozone treatment is planned for all five of Metropolitan's water treatment plants.

Southern California Regional Drinking Water Quality Planning Project

In 2004, Metropolitan initiated 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/Chino Basin, San Diego County Water Authority, Mojave Water Agency and the Mono Lake Committee. The project is funded by a grant from the CALFED Drinking Water Quality Program. The objective of the planning effort is to develop strategies for achieving CALFED drinking water quality goals that consider the unique needs of the Southern California region. The project includes the development and testing of preliminary strategies that will integrate source water quality improvement projects in the Delta and SWP system with local projects to improve drinking water quality. A final report for the project will be completed by June 2005.

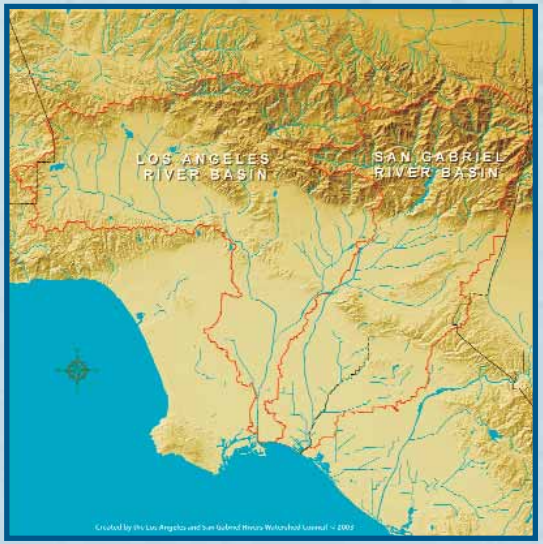
Metropolitan invests a lot of resources and time into water quality planning and improvements.

Watershed Activities

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 2004, Metropolitan continued to provide seed money for local watershed 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 2004, Metropolitan tracked the efforts of the California Watershed Council to integrate watershed management objectives into the functions of the existing state resource management agencies, and continued to provide input to the implementation of the CALFED Bay-Delta Watershed Program.



Watersheds serving the Los Angeles and San Gabriel rivers.

Water Quality Programs

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 watersheds is a viable means of augmenting water supply without adversely affecting groundwater 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 fourth year and currently monitoring six sites with different land uses, analyzing water quality of storm runoff, soil, and groundwater. Thus far, there are no trends indicating that stormwater infiltration is negatively impacting groundwater quality. Computer modeling work is now under way 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.

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 Nevada Mountains. 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 continued to participate in the Sacramento River Watershed Program's implementation of its water quality monitoring program.

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 of the effort is to develop an improved regulatory framework for protecting source water quality in the Bay-Delta and its tributaries. In 2004, technical studies were initiated to evaluate drinking water quality conditions in the watershed.

