

- Integrated Water Resources Plan

## Summary

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Metropolitan's resource strategy is based on its Integrated Water Resources Plan, which was first adopted in 1996 and updated in 2004. The IRP is both a planning framework and the blueprint for resource program implementation. It is formulated with input from member agencies, retail water agencies, other water and wastewater managers, environmental, business and community interests. The purpose of this report is to provide an overview of the IRP process and a summary of the findings and status of implementation in preparation of an update schedule for adoption in 2009.

## Attachments

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### [Attachment 1: 2007 IRP Implementation Report](#)

## Detailed Report

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### Background

#### *1996 Integrated Regional Plan*

Acknowledging the importance of water to the economic and social health of Southern California, Metropolitan has gradually shifted from an exclusive supplier of imported water to a regional water planner in collaboration with its member agencies. After the drought of 1987-1992, Metropolitan recognized the changed conditions and the need to develop a long-term water resources strategy to fulfill its mission of providing high quality reliable water supply for its service area. This process is now known as the Integrated Water Resource Plan (IRP); the first IRP was adopted by Metropolitan in 1996. The IRP was guided by six objectives established by Metropolitan's Board early in the process:

1. Ensuring Reliability
2. Ensuring Affordability
3. Ensuring Water Quality
4. Maintaining Diversity
5. Ensuring Flexibility
6. Acknowledging Environmental and Institutional Constraints.

One of the fundamental outcomes of the IRP was that regional water supply reliability could be achieved through the implementation of a diverse portfolio of resource investments and conservation measures. The resulting IRP strategy is a balance between demand management and supply augmentation. For example, in its dry year profile, the resource framework counts on almost equal proportion of water conservation and recycled water as withdrawal from storage and water transfers. The IRP is also a balance between the use of local resources and imported supplies. In a dry year, about 55 percent of the region's water resources come from local resources and conservation. Additionally, through the IRP process Metropolitan found solutions that offer long-term reliability at the lowest possible cost to the region as a whole.

The 1996 IRP, as blueprint to resource program implementation, also established the "Preferred Resource Mix". Through extensive technical modeling the IRP workgroups and workshops developed a Preferred Resource Mix that would provide the Metropolitan region with reliable and affordable water supplies through 2020.

The IRP provides details on the Preferred Resource Mix and guidelines to established broad resource target for each of the major supplies available to the region including:

1. Conservation

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2. Local Resources - Water Recycling, Groundwater Recovery and Desalination
3. Colorado River Supplies and Transfers
4. State Water Project Improvement
5. In-Region Surface Reservoir Storage
6. In-Region Groundwater Storage

### *2004 Update*

In 2004, the Metropolitan Board adopted an updated IRP. The IRP Update had three objectives:

1. Review the goals and achievements of the 1996 IRP
2. Identify the changed conditions for water resource development
3. Update resource development targets through 2025

The 2004 IRP process fulfilled the new objectives and updated the long-term plan to account for new water planning legislation. The updated plan contained resource development targets through 2025, which reflected changed conditions; particularly increased conservation savings, planned increases in local supplies and uncertainties. The 2004 IRP also explicitly recognize the need to handle uncertainties inherent in any planning process. For the water industry, some of these uncertainties are the level of population and economy growth which directly drive water demands, water quality regulations, new chemicals found to be unhealthful, endangered species affecting sources of supplies, and periodic and new changes in climate and hydrology. As a result, a key component of the Updated Plan was the addition of a 10 percent planning buffer. The planning buffer provided for the identification of additional supplies, both imported and locally developed, that can be implemented to address uncertainty in future supplies and demands.

### *Integrated Resource Planning Process*

The IRP process was a region-wide collaborative effort involving many groups including Metropolitan, member agencies, sub agencies, groundwater basin managers and representatives from environmental, agricultural, business and civic communities. From mid-1993 to 1996, Metropolitan and the region-wide stakeholders collectively analyzed available resources, both local and imported, together with conservation.

An IRP Workgroup comprised of representatives from Metropolitan's staff, member agency and sub-agency managers and groundwater basin managers provided the technical guidance for the IRP. This group met over 35 times and spent hundreds of hours analyzing the various resources.

Major achievements in the process were discussed and established through three regional assemblies. Invited public representatives, and member agency and sub-agency general managers were present at the regional assemblies in addition to the IRP Workgroup members. Broader public input to the planning process was obtained at six public forums and several member agency workshops. Business, environmental, community, agricultural and water interests both within and outside the region were invited to attend the public forums.

In 2004, the Metropolitan Board of Directors adopted an update to the 1996 IRP. Similar to the 1996 IRP, the 2004 Update was a collaborative effort of the region-wide stakeholders, and water industry and public input was sought.

### **Resource Targets and Results**

The 1996 IRP and the IRP Update developed targets for each resource that makes up the Preferred Resource. The targets were set for years 2010, 2020 and 2025. The following provides a summary of each resource, the targets, the most recent progress through July 2007 in achieving the targets, and any changes in the resources. Additional information and details on the implementation progress for 2007 can be found in [Attachment 1](#), the 2007 IRP Implementation Report

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### *Conservation*

Metropolitan's dedication to conservation since the early 1990's permitted the 1996 IRP to consider conservation a "core" water supply and establish targets for regional conservation savings. Establishing a conservation target required the use of a metric to measure conservation savings. However, conservation cannot be easily measured or metered. Models used in the 1996 IRP and the IRP Update estimated conservation savings based on expected changes in consumption from active and code-based conservation.

Metropolitan considers conservation from four different situations:

1. Active: savings from Metropolitan and member agency-funded conservation programs. These are also known as Best Management Practices (BMPs)
2. Code-based: savings from the Metropolitan-sponsored 1992 California plumbing code
3. Price Effects: savings due to increases in retail water rates and conservation rate structures enacted since 1990
4. Pre-1990: conservation from the 1980 California plumbing codes and price increases from 1980 to 1990.

As of the IRP update, Metropolitan did not assign a savings quantity to public awareness campaigns and education. It has been widely accepted that such programs prompt consumers to install water saving fixtures covered under active or code-based savings and thus are beneficial.

The 1996 IRP set the 2020 conservation targets to 882,000 acre-feet. The target set included projections of active BMP compliance and passive conservation. The IRP Update projected conservation savings of 1,028,000 acre-feet by the 2020 target. In addition the IRP Update provided a 2025 conservation forecast of 1,107,000 acre-feet. Table 1 shows the conservation targets for the 1996 IRP and Update.

**Table 1: Conservation Targets (Acre-Feet)**

Category	FY03	2010	2020	2025
IRP Update Target	653,850	865,200	1,027,600	1,106,900
1996 IRP Target	571,000	738,000	882,000	N/A
Actual / Estimate	703,000	866,000	1,043,00	1,147,000

Given the revised conservation target, Metropolitan continued to support the member agencies in developing cost-effective BMP-guided conservation programs and devising new programs. As shown in Table 1, the current active and code-based conservation programs currently in place are on track to meet the targets set by the IRP update.

### *Local Resources – Recycling, Groundwater Recovery, Seawater Desalination*

The 1996 IRP Preferred Mix included a diverse portfolio of imported supplies and locally developed resources. Locally developed supplies aid the region as a whole by offsetting the need for additional imported water.

The IRP set targets and committed funding for the development of member agency wastewater recycling and groundwater recovery projects. To implement the 1996 IRP local resource targets, Metropolitan established the Local Resources Program (LRP). Through the LRP, member agencies are paid incentives for developing local resource projects. Beginning in 1998, projects for LRP funding are chosen through a competitive Request for Proposals (RFP). Selected projects are given up to \$250 per acre-foot. The goal of the RFP process is to reach the target of recycled water and groundwater recovery programs and take advantage of competitive matching funds from member agencies. In April 2007, Metropolitan's Board adopted updated administrative policy principles for LRP implementation. The new principles allow for an open process to accept and review project applications submitted on a continuous basis, with a goal of the development of an additional 174,000 acre-feet per year of local water resources. The new process is intended to accelerate LRP project development.