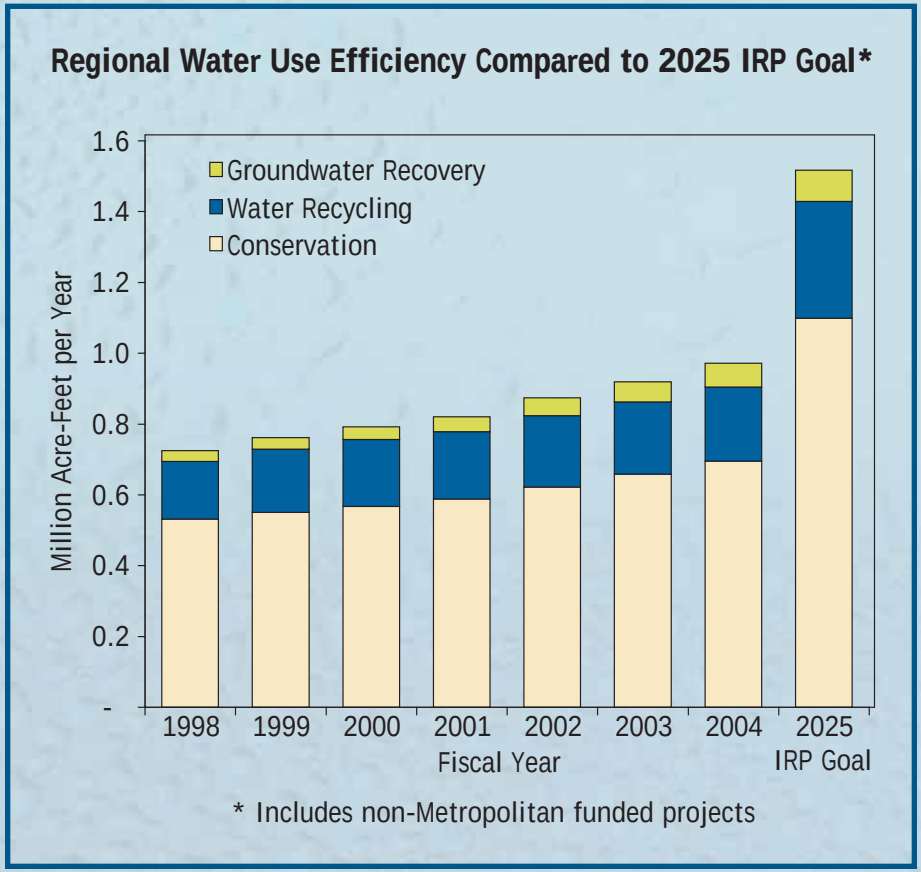
Metropolitan also started participating in a partnership of Sacramento Valley agricultural interests and urban water agencies to address water quality concerns associated with the Colusa Basin Drain in the Sacramento River watershed. The project will evaluate alternatives for managing the Colusa Basin Drain to improve Sacramento River water quality. The first phase of the study is expected to be complete in 2005.

Metropolitan continued to pursue water quality exchange partnerships with agricultural entities in the San Joaquin Valley. These partnerships seek to improve the quality of water Metropolitan receives via the California Aqueduct by exchanging Metropolitan's State Water Project supplies for higher quality Sierra Nevada water supplies. In return, Metropolitan would invest in local infrastructure to improve water supply reliability for San Joaquin Valley agricultural interests.

The Sacramento-San Joaquin Delta.

Southern California's Updated Integrated Resources Plan

During the spring of 2004, Metropolitan and its member agencies introduced the Integrated Resources Plan Update to the public through a series of outreach meetings. Between April and June, Metropolitan staff and member agencies conducted a total of 15 outreach meetings. These meetings provided an opportunity to share the message of the IRP Update, as well as to receive valuable input from member agencies and the public.



Among the highlights – when it comes to saving water, Southern California is exceeding the projections laid out in the original IRP, thanks to some of the more progressive water conservation programs and technology in the West. To build on that success, Metropolitan aims to exceed the 2020 conservation target of 882,000 acre-feet per year set out in the 1996 IRP. The IRP Update increases the 2020 target to 1,028,000 acre-feet, and adds a 2025 target of 1,107,000 acre-feet. This target includes savings gained from Metropolitan and member agency funded programs, plumbing codes, and conservation-oriented water rates since 1980. In order to support the revised conservation targets, Metropolitan will continue to support member agencies in developing new, innovative conservation programs.

The outreach meetings also focused on the regional outlook for local water recycling and seawater desalination efforts. The 1996 IRP set targets for water recycling and groundwater recovery projects at 500,000 acre-feet by 2020. Although Metropolitan's projections of water recycling and groundwater recovery have exceeded the 1996 IRP goals, these targets remain in effect for the IRP Update. The 1996 IRP also recognized seawater desalination as a potential resource, but did not set targets for future development because of the high cost estimates in the mid-1990s. Improvements in membrane technology and new site selection strategies have reduced the costs of seawater desalination, and may make it a potential supply option for the region. In 2001, Metropolitan issued a competitive RFP for seawater desalination projects with the goal of developing up to 50,000 acre-feet per year. The IRP Update recommends a supply buffer of 500,000 acre-feet, half of which is to come from local resources. This increases 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 reliability of local and imported supplies.

Community Partnering Program

Watershed management/protection and California Friendly garden programs remained the primary focus of Metropolitan's Community Partnering Program in 2004. Using grass roots support, the CPP empowers Southern Californians to become educated and engaged in water resources issues by targeting district resources to community-based groups, nonprofit organizations and professional associations. Created in 1999, the program pays for sponsorships, memberships and selected activities that include educational collaborations and policy forums. CPP sponsorship contributions of $482,000 for fiscal year 2004-2005 were divided among 98 projects

The dedication of the California Friendly Garden Center at Crescenta Valley Water District is one beneficiary of the 2004 CPP grant program.

Each CPP project has a unique twist. However, all share the ability to reach people with a message about water.

The following list represents organizations that have received CPP sponsorships, primarily for watershed management and landscape education programs.

Agua Hedionda Lagoon Foundation

Educational exhibit

The CPP sponsorship helps support an educational exhibit allowing local schoolchildren to learn about coastal lagoon ecology and watershed environments at a new Discovery Center in Carlsbad.

Casa Romantica Cultural Center and Gardens

Curriculum development and signage

The CPP helped this San Clemente non-profit organization enhance its curriculum for elementary schoolchildren while upgrading interpretive exhibits and signage for a California Friendly plant garden.

Chula Vista Nature Center

Water conservation exhibit

Thanks to the CPP, the Nature Center is replacing temporary displays with permanent exhibits that engage the public in water conservation issues and watershed educational outreach.

City of Chino Hills

Water cycle model

With the CPP's support, Chino Hill's new educational exhibit focuses on the interdependence between the natural water cycle and the influence of humans on water resources, using lights, pumps, colored water, PowerPoint software and digital photos to show how conservation prevents failure of water wells.

Discovery Science Center

Interactive educational Water Discovery Park

The CPP is supporting interactive education exhibits, demonstrations, science shows and outreach that will help position this park – located in Santa Ana – as the regional hub for Orange County's water resource science education.

Eastern Municipal Water District

Virtual reality operational tour

A CPP sponsorship helps fund a virtual tour of water resources facilities that provides insights on the filtration process and prompts discussion of regional water issues affecting the Inland Empire.

Friends of Baldwin Hills

Docent and steward training program

CPP funds help the Friends of Baldwin Hills train people to serve as habitat stewards, and as docents for native plant walks. The sponsorship enhances community outreach and education and also provides printed materials for native plant workshops.

Friends of Shipley Nature Center

Exhibits, signage and literature

This second year of a five-year project reawakens an 18-acre Huntington Beach park once overgrown with exotic and invasive species. Exhibits, signage and literature educate the public and students alike on water usage, water quality, conservation and native plant identification.

Hurst Ranch Historical Foundation

"Water: Lifeblood of Ranching"

CPP supports this West Covina interpretive museum exhibit that explains the historical impact of water on the expansion of the Southern California lifestyle and teaches schoolchildren garden irrigation conservation practices.

Olive Branches

Native plant reading and educational garden

This CPP sponsorship of a native plant campaign and water resources curriculum development at Santa Monica's Edison Learning Academy will enhance the bilingual earth science program as well as a native plant reading and educational garden.

Olivenhain Municipal Water District

Model home water conservation comparison

The CPP supports a creative native plant public outreach campaign to publicize water-wise landscaping with storyboards, signage and brochures at local model homes in Encinitas, including a side-by-side water conservation comparison of a traditional lawn versus native plant landscaping.

Pasadena Museum of History

"Flowing Water, Fruitful Valley" educational exhibit

The exhibit features the prominent role water has played in the history and development of Pasadena and the West San Gabriel Valley.

Thirty-Second Street Canyon Task Force

Community outreach & education

This sponsorship supports 32nd Street Canyon Task Force's watershed education, water conservation and water pollution prevention programs for kindergarten through fifth-grade schoolchildren at Brooklyn Elementary School in San Diego. It aims to train future water ambassadors through a native plants garden and art project, storm water pollution prevention classes, water quality testing, biodiversity discussions, watershed cleanups, and lessons in water geography and California water history.