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The 1996 IRP target for the local resources was set at 355,000 acre-feet by 2005, 410,000 acre-feet 2010 and 500,000 acre-feet by 2020. The IRP Update set the local resources goal to 750,000 acre-feet by 2025. While the target was missed for 2005 the region is expected meet the 2010 and 2020 targets. As of fiscal year 2006/07, Metropolitan has invested over \$244 million and partnered with member agencies on over 63 recycling projects and 26 groundwater recovery projects producing and estimated 319,000 acre-feet of supply. In addition, non-Metropolitan funded local resources have produced 167,000 acre-feet. By 2010 production of all local resources is expected to be 426,000 acre-feet, more than fulfilling the IRP Update goal. A summary of targets, actual performance and future estimates are shown in Table 2.

The local resources target is associated with half of the Planning Supply Buffer (or 250,000 acre-feet) and programs have already been identified that can fulfill the additional need.

**Table 2: Local Resources Targets**

Source	2005	2010	2020	2025
IRP Update Target	355,000	410,000	500,000	750,000
1996 IRP Target	355,000	410,000	500,000	N/A
Actual / Estimate	270,000	426,000	628,000	637,000

The status and projections of locally planned recycling and groundwater recovery projects change from year to year. Metropolitan periodically surveys its member agencies to coordinate local supply projections. Several changes discovered through the survey process were included in the IRP update.

Although seawater desalination is recognized as a potential resource, the high cost estimates disallowed this resource from being included in the targets set for future development in the 1996 IRP. Later, advancement in membrane technology and improved plant locations reduced the cost of desalination. In 2001, Metropolitan issued a competitive RFP for seawater desalination projects for a total goal of 50,000 acre-feet. The overwhelming response to the RFP allowed Metropolitan to set a seawater desalination goal of 150,000 acre-feet.

### *Colorado River Aqueduct*

A contract with the federal government provides a basic apportionment of 500,000 acre-feet per year of Colorado River water. Historically, Metropolitan has also held priority for an additional 662,000 acre-feet per year, depending on availability of surplus supplies.

The IRP target for Colorado River supplies includes Metropolitan's basic apportionment and supplies from storage and transfer programs that combine to provide the Colorado River Aqueduct (CRA) capacity. The IRP update set the total CRA dry-year deliveries to 879,000 acre-feet in 2010 and 1,250,000 in both 2020 and 2025.

To fulfill the long-term targets, Metropolitan will produce 1,250,000 acre-feet of supply when needed. The Qualification Settlement Agreement between California Agencies, which established the baseline water use for each agency, provides a foundation for these supplies. Also, Metropolitan has identified five programs to fulfill the resource needs. The programs are:

1. IID/San Diego County Water Authority Transfer
2. Coachella and All-American Canal Lining programs
3. IID/MWD Conservation program
4. Palo Verde Irrigation District program
5. Lake Mead storage

In 2007, Quagga mussels (relatives of the zebra mussels overrunning the Great Lakes and Mississippi River watersheds) were found at various locations within Metropolitan's CRA. If left unchecked, Quagga mussels can destroy water supply systems. Controlling the spread and impacts of the Quagga mussels will require more

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extensive maintenance and operational changes along the CRA system to accommodate new treatment and maintenance needs.

### *State Water Project*

Metropolitan currently holds a 1,911,000 acre-feet contract for annual deliveries from the Bay-Delta. However, water quality and supply reliability challenges due to variable hydrology and environmental standards limit the amount of the contract that can be fulfilled from year to year.

Originally the IRP set targets for the SWP through 2025. However, subsequent Board policy on Bay-Delta improvements removed specific targets and instead focused on improvements to ecosystem, water quality, and supply reliability.

### *In-Region Surface Water Storage*

Facilities that are considered in this resource are:

- Metropolitan Reservoirs (Diamond Valley Lake, Lake Mathews, Lake Skinner)
- Flexible Storage in DWR reservoirs (Castaic Lake, Lake Perris)

The approach used in the IRP Update assumes dry-year surface storage can be used as needed and as available within the Water Surplus and Drought Management (WSDM) planning framework. The WSDM, established in 1999, guides Metropolitan's operations of its storage and water management actions in both wet and dry years. The 1996 IRP and IRP Update identified an in-region surface water target of 620,000 acre-feet of dry-year storage (400,000 acre-feet in DVL and 220,000 available through the Monterey Amendment) for each of the years 2010, 2020 and 2025.

### *In-Region Groundwater Storage*

Groundwater basins within Metropolitan's service area provide operational flexibility to the water supply in Southern California. Since the 1950s conjunctive use has been used for local water management. Now, more than 70 recharge facilities are replenishing groundwater basins throughout Southern California.

Targets for conjunctive use, also known as groundwater storage, have taken into consideration an effective ratio of groundwater storage to delivery capacity of three to one. This ratio generally allows for maximum storage under historical hydrologic variations, while minimizing costs.

The 1996 IRP set the targets for dry-year yield of 275,000 acre-feet in 2010 and 300,000 acre-feet in 2020. The IRP update left the 2010 and 2020 targets unchanged and added the 2025 target of 300,000 acre-feet. These In-Region Groundwater Storage targets include the dry-year yield from groundwater storage programs within the region, existing Cyclic Storage and the Replenishment Rate program.

As of July 2007, In-Region Groundwater Storage is not expected to meet the 2010 target. Building on information in the Groundwater Assessment Study, which was completed in 2007, Metropolitan has planned a groundwater workshop process with member agencies and groundwater basin managers to develop strategies and recommendations to increase groundwater conjunctive use.

### **Next Steps**

As previously discussed, water supply planning is an ever changing process. Several changed conditions were observed from the 1996 IRP to the 2004 Update. As a result, the 2004 IRP changed or updated IRP targets in all six of the Preferred Resource Mix resources.

Now, four years since the last IRP update there is a need for a new round of water resource analysis and projections. Recent events have called Metropolitan's attention to new and changing trends in the region's water supply reliability. Changes in the trends of climate, the cost and use of energy, endangered species protections, greenhouse emissions and conveyance needs in the Sacramento-San Joaquin River Delta System have already been observed. These variations call for an updated IRP and for the fortification of adaptive strategies to confront additional challenges in future.

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The next update is expected to be completed in 2009. The basic objectives of the 2009 IRP will be to:

1. Review the achievements of the 1996 IRP and the 2004 Update
2. Identify changing conditions affecting water resource development
  - Attention will be given to emerging factors and considerations, such as the current drought, climate change, energy use, and changes in Delta pumping operations
3. Update resource development targets through 2030
  - Discussion will focus on adaptation to future uncertainties, and potential alternatives for further diversifying Metropolitan's water resource portfolio and increasing supply reliability in the face of changing circumstances.