Windows on Our Waters

Tidepool Cruiser Environmental Program

With CPP support, inner city students with limited access to the ocean shoreline get direct exposure to the importance of maintaining a healthy, clean environment and watershed. The grant expands presentations to additional elementary schools in the Santa Ana Unified School District.

Amigos de los Rios

"Know Your Natives" outdoor education program

This supports the development of the native plant curricula and lesson plans for the outdoor education program in Rio Vista Park, located along the Rio Hondo River in El Monte. This after-school program targets Rio Vista Elementary School students.

Bonita Unified School District

Native plant campus

This provides promotional material and signage to publicize two acres of native plants on the Bonita High School campus in San Dimas. This hands-on environmental tool will provide education on water conservation issues, new brochures and an energized outreach campaign.

Public Participation

Charter Oak High School

"Environmental Systems Landscape Design" project

This sponsorship supports appropriate signage and brochures for the native plant and California friendly landscape project adjacent to a high visibility campus library in Covina.

City of San Diego

Hispanic community outreach

A partnership with the San Diego Natural History Museum will extend its water resources educational outreach program into the Hispanic community.

City of Yorba Linda

California Friendly garden

Sponsorship supports the signage and literature to identify native plants within the Yorba Linda Public Library's California Friendly garden.

Cucamonga Valley Water District

Student environmental festival

This supports hands-on water resources activities at the Alta Loma School District environmental festival. Highlights include "Water Conservation Jeopardy," an edible aquifer, plant and garden demonstrations, pollution solutions, and "World of Water" discussions.

El Modena High School

Landscape heritage garden

This grant supports one of the Southland's oldest high school California native plant gardens, located in the city of Orange. It provides for additional signage, literature and curriculum development.

Elsinore Valley Municipal Water District

Community water festival

In conjunction with 10 other public agencies, the CPP sponsors water resources hands-on educational activities in western Riverside County.

Pierce College Foundation

Native plant outreach program

CPP funds provide signage and brochures to enlighten visitors at the botanical garden of Pierce Community College in Woodland Hills.

Friends of the Los Angeles River

"The State of the River" report

CPP supports this annual publication, which allows river-adjacent communities to assess information concerning the health of the Los Angeles River.

Los Angeles County Education Foundation

Outdoor Science School program at Blue Sky Meadow

This sponsorship pays for curriculum materials involving hands-on activities at a weeklong science program in Big Bear City, giving low-income, fifth-grade students the real-world opportunity to explore and study science in the field, while building environmental awareness and promoting stewardship of natural resources.

Pacoima Beautiful

"Wash This!..." a Pacoima youth education and restoration project

This supports an outreach campaign and development of educational materials for area residents that touches on water quality issues and misuse of the Pacoima Wash.

Partners of Parks/Friends of El Dorado Nature Center

Colorado Lagoon Education Center

This supports the Friends' outdoor storyboards that focus on watershed protection, the water cycle and freshwater ecosystems for both schoolchildren and the public. The effort addresses historic wetlands and land use; local native flora and fauna; watershed education; water cycle education; stewardship and protection of natural resources; tidal and seasonal changes; and the value of wetlands to the watershed of the greater Long Beach area.

Pilgrim Place

"California Friendly Gardens"

This supports Claremont-based Pilgrim Place's conversion of 20 New England-type landscapes to California Friendly plant demonstration gardens and includes an educational water conservation display.

Pitzer College

"Integrating Sustainable Landscapes"

Supports community outreach to the Claremont area by expanding the college's arboretum with California Friendly plants and appropriate signage at campus entrances.

Rio Hondo College Foundation

Native plant education & conservation

CPP sponsorship supports an earth science curriculum at the Whittier-based campus, along with a student-produced ceramic tile mural depicting the water cycle, as well as design of a native plant garden, in conjunction with the school's plant biology course.

San Diego Baykeeper

"Project SWELL—Stewardship: Water Education for Lifelong Leadership"

A water quality awareness and pollution prevention program for second- through sixth-graders that addresses San Diego watershed, ecosystem and conservation issues.