## **2007 IRP Implementation Report**

October 2007

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## Section 1: IRP Implementation

*In the early 1990's, Metropolitan and its member agencies embarked on a region-wide, stakeholder driven process to develop a long-term water resources development strategy for southern California. This process, known as the Integrated Resources Planning Process, spanned over three years and included participants from water agencies, the business community, the environmental community, governmental leadership, and the general public. The process resulted in a preferred resources strategy that was designed to meet six objectives:*

1. *Reliability*
2. *Affordability*
3. *Water Quality*
4. *Diversity of supply*
5. *Adaptability*
6. *Recognition of Environmental, Institutional, and Political Constraints*

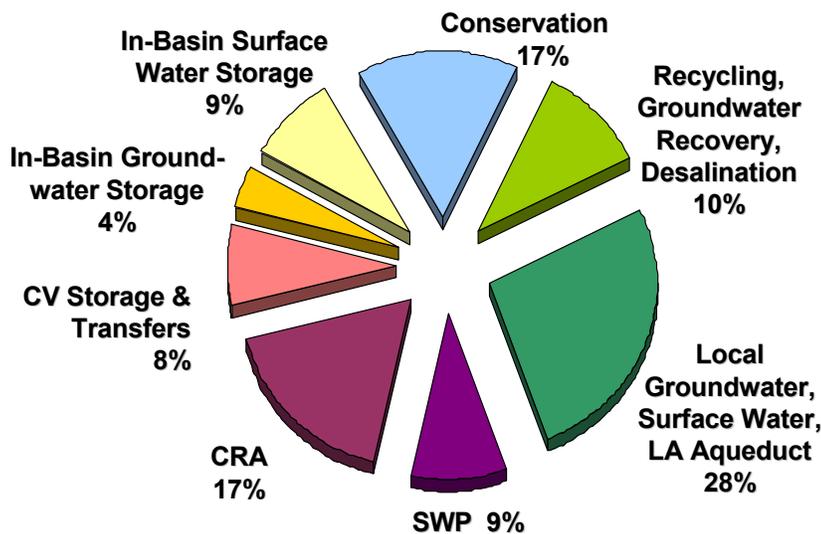
Metropolitan's Board adopted the preferred water resources strategy in 1996 and approved resource development targets for implementation by staff. In 2004, the Board approved the IRP Update, which extended the planning horizon to 2025 and updated the resource development targets.

It also established a water supply buffer that would allow Metropolitan and its member agencies to manage the uncertainties and variability of supplies and demands. In approving the IRP Update, the Board also set a policy that directs staff to provide annual updates on the status of actions and programs to meet dry-year water supply development targets. The 2007 IRP Implementation Report is intended to fulfill that policy direction.

In January 2008, Metropolitan will initiate the next update of the IRP. This is a timely step, as new uncertainties that could significantly affect the future of southern California's water resources have come to light over the past year. One of the most significant uncertainties revolves around actions to protect endangered fisheries in the California Bay-Delta. In addition, the IRP Update will allow for consideration of long-term facility options on the State Water Project. Also, climate change due to global warming is emerging as a significant challenge for the western United States.

### 2025 Dry-Year Resources Mix

(With Supply Buffer)



**REPORT FRAMEWORK**

**RESOURCE DEVELOPMENT CATEGORIES**

The Integrated Resources Plan (IRP) and subsequent IRP update in 2004 established dry-year resource development targets for each of the types of resources that make up the regional water resources mix. These long-term targets were set for years 2010, 2020, and 2025.

This year’s report provides a summary of the implementation progress over the past year, by resource category. In the summaries, there is also a description of recent actions or strategies that are being employed to facilitate development of the resource. The report also contains a table detailing the growth in resource development, as well as an indication of where currently developed programs line up against IRP Targets for 2010. The categories of water resources development are as follows:

- Conservation
- Local Resources – Water Recycling, Groundwater Recovery and Desalination
- Colorado River Aqueduct
- State Water Project
- Central Valley Storage and Transfer Programs
- In-Region Groundwater Conjunctive Use Storage
- In-Region Surface Water Storage

**Resource Category Supply Development (in Acre-Feet)**

Resource Category	2006 Supply	2007 Supply	2010 <sup>1</sup>	2010 TARGET
Conservation	775,000	812,000	866,000	865,000
Local Resources (LRP)	282,000	319,000	426,000	410,000 660,000 (B)
Central Valley Storage & Transfers	292,000	292,000	350,000	300,000 550,000 (B)
In-Basin Groundwater Storage	107,000	133,000	247,500	275,000
In-Basin Surface Water Storage	860,000	940,000	940,000	620,000
Colorado River Aqueduct	633,000	666,155	875,000	879,000
State Water Project	466,000	446,000 <sup>2</sup>	396,000 (~15% cut) <sup>3</sup>	463,000

<sup>1</sup> 2010 supplies include anticipated growth in existing projects (primarily Local Resources production).

<sup>2</sup> Amount for 2007 State Water Project includes only dry-year supplies (Table A and San Luis Carryover supplies).

<sup>3</sup> SWP Dry-year supplies reduced by estimated 15% per federal court decision on Delta operations.

“B” indicates Target plus Supply Buffer

## SUMMARY

This 2007 IRP Implementation Report reflects the fact that, with respect to specific resource development categories, significant challenges in some resource areas will likely require changes in strategies and implementation approaches in order to reach the long-term IRP Targets. Progress in program implementation is being made in most resource areas. However, a further examination of the uncertainty of State Water Project supplies, among other uncertainties, will be required to assess the ability to achieve the long-term IRP Targets.

- Expanded incentives: new incentives have been added to facilitate the installation of water conserving devices; grants and like funding from other agencies help expand incentives programs;
- New Programs: novel programs like the recently approved Public Sector Water Efficiency Partnership Demonstration Program (Metropolitan's Board authorized \$15 million for the Program) allows Metropolitan to work with member agencies to save water through public agencies within Metropolitan's service area that have high potential to achieve accelerated conservation or water recycling use.

## CONSERVATION

Using 1980 as a base year for measurement, water savings for conservation targets are tabulated from established Best Management Practices (BMP) incentive programs (rebates for devices like High-Efficiency Clothes Washers, or funding improvements to industrial processes, etc.), effects of increasing retail water rates, and code-based water savings from plumbing codes (which can vary with changing demographic trends). In FY 2006-07 Metropolitan benchmarked its conservation model savings estimates with audited historical data and new device savings calculations; these updates should provide more precise estimates of regional water savings.

Existing and identified programs are still estimated to meet the 2010 IRP targets: FY 2006-07 estimated water savings from conservation are about 812,000 acre-feet (including active conservation), and are expected to meet the 2010 target of 866,000 acre-feet of water saved. Recent actions approved by Metropolitan's Board include:

- Program refinements: more options, streamlined administrative processes, upgraded and new incentives, and more standardization across programs to increase program participation;

## LOCAL RESOURCES (LRP)

Metropolitan's Local Resources Program (LRP) has evolved into a performance-based program providing incentives of up to \$250 per acre-foot to expand water recycling and support recovery of degraded groundwater. A similar approach will be used to provide incentives for seawater desalination production. The IRP Target for local resources development combines programs developed entirely by member and retail agencies without Metropolitan funding, and the programs developed with LRP program funding. LRP production estimates reached about 319,000 acre-feet of supply for FY 2006-07, and are expected to exceed the 2010 target of 426,000 acre-feet based on current production and growth in existing projects.

The local resources target is associated with half of the Planning Supply Buffer (or 250,000 acre-feet), and programs have already been identified that can fill the additional need identified under the buffer supply development target. For example, Metropolitan's Board has decided to pursue the development of seawater desalination through regional facilitation and funding, one of the components previously identified to help meet this supply target.

In April 2007, Metropolitan's Board adopted updated administrative policy principles for LRP implementation. The new principles allow for an open process to accept and review project

applications submitted on a continuous basis, with a goal of the development of an additional 174,000 acre-feet per year of local water resources. The new process is intended to accelerate LRP project development.

agreement with San Bernardino Valley MWD to purchase 200,000 acre-feet of previously stored SWP water and to obtain access to facilities that will increase Metropolitan's dry-year delivery capabilities.

## CENTRAL VALLEY STORAGE & TRANSFERS

Groundwater storage programs and single year water transfers provide great flexibility and potentially significant dry-year supplies to meet this resource category's targets. Metropolitan's success in developing dry-year storage and transfer agreements results from changes since the 1996 IRP which include: 1) development of program partnerships in the Central Valley with agencies recognizing that participation in transfer programs can be a good business practice; 2) recognition of the value of groundwater storage strategies; and 3) more cooperation between Metropolitan, DWR and other agencies to facilitate water transfers.

Existing supplies currently meet targeted dry-year supply (about 292,000 acre-feet), and are projected to exceed the 2010 target of 300,000 acre-feet. Potential additional supplies have been identified that will meet the additional buffer supply (250,000 acre-feet) that has been linked to this resource category.

In 2006, Metropolitan initiated negotiations with existing SWP storage partners to improve program capabilities and overall reliability for this resource target. These partners and the status of negotiations include:

- Arvin-Edison Water Storage District: A new agreement was reached with Arvin-Edison WSD to expand facilities that help improve California Aqueduct water quality and increase the dry-year yield from this storage program using Proposition 13 funds.
- Kern-Delta Water District: A new agreement was reached with Kern Delta WD which will optimize program facilities and extend the program term an additional six years.
- San Bernardino Valley Municipal Water District: Metropolitan has reached an

## IN-REGION GROUNDWATER STORAGE

The In-Region Groundwater Storage target includes the dry-year yield from groundwater storage programs within the service area, and also includes estimates of yield from existing Cyclic Storage, the Replenishment Rate program and the Supplemental Storage Program.

Though this resource currently falls short of the 2010 IRP target (275,000 acre-feet), the recent Groundwater Basin Assessment Study provides new information and a baseline for discussions focusing on how to move forward to meet the 2010 and 2020/25 IRP goals for dry-year groundwater yield. Key findings of the final report include:

- Currently, groundwater production meets nearly 40 percent of regional demands for water supplies; a portion of this supply relies on replenishment deliveries from Metropolitan;
- Based on the data provided, as much as 3.2 million acre-feet of physical storage space may be available in groundwater basins within the Metropolitan service area as of 2006; however, much of this space is not currently utilized due to a number of factors including institutional disagreements and uncertainties, need for significant capital investments in conveyance, recharge, and/or extraction facilities, water quality considerations, etc.

Further details regarding the report will be brought to Metropolitan's Board and member agencies to foster discussions about how to continue development of this resource.

## IN-BASIN SURFACE WATER STORAGE

Facilities that are included in this IRP resource include:

- Metropolitan Reservoirs (Diamond Valley Lake, Lake Mathews, Lake Skinner);
- Flexible Storage in DWR reservoirs (Castaic Lake, Lake Perris).

Metropolitan has already met or exceeded the 2010 IRP target for dry-year surface storage (620,000 acre-feet) - dry-year storage available is projected at about 940,000 acre-feet. Therefore, no additional programs or strategies are being developed at this time for this resource. Even with portions of reservoir capacity set aside for Emergency Storage, seasonal storage available to Metropolitan exceeds the IRP targets through 2025. Staff has adjusted available dry-year capacity to account for reduced capacity in Lake Perris, but this has minimal impact on Metropolitan's In-Region Surface Storage resource. No other adjustments have been made at this time.

## COLORADO RIVER AQUEDUCT

Metropolitan's Colorado River Aqueduct (CRA) has the capacity to deliver 1,250,000 acre-feet of water per year into its service area. The IRP target for Colorado River supplies includes Metropolitan's basic apportionment and supplies from storage and transfer programs. Currently, existing supplies – over 660,000 acre-feet in 2007 – contribute to meeting the 2010 target of about 875,000 acre-feet.

As the availability of surplus and unused water from the Colorado River basin has diminished, new strategies to meet longer-term IRP targets for dry-year yield increasingly rely upon potential supplies from increased storage capabilities (for example, from the proposed Intentionally Created Surplus program that will allow Metropolitan to store water in Lake Mead). Agreements with the Bureau of Reclamation for a long-term ICS program is

subject to ongoing environmental review and is scheduled to be complete in December 2007.

Depending on the availability of increased storage, some additional program development may still be required to reach longer-term targets.

Recent findings of Quagga mussels (relatives of the zebra mussels overrunning the Great Lakes and Mississippi River watersheds) at various locations within Metropolitan's CRA system have not been identified as posing significant water supply impacts. However, controlling the spread and other impacts of the quagga mussels will require more extensive maintenance and is also likely to necessitate operational changes along the CRA system to accommodate new treatment and maintenance needs.

## STATE WATER PROJECT

Metropolitan's State Water Project (SWP) target includes water delivered through the State Water Contract, which includes Table A contract supplies, use of carryover storage in San Luis Reservoir, and use of Article 21 interruptible supplies (and also includes exchange and delivery agreements with Desert Water Agency and Coachella Valley Water District (DWCV)).

SWP dry-year resources meet current FY 2006-07 target level estimates (446,000), but are not projected to meet the 2010 target of 463,000 acre-feet, or longer-term targets.

### **DELTA SMELT**

In May 2007, a federal court invalidated the Biological Opinion issued by the U.S. Fish & Wildlife Service for operations of the State Water Project (SWP) and Central Valley Project with regard to Delta smelt (*Hypomesus transpacificus*), a federally- and state-listed threatened fish species that inhabits the estuaries of the Bay-Delta region. On August 31, 2007, the federal court ordered interim protective measures for the endangered Delta smelt. Under the remedy ruling, operational limits on delta pumping would be put in place

from the end of December, when fish are about to spawn, until June, when the smelt migrate westward to Suisun Bay. The federal ruling will have an effect on 2008 State Water Project operations and supplies. Based on initial estimates, Metropolitan could see as much as up to 22 percent reduction, on average, of its SWP supplies in 2008 and beyond. Actual water supply curtailments for Metropolitan are contingent upon fish distribution and behavioral patterns, weather, and flow conditions in the Delta and how water supply reductions are divided between the state and federal projects. This remedy ruling will be in effect until the biological opinion is rewritten.

At present, several proceedings concerning Delta operations are ongoing to evaluate

options to address delta smelt impacts and other environmental concerns. In addition to the reconsultation process and the interim remedies proceedings to address immediate environmental concerns, the Delta Vision process and the Bay-Delta Conservation Plan process are defining long-term solutions for the Delta. Metropolitan is actively engaged in all of these processes and in May and September 2007, its Board adopted a framework and directions for key elements of a Delta Action Plan to address water supply risks in the Delta

*[Section 2: Semiannual Report on Metropolitan's Local Resources and Conservation Programs]*

## Section 2: Semiannual Report on Metropolitan's Local Resources and Conservation Programs – October 9, 2007

### Metropolitan launches new water saving initiatives in the wake of Southern California’s driest year on record

For the last half of Fiscal Year 2006/07 (January through June 2007), two new programs combined with an increased public awareness advertising campaign have been developed to bolster Southern California’s local water management and reduce its reliance on imported supplies. Implementation of a new set of Local Resources Program (LRP) projects, development of an enhanced residential region-wide incentive program, and an enhanced communication plan will assist Southern California during this dry period.