San Diego River Park Foundation

Kick-off for Water Information Center

CPP sponsorship in the first year of this water resources education program provides for development of a water quality test program, and information on the use of California Friendly plants.

San Diego River Park—Lakeside Conservancy

"Reach Out" Project

The CPP supports a program to provide the community of Lakeside with educational brochures that will present San Diego River watershed, restoration and water quality issues. The project also establishes a community database for newsletters and outreach.

Tides Center/Marine Education Project

"Native Plants—Phase Two"

Located in Newport Beach, this CPP phase two project supports interpretative exhibits that showcase native plants and bring water conservation and restoration goals to public attention.

Appendix

Best Management Practices for Urban Water Conservation

BMP Number	BMP Name	Metropolitan Program Description	Regional Program Status	Quantities and Dollars Through 6/30/2003		Quantities and Dollars FY 2004	
1	Residential Water Surveys	Financial support for surveys, retrofits,	Surveys	67,234	$1,911,669	2,667	$48,869
		and research & development	Toilet devices distributed	1,131,623	$1,308,051	1,142	$3,689
			Residential R&D (projects)	8	$299,799		
2	Residential Plumbing Retrofits	Financial support forretrofits and	Low Flow Showerheads distributed	2,964,728	$12,394,378	3,848	$18,809
		distributions	Faucet aerators distributed	219,096	$217,930	6,143	$6,143
6	High Efficiency Washing Machines	Financial support for rebates	Residential High Efficiency washers rebated	56,268	$2,660,121	36,794	$3,362,665
14	Residential ULFT Replacement	Financial incentives for toilet retrofits	Some agencies are reaching saturation	1,983,668	$124,430,098	151,171	$9,071,540
				6,422,625	**$143,222,046**	**201,765**	**$12,511,715**
5	Large Landscape	Financial support for retrofit surveys	Audits conducted	1,915	$775,735	258	$69,300
			Central controller	5	$496,831	2	$206,344
			Protector del Agua graduates	24,046	$1,534,000	6,701	$401,205
			Landscape R&D (projects)	11	$375,863		$98,005
				25,977	**$3,182,429**	**6,961**	**$774,854**
9	Commercial, Industrial, Institutional	Financial support for retrofit surveys,	ULFT	48,831	$3,023,739	9,680	$753,992
		workshops and research & development	Urinals	1,727	$134,855	419	$33,732
			Flush Valve kits	599	$14,277	156	$4,446
			Cooling Tower retrofits	527	$252,455	113	$59,160
			Clothes Washer rebates	11,217	$2,097,224	8,488	$2,160,910
			Industrial Process Improvements	2	$120,356	1	$51,801
			Pre-Rinse spray valves	6,157	$409,176	6,518	$433,447
			Other device rebates	642	$174,084	1,062	$255,492
			Workshops on commercial retrofits	7	$7,000		
			CII R&D (projects)	11	$336,403		
				69,720	**$6,569,569**	**26,437**	**$3,752,980**
3	System Water Audits, Leak Detection	Distribution system audits/leak detection	MWD surveys own pipes & aqueducts	Annually	$3,850,000		
4	Metering and Commodity Rates	All connections metered		Yes		Yes	
7	Public Information	Materials & programs provided	Launched multi-media regional message		$13,184,641		$2,160,000
8	School Education	Full range of school curricula			$8,225,293		$765,000
10	Wholesale Agency Assistance	Technical and financial support for BMPs 1, 2, 5-9, 11, and 14	Regional water efficiency media campaign, some programs managed for MWD's service area	See Total Below		See Total Below	
11	Conservation Pricing	Commodity rate structure in place		Yes		Yes	
12	Conservation Coordination	Staff of 10 people			$11,549,690		$1,733,000
13	Water Waste Prohibition	Exempt					
	Various	Programs no longer offered		1,719	$1,569,070		
			Miscellaneous Programs	**1,719**	**$38,378,694**		**$5,008,000**

Residential | Landscape | Commercial, Industrial, Institutional

Cumulative Total Spent by Metropolitan Water District through FY 2003: $191,352,738

FY 2004 Total: $22,047,549

Cumulative Total Spent by Metropolitan Water District through FY 2004: $213,400,287

Public Hearing Comments Excerpts

The following excerpts are from the Public Hearing held on December 13, 2004, to review Metropolitan's Regional Urban Water Management Plan for adequacy in achieving an increased emphasis on cost-effective conservation, water recycling, and groundwater recharge.