#### HIGHLIGHTS

##### Local Resources Program expands

Working with its member agencies, Metropolitan implemented new measures to develop an additional 174,000 acre-feet per year of water recycling and groundwater recovery yields. [Page 2](#)

##### Board approves conservation campaign

In June, the Board approved a \$6.3 million regional communication plan to increase public awareness of conservation during record dry conditions. [Page 4](#)

##### New Regional Residential Conservation Incentive Program approved by the Board

In July, the Board approved a new Regional Residential Conservation Rebate Program modeled after Metropolitan’s highly successful regional commercial program, “Save Water – Save A Buck” with projected annual water saving increases of 5% per year. [Page 7](#)

##### MWD’s High-Efficiency Toilet Program leads nation

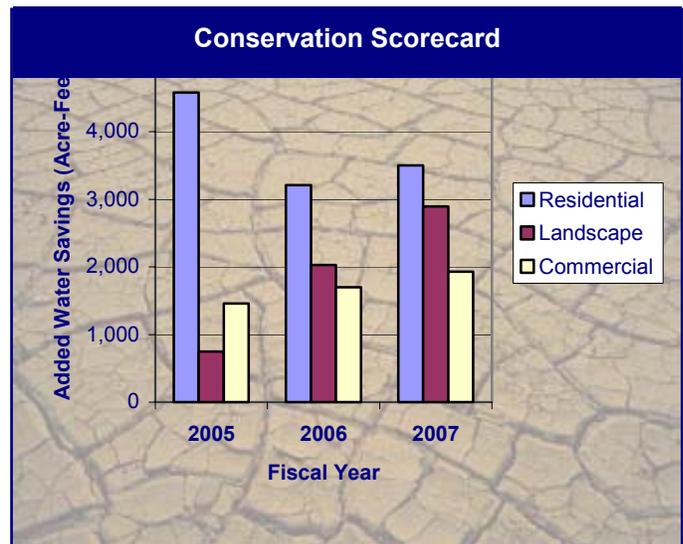
Over 24,500 acre-feet of projected lifetime water savings is expected from about 29,000 High-Efficiency Toilets (HETs) that were processed through the residential and commercial conservation programs this past fiscal year. [Page 4](#)

##### New water savings device incentives added

Five new device incentives were added to the residential and commercial programs:

- Synthetic Turf (\$13,000/acre)
- Dry Vacuum Pumps (\$125 per 1/2 hp)
- Commercial Clothes Washers (\$210/washer)
- Urinals (up to \$400/unit)
- High Efficiency Sprinkler Nozzles (\$13/nozzle)

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Commercial Activities	8

## LOCAL RESOURCES PROGRAM

Metropolitan’s Local Resources Program experienced a 16% growth in deliveries this past fiscal year over the previous fiscal year, 2006. This increase of 21,000 acre-feet was attained through program growth and the addition of four new projects.

Metropolitan provides financial incentives for local development of water recycling and groundwater recovery projects that reduce demand on imported supplies. The following table summarizes program costs and accomplishments:

<b>LOCAL RESOURCES PROGRAM SUMMARY (Ending June 30, 2007)</b>			
	<i>Recovered Groundwater</i>	<i>Recycled Water</i>	<i>Total</i>
<b>Projects</b>			
<b>Active Contracts</b>	<b>19</b>	<b>55</b>	<b>74</b>
<b>Operating Projects</b>	<b>18</b>	<b>45</b>	<b>63</b>
<b>Contract Yield (AFY)</b>	<b>84,000</b>	<b>280,000</b>	<b>364,000</b>
<b>Deliveries (AF)*</b>			
<b>FY 2006/07</b>	<b>49,000</b>	<b>98,000</b>	<b>147,000</b>
<b>FY 2005/06</b>	<b>44,000</b>	<b>82,000</b>	<b>126,000</b>
<b>Since Inception</b>	<b>381,000</b>	<b>912,000</b>	<b>1,293,000</b>
<b>Payments (\$ millions)</b>			
<b>FY 2006/07</b>	<b>\$9</b>	<b>\$19</b>	<b>\$28</b>
<b>FY 2005/06</b>	<b>\$9</b>	<b>\$16</b>	<b>\$25</b>
<b>Since Inception</b>	<b>\$71</b>	<b>\$173</b>	<b>\$244</b>

\*Deliveries and payments are as reported through June 2007; however, not all information is complete since payments are estimated until actual costs are reconciled. Production total includes data for concluded contracts.

### LOCAL RESOURCES PROGRAM IMPLEMENTATION

In April 2007, Metropolitan’s Board of Directors adopted new implementation policies for the next phase of Local Resources Program (LRP). The LRP will use a new approach through an open process to accept and review project applications on a continuous basis for the development of 174,000 acre-feet per year of local resources. Previously, Metropolitan selected projects through a competitive request for proposal process. This new approach was developed through a 9-month collaborative effort with member and retail agencies.

### REGIONAL FACILITATOR ROLE

In April 2007, Metropolitan’s Board of Directors broadened Metropolitan’s regional support of local

resources development in the areas of technology advances, environmental documentation, funding, regional resource planning and regulatory clearances. Metropolitan will focus on advancing local resources yield in Southern California to help sustain regional water supply reliability.

As part of its role as a regional facilitator, Metropolitan joined two organizations early this year, the WaterReuse Foundation and the Affordable Desalination Collaboration. Additionally, Metropolitan renewed its membership to the New Water Supply Coalition (formerly U. S. Desalination Coalition). Metropolitan also gained a seat on the WaterReuse Foundation’s Board, which will give the region a voice on where research would best be directed. Supporting these organizations will allow Metropolitan to enact its Board-adopted regional facilitator role in providing leadership and support to the member agencies in advancing water recycling,

groundwater recovery, and seawater desalination development in Southern California.

**IRVINE DESALTER PROJECT**

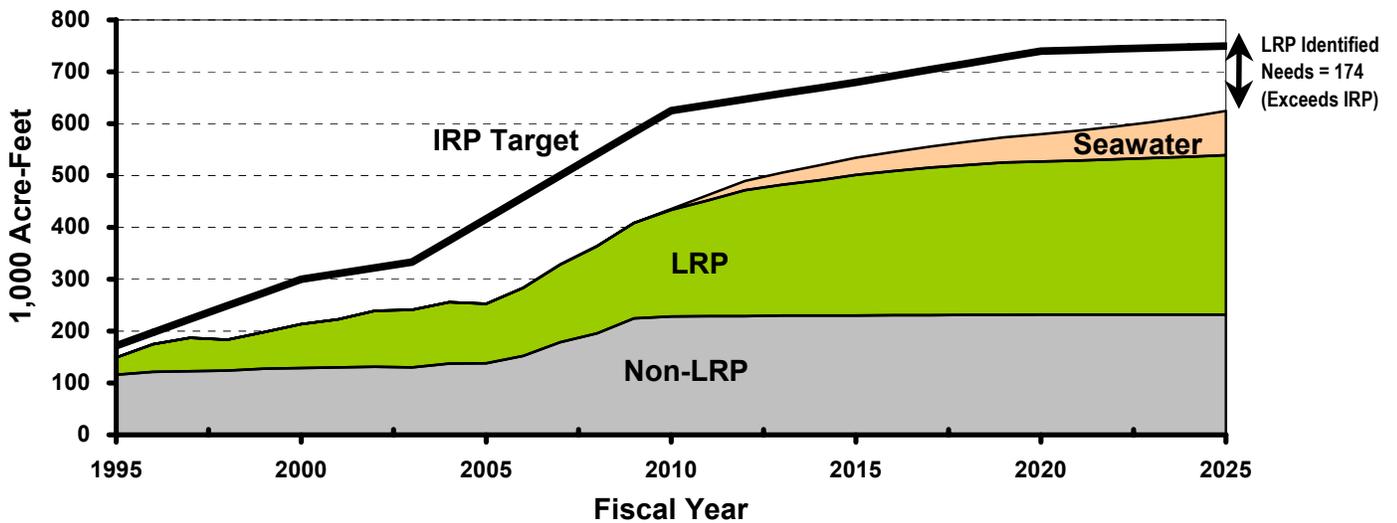
Irvine Ranch Water District (IRWD) dedicated its Irvine Desalter Project on February 20, 2007. The project is a joint groundwater quality recovery project by IRWD and the Orange County Water District. This 6,700 acre-feet per year potable treatment facility recently commenced operation and will help increase regional supply reliability by reducing dependency on imported water. This facility will provide drinking water for up to 50,000 people annually. Metropolitan, through its Groundwater Recovery Program, will contribute up to \$250 per acre-foot in incentives for 20 years.