"About a year ago, I met with Charles Gale and Adán Ortega and Tim Blair and Carlos Michelon and we talked about the possibility of having KB Homes participate in a program whereby we would accept a small grant — a small incentive — to have us do California Friendly landscaping in our homes. As a result of that meeting and a lot of good work behind the scenes, we are now going ahead with a 79-unit project in Temecula called Valdemosa, in which all of the home sites will have the front yard California landscaped with special landscaping and watering, and tomorrow our people are meeting with Metropolitan Water District people and they are going to be planning the marketing of this project which lends itself to a lot of opportunity to get the word out to the general public that this is really a great way to go. It's a bit of an experiment and we're very delighted at KB Homes to work with an agency that has a sort of foresight and the proactive inclination to go out, reach out to a homebuilder like us, and say can we help incent you to do this. It's certainly the right direction to go and I hope that the Legislature recognizes that these kinds of programs are key to getting homebuilders across the state to see that the way to go is towards water conservation just as it is for energy conservation."

Andrew Henderson of KB Homes

"I would like to particularly speak about your education and outreach programs. As I was thinking through our connections with Metropolitan Water, I counted five ways right now that we are partnering with Metropolitan Water, all of which I think are important in our mutual conservation missions for the public. One of them is that we are recipient of one of your community partnering grants for teaching teachers how to build water conservation gardens. Another one is that we are a site for your Protector del Agua programs for homeowners and those are actually funded through some of our member agencies, we are a joint powers authority. Another one is we are a site for the first Home Depot staff training in San Diego County, and I really commend Metropolitan Water for having struck that agreement with Home Depot. I think it will have a huge effect on public education. Your California Heritage Gardening CD is a superb learning tool. We have a link to it on our web site. We promote it and give it out at all our classes, our workshops with our volunteers, our members and anybody who shows a real sincere interest in this kind of gardening. And then finally, your Nifty Fifty plants. We have that list posted on our web site and we are now designing a little logo to stick on all our plant tags that are in the Nifty Fifty. We've made a personal institutional commitment to have them all. We have 48 at the moment, and we have sent out a letter to all the nurseries in San Diego County asking them if they will join us in selling Nifty Fifty plants, and we have a list of them at our garden and on our web site so that our visitors will be able to make that connection from seeing the plant in the garden to finding it in the nursery. I believe that it's those kinds of connections that are deeply important in the educational process where a public garden and a large water agency, such as Metropolitan, and then the private sector, such as nurseries or developers, can all work together towards promoting water conservation. So, we are very, very pleased to work with Metropolitan and I only look forward to more connections, which I think are probably only limited by our creativity."

Marty Eberhardt, Executive Director
Water Conservation Garden, Cuyamaca College

Appendix

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.

All photos are MWD file photos, except where noted.

Member Agencies

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
December 6, 1928

Joined Metropolitan
February 27, 1931

Joined Metropolitan
February 27, 1931

Joined Metropolitan
February 27, 1931

Joined Metropolitan
June 23, 1931

Joined Metropolitan
December 17, 1946

Joined Metropolitan
July 23, 1948

Joined Metropolitan
October 16, 1950

Joined Metropolitan
November 15, 1950

Joined Metropolitan
November 26, 1951

Joined Metropolitan
November 26, 1951

Joined Metropolitan
January 15, 1953

Joined Metropolitan
November 12, 1954

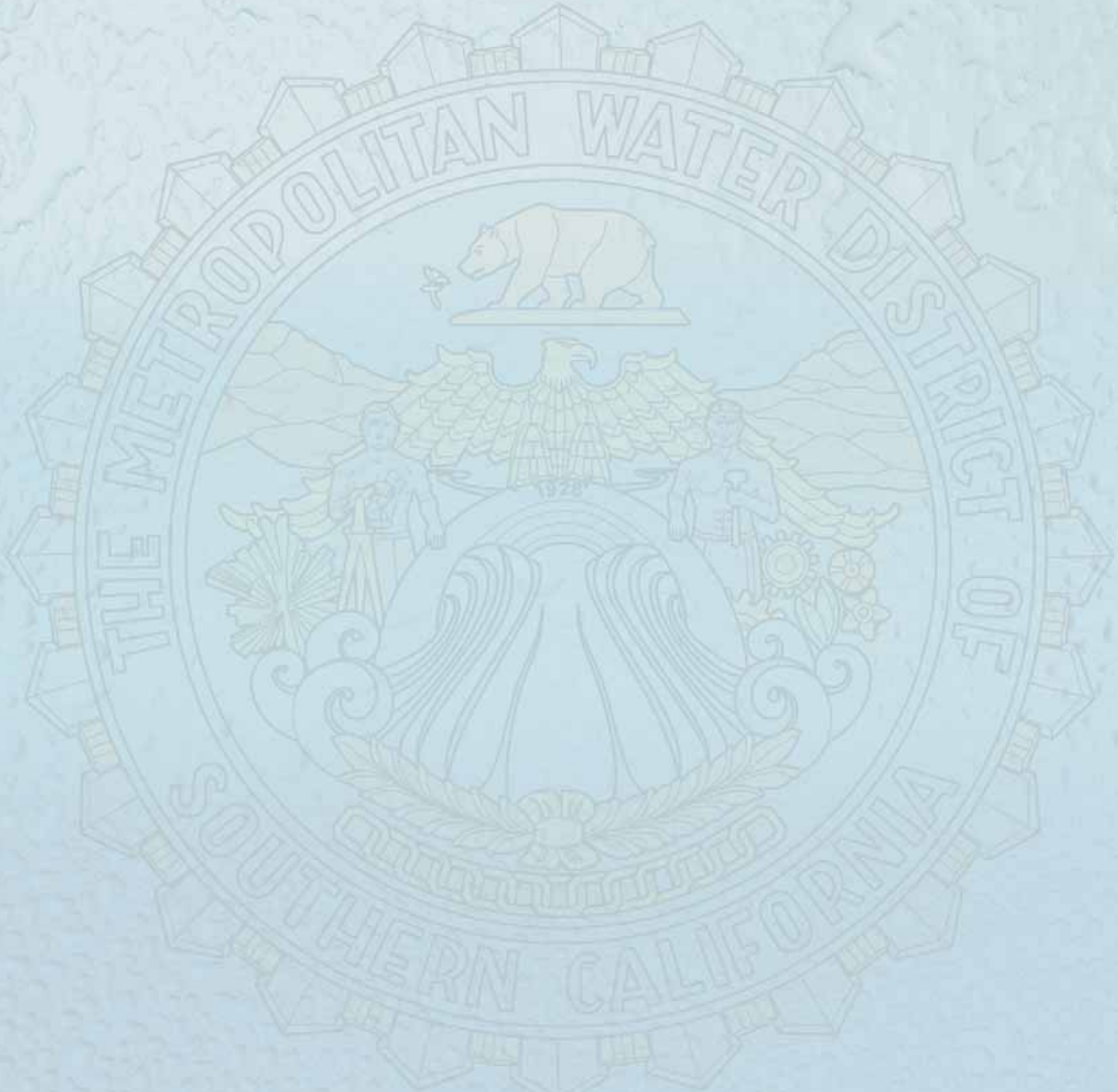
Joined Metropolitan
November 12, 1954

Joined Metropolitan
December 1, 1960

Joined Metropolitan
December 14, 1960

Joined Metropolitan
March 27, 1963

Joined Metropolitan
November 12, 1971


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928