*IRWD's Desalter Facility*

**LRP TARGET GRAPH**

**Current LRP Resource Needs**



## CONSERVATION PROGRAM

Metropolitan’s Conservation Credits program experienced increased water savings in all three major sectors this past fiscal year from the previous year. The total new annual water savings for the 2007 Fiscal Year increased by 20% from the prior year. Rebates for high-efficiency toilets and weather based irrigation controllers increased significantly this past year resulting in the Program’s large water savings increase. Since inception, Metropolitan’s program has contributed savings of approximately 977,000 acre-feet of water through its active conservation program and follow-on plumbing code-based activities.

Incentive-based conservation targets established in the Integrated Water Resources Plan are pursued in three basic water use areas: Residential, Landscape, and Commercial. The following table summarizes conservation program water savings and incentive payments:

<b>CONSERVATION CREDITS PROGRAM PERFORMANCE SUMMARY (Ending June 30, 2007)</b>				
				<b>Total</b>
<b>New Water Savings (AF)</b>				
<b>FY 2006/07 *</b>	<b>3,500</b>	<b>2,900</b>	<b>1,900</b>	<b>8,300</b>
<b>FY 2005/06 *</b>	<b>3,200</b>	<b>2,000</b>	<b>1,700</b>	<b>6,900</b>
<b>Payments (\$ millions)</b>				
<b>FY 2006/07</b>	<b>\$9</b>	<b>\$1</b>	<b>\$5</b>	<b>\$15</b>
<b>FY 2005/06</b>	<b>\$8</b>	<b>\$0.5</b>	<b>\$3</b>	<b>\$11</b>

\* New active annual water savings

### HIGH-EFFICIENCY TOILETS

Metropolitan provided rebates on more than 17,000 high-efficiency toilets (HETs) during the first half of 2007 through its commercial and residential programs, resulting in a fiscal year total of 29,000 HETs. These toilets are expected to save about 25,000 acre-feet of water in lifetime savings. Incentives for HETs commenced in December 2005 and have seen rapid growth in a very short period resulting in a national leading program.

### REGIONAL COMMUNICATION PLAN

Record dry conditions in Southern California and in the key watersheds that make up its imported water supplies provide a unique opportunity for Metropolitan and its member agencies to make

considerable gains in water conservation education and community outreach among Southern Californians. In June, the Board approved an enhanced communications plan to help ensure water supply reliability for the future. Primary objectives of this plan are:

- Inform the public of the need for water conservation and provide tools to use water more efficiently
- Gain news media and community support to spread the message
- Partner with large landscape owners and users to demonstrate water use efficiency
- Collaborate with government agencies, businesses and nonprofits on resource efficiency campaigns.

**CONSERVATION RADIO ADVERTISING**

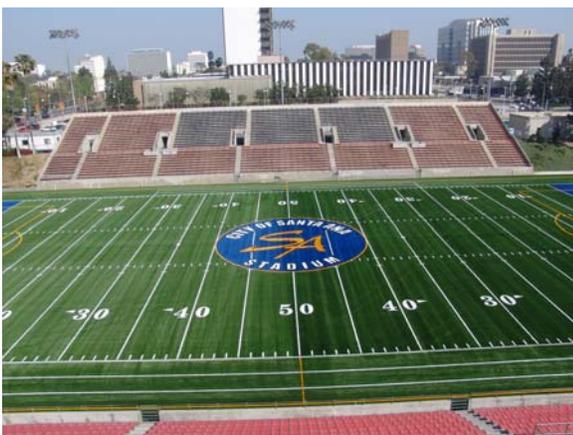
Memorial Day marked the start of Metropolitan’s summer water conservation radio campaign. This campaign featured 10-second radio spots that aired on about 100 Southern California radio stations through the end of June. These spots used the "Let’s Save Water" theme preferred by member agencies and featured helpful water-saving tips.

**NEW WATER SAVING DEVICE INCENTIVES**

Five new device incentives were added to Metropolitan’s conservation program including:

● **Synthetic Turf (\$13,000/acre)**

Synthetic turf is becoming increasingly popular for sports fields, parks and residential applications. In June 2005, Metropolitan and the U. S. Bureau of Reclamation initiated a synthetic turf pilot project to provide rebates for public applications. Results from this pilot indicate that synthetic turf saves an average of six acre-feet of water per acre annually on athletic fields and greatly reduces maintenance. Additionally, environmental benefits are seen in reduced irrigation runoff that may contain fertilizer and pesticide residues used to maintain natural grass.



*Santa Ana Stadium with Synthetic Turf Installation*

● **Dry Vacuum Pumps (\$125 per ½ hp)**

Vacuum pumps are used in a wide variety of petrochemical, pharmaceutical, food manufacturing, and health applications. Many of these pumps use water as a liquid seal to create the vacuum. The water is usually used once and then discharged to the sewer. Dry vacuum pumps avoid the use of water as a sealant by using parts machined with extremely close tolerances. Measured savings averaged 0.25 gallons per minute per one-half horsepower (hp).



*Dry Vacuum Pump*

● **Commercial Clothes Washers (\$210/washer)**

San Diego County Water Authority studied the efficiency of commercial clothes washers to quantify water and energy savings by replacing less efficient single-load, top-load washers with more efficient front-load, multi-load washers. Single-load, top-load washers typically wash about 12 pounds of laundry. Multi-load washers have capacities that range up to 55 pounds. The study indicates that replacing single-load washers with multi-load washers saves an average of about 16 gallons per load.



*Commercial High Efficiency Washers*

- **High Efficiency Urinals (Up to \$400/unit)**

The current plumbing standard for urinals is 1.0 gallon per flush (gpf). Incentives were previously approved for High Efficiency Urinals (HEU) using 0.5 gpf and waterless urinals. Since approving these incentives in December 2005, a number of HEUs' with intermediate flush volumes have become available, flushing up to 0.5 gallons. Metropolitan's incentives now apply to a range of flush volumes to address these new, more efficient urinals.

- **High Efficiency Sprinkler Nozzles (\$13/nozzle)**

Many large rotary sprinklers used on golf courses and other large, open landscapes are fitted with dual plastic nozzles for long range and close-in watering. Wear and tear causes these plastic nozzles to distort and spray excessively. Replacement nozzle sets overcome this problem. Made of durable metal that is highly resistant to wear, these nozzles provide high distribution uniformity for many years. A study of five golf courses retrofitted with these nozzle sets demonstrated water savings of about 7 percent.



*Close up view of high efficiency nozzles*



*High Efficiency Nozzles Irrigating Golf Course*

### HIGH-EFFICIENCY CLOTHES WASHERS

Metropolitan provided rebates for more than 15,000 high-efficiency clothes washers through its residential and commercial programs in the first six months of 2007, resulting in a fiscal year total of about 29,000 washers. The lifetime water savings from these washers is estimated to be about 12,000 acre-feet, a savings increase of approximately 4,000 acre-feet from the previous fiscal year. The increased water savings is attributed to the sale of improved water efficient units.

### CHALLENGES

The California Energy Commission (CEC) initiated civil action to overturn the Department of Energy's (DOE) denial of CEC's waiver to apply more stringent water and energy savings to clothes washers. The CEC was scheduled to implement new state standards in January 2007 that specify water efficiency standards for clothes washers. The DOE is the regulatory authority for clothes washer standards and denied the CEC's waiver from federal energy standards in December 2006.

Staff continues to identify strategies to sustain momentum in retrofitting residential clothes washers with more efficient models that conserve water. Metropolitan recently received a two million dollar grant from the California Department of Water Resources to increase its financial incentives for purchases of more water efficient clothes washers (Water Factor of 5 or less). This increased incentive will make high efficient washers more attractive to consumers.

## RESIDENTIAL ACTIVITIES

### REGIONAL RESIDENTIAL INCENTIVE PROGRAM

The Regional Residential Incentive Program, recently adopted by the Board, will increase conservation by allowing residential customers to use a one-stop shop to secure incentives and program eligibility requirements. Rebates can be paid directly to end-users or contractors. Metropolitan is currently reviewing Request For Proposals (RFP) submittals to determine the most qualified vendor to run this regional program.

The proposed regional residential incentive program would also provide the following benefits:

- Reduce local agency and aggregate regional administrative overhead
- Allow local agencies to shift resources toward program development, targeting, marketing, installation verification, surveying and data analysis
- Allow local and member agencies to add to Metropolitan's base incentives
- Permit regional advertising and promotion by Metropolitan and ensure consistent customer eligibility throughout the service area
- Allow consistent product implementation and easy program analysis
- Streamline program administration and reporting
- Projected program water saving increases of about 5% each year.

### WEATHER-BASED IRRIGATION CONTROLLERS

The City of Santa Monica, in cooperation with Heal the Bay, and the Upper San Gabriel Valley Water District distributed approximately 220 weather-based irrigation controllers at two separate events this year to qualified homeowners. Eligible homeowners exchanged their old irrigation controller for a more efficient "Smart" controller. Participants were required to bring a previous water bill and were provided with hands-on technical training on how to effectively install and operate their "Smart" controllers. These "Smart"

controller systems have sensors to detect rain and temperature and utilize historic weather data to provide a more water efficient method of irrigating residential landscapes. The controllers from this distribution are expected to yield a total savings of approximately 100 acre-feet.

These distributions were made possible through a Proposition 50 grant administered by the Department of Water Resources. The next phase of this program will be conducted to study implementation steps and water savings.



*Training Class for Smart Controller Recipients in Santa Monica*

### STANDARDS/PROGRAMS EFFORTS

Metropolitan is diligently working with the Environmental Protection Agency (EPA) to develop codes and standards for EPA's WaterSense approved products. The goal of the WaterSense program is to promote more water efficient devices in the marketplace by labeling products that meet the WaterSense's water savings standards and performance requirements. Metropolitan believes that the WaterSense label will increase public awareness of water efficient devices and lead to a greater accessibility of these products in stores. Subsequently, if this label can achieve the public recognition that "Energy Star" has attained, then Metropolitan will benefit by seeing significant water saving increases in its service area.

## COMMERCIAL ACTIVITIES

### COMMERCIAL INCENTIVE PROGRAM

The Save Water – Save a Buck program increased three fold in the amount of rebated devices (34,000) over the last six months from the previous six-month reporting period (9,200 devices). A total savings of about 10,500 acre-feet of water will result from these rebates. This increase is due in large part, to focused marketing efforts promoting conservation in landscape water usage. A large number of rotary nozzle rebates (10,000 units) accounted for this increase. Additionally, the inclusion of multi-family retrofits in the CII accounted for a large number of high efficiency toilets (12,000 units).



*Water Efficient Rotary Nozzle in Operation*

### CALIFORNIA FRIENDLY LANDSCAPE TRAINING

This past year saw an increase of 800 students participating in the California Friendly Landscape Training program from the previous year. A total of about 5,600 students, made up of landscape professionals and residential homeowners, came to learn about water efficient gardening practices and California Friendly plants.

### INDUSTRIAL PROCESS IMPROVEMENT PROGRAM

Two new projects were added to the Industrial Process Improvement Program. In March, an agreement was executed with Marcel Electronics International, an electronics circuit board manufacturer in the city of Orange, for the installation of a water recycling system that saves about 60 acre-feet a year (AFY).



*Marcel Electronics' Pump Skid Controller, De-ionized Water Recycling System*

A second agreement was executed in May with Tri-City Linen Supply; a commercial laundry facility in the city of Riverside, to treat and recycle soiled wash water for a savings of approximately 80 AFY.

**APPENDIX – LRP DETAILS**

**Table 1 Recycling Projects (Ending June 30, 2007)**

MEMBER AGENCY	PROJECT	AGREEMENT DATE <sup>1</sup>	FY 05-06 <sup>2</sup> YIELD (AFY)	FY 06-07 <sup>2</sup> YIELD (AFY)	TOTAL TO DATE <sup>2</sup>		
					YIELD (AF)	Contribution (\$)	
<b>L PROJECTS PROGRAM:</b>							
Calleguas MWD	1. Oak Park/North Ranch Recycled Water Distribution System	1991	977	947	12,848	\$1,978,638	
	2. Conejo Creek Water Recycling Project	1998	2,179	2,414	7,924	\$1,220,311	
Central Basin MWD	3. Lakewood Water Reclamation Project	1989	374	440	7,303	\$1,124,616	
Eastern MWD	4. Rancho California Reclamation Expansion Project	1993	3,353	3,766	32,826	\$5,055,235	
	5. Eastern Regional Reclaimed Water System	1995	0	0	0	\$0	
	6. Eastern Reach 1, Phase II Water Reclamation Project	1996	228	482	3,128	\$481,727	
City of Glendale	7. Glendale Water Reclamation Expansion Project	1989	274	273	4,080	\$628,382	
Inland Empire Utility	8. IEUA Regional Recycling Water Distribution System	1996	4,117	6,531	17,998	\$2,771,630	
Las Virgenes MWD	9. Calabasas Reclaimed Water System Extension Project	1989	700	700	9,243	\$1,423,376	
City of Long Beach	10. Long Beach Reclamation Project	1986	1,232	1,524	24,429	\$3,762,020	
	11. Long Beach Reclaimed Water Master Plan, Phase I System Expansion	1995	74	653	727	\$111,912	
City of Los Angeles	12. Los Angeles Greenbelt Project	1990	484	866	10,165	\$1,565,456	
	13. Sepulveda Basin Water Reclamation Project	1993	0	0	0	\$0	
MWD of Orange County	14. Irvine Reclamation Project	1986	10,000	10,000	163,100	\$25,117,354	
	15. Moulton Niguel Water Reclamation Project	1992	6,220	7,580	60,175	\$9,266,888	
	16. San Clemente Water Reclamation Project	1990	341	410	1,600	\$246,369	
	17. Santa Margarita Water District Water Reclamation Expansion Project	1987	2,900	2,595	28,451	\$4,381,516	
	18. Trabuco Canyon Reclamation Expansion Project	1989	351	380	4,842	\$745,683	
San Diego County Water Authority	19. Oceanside Water Reclamation Project	1991	138	90	1,068	\$178,363	
	20. Santa Maria Water Reclamation Project	1990	207	219	1,620	\$249,542	
	21. Shadowridge Water Reclamation Project	1989	0	0	3,097	\$476,984	
Subtotal			34,149	39,870	394,624	60,786,002	
<b>LOCAL RESOURCE PROGRAM CONVERSIONS:</b>							
City of Burbank	22. Burbank Reclaimed Water System Expansion Project	1994	649	729	5,693	\$1,423,150	
Central Basin MWD	23. Century Reclamation Program <sup>3</sup>	1991		0	0	\$0	
	24. Rio Hondo Water Reclamation Program <sup>3</sup>	1992	3,936	5,290	54,652	\$11,836,625	
City of Glendale	25. Glendale Brand Park Reclaimed Water Project <sup>3</sup>	1996		0	0	\$0	
	26. Glendale Verdugo-Scholl Reclaimed Water Expansion Project II <sup>3</sup>	1994	686	885	8,880	\$2,219,925	
MWD of Orange County	27. Green Acres Reclamation Project <sup>4,5</sup> (MWDOC)	1988	1,034	1,448	20,098	\$4,685,131	
	Green Acres Reclamation Project <sup>4,5</sup> (Coastal)		123	203	1,818	\$483,775	
San Diego County Water Authority	28. Encina Basin WRP Phase I	1993	1,613	0	0	\$0	
	29. Escondido Regional Reclaimed Water Project	1995	221	359	669	\$167,125	
	30. Fallbrook Public Utility District Water Reclamation Project	1989	394	497	7,252	\$1,812,925	
	31. North City Water Reclamation Project	1993	3,705	5,127	30,570	\$6,884,158	
	32. Padre Dam MWD Reclaimed Water System Phase I	1995	782	850	5,353	\$1,338,275	
	33. San Elijo Water Reclamation System	1996	1,135	1,342	6,717	\$1,679,200	
	34. San Pasqual Water Reclamation Project, Phase I	1991	0	0	1,569	\$392,350	
City of Santa Ana	Green Acres Reclamation Project <sup>5</sup> (Santa Ana)	1988	95	124	2,903	\$725,850	
West Basin MWD	35. West Basin Water Reclamation Program	1991	23,686	29,112	262,292	\$65,573,100	
Subtotal			38,059	45,964	408,465	\$99,221,589	
<b>COMPETITIVE LRP 1998:</b>							
City of Santa Monica	36. Dry Weather Runoff Reclamation Facility	1999	82	86	189	\$28,335	
Central Basin MWD	37. Alamitos Barrier Reclaimed Water Project	2000	1,176	307	1,482	\$297,902	
City of Los Angeles	38. Harbor Water Recycling Project	2000	702	1,952	702	\$262,746	
MWD of Orange County	39. Capistrano Valley Non Domestic Water System Expansion	2000	0	0	0	\$0	
	40. Moulton Niguel Phase 4 Reclamation System Expansion	2000	0	0	0	\$0	
	41. Development of Non Domestic Water System Exp. Ladera and Talega	2000	904	2,772	3,676	\$426,284	
San Diego County Water Authority	42. Encina Basin Water Reclamation Program-Phase 1&2	2000	0	2,554	19,087	\$3,982,709	
	43. Olivenhain Recycled Project - Southeast Quadrant	2000	651	1,022	2,404	\$360,525	
	44. Otay Recycled Water System	1999	1,122	1,783	14,717	\$3,223,193	
	45. Rincon del Diablo Recycled Water Program	2000	648	648	1,348	\$231,817	
Subtotal			5,285	11,124	43,604	8,813,511	

**Table 1 (Continued)**

MEMBER AGENCY	PROJECT	AGREE- MENT DATE <sup>1</sup>	FY 05-06 <sup>2</sup> YIELD (AFY)	FY 06-07 <sup>2</sup> YIELD (AFY)	TOTAL TO DATE <sup>2</sup>		
					YIELD (AF)	Contribution (\$)	
<b>COMPETITIVE LRP 2003:</b>							
Eastern MWD	46. Recycled Water Pipeline Reach 16 Project	2004	80	674	754	\$62,549	
Las Virgenes MWD	47. Decker Canyon Water Recycling Facilities Project	2005	0	0	0	\$0	
City of Los Angeles	48. Hansen Area Water Recycling Phase I Project	2005	0	0	0	\$0	
	49. Sepulveda Basin Water Recycling Project Phase 4	2005	0	0	0	\$0	
MWD of Orange County	50. Groundwater Replenishment System Seawater Barrier Project	2004	0	0	0	\$0	
	51. IRWD Recycled Water System Upgrade Project	2004	0	0	0	\$0	
Three Valleys MWD	52. City of Industry Regional Recycled Water Project	2005	0	0	0	\$0	
	53. City of Industry Regional Recycled Water Project	2005	0	0	0	\$0	
Upper San Gabriel Valley MWD	54. Direct Reuse Project Phase IIA	2004	0	461	461	\$92,100	
	55. City of Industry Regional Recycled Water Project	2005	0	0	0	\$0	
Subtotal			80	1,135	1,215	\$154,649	
<b>EXPIRED AGREEMENTS:</b>							
Central Basin MWD	56. Cerritos Reclaimed Water Extension Project <sup>6</sup>	1993	260	0	2,854	\$288,226	
Las Virgenes MWD	57. Las Virgenes Reclamation Project	1993	2,700	0	40,918	\$2,806,369	
MWD of Orange County	58. South Laguna Reclamation Project	1993	860	0	12,852	\$610,167	
San Diego County WA	59. Encina Water Pollution Control Reclamation Project <sup>6</sup>	1992	165	0	1,971	\$113,098	
Three Valleys MWD	60. Walnut Valley Water Reclamation Expansion Project <sup>6</sup>	1991	500	0	5,130	\$240,117	
Subtotal			4,485	0	63,725	\$4,057,977	
<b>TERMINATED AGREEMENTS:</b>							
MWD of Orange County	61. South Laguna Reclamation Expansion Project	1988	0	0	59	\$8,239	
San Diego County WA	62. Rancho Santa Fe Reclaimed Water System	1993	0	0	0	\$0	
Subtotal			0	0	59	8,239	
<b>Operating Projects:</b>	<b>45</b>	<b>Total</b>	<b>82,058</b>	<b>98,092</b>	<b>911,693</b>	<b>\$173,041,967</b>	

1. Original execution date is shown and is not necessarily indicative of the date the project commenced operation.
  2. Totals through June 2007 as reported to date - not all information is complete.
  3. Projects operate separately, but are administered as one agreement for the respective agency as of July 1, 1999.
  4. MWDOC delivers 800 AFY from a project formerly operated by Coastal Municipal Water District.
  5. Green Acres Reclamation Project delivers water to MWDOC and Santa Ana and is approved as one project with a Total Contract Yield of 7,000 AFY.
  6. Project operation continues but production is not certified. Production shown is Contract Yield.
- Note: South Laguna Expansion and Rancho Santa Fe remain on tables but have been terminated.

**Table 2 - Groundwater Recovery Projects**

MEMBER AGENCY	PROJECT	AGREEMENT DATE <sup>1</sup>	FY 05-06 <sup>3</sup> YIELD (AF)	FY 06-07 YIELD (AF)	TOTAL TO DATE <sup>3</sup>	
					YIELD (AF)	Contribution (\$)
<b>GROUNDWATER RECOVERY PROGRAM:</b>						
City of Beverly Hills	1 Beverly Hills Desalter Project	1998	1,241	900	5,756	\$1,438,975
City of Burbank	2 Burbank Lake St. GAC Treatment Plant	1992	0	0	14,848	\$761,119
Eastern MWD	3 Menifee Basin Desalter Project	1996	2,026	2,575	7,222	\$1,805,475
MWDOC	4 Capistrano Beach Desalter Project	1998	0	0	0	\$0
	5 Tustin Desalter Project	1992	2,059	3,224	25,829	\$3,083,145
	6 Irvine Desalter Project	1993	0	0	0	\$0
	7 San Juan Basin Desalter	1998	4,828	3,094	9,540	\$2,385,100
SDCWA	8 Oceanside (Mission Basin) Desalter Project Phase I <sup>4</sup>	1993				
	9 Oceanside (Mission Basin) Desalter Project Phase II <sup>4</sup>	1998	2,033	2,489	31,073	\$5,368,896
	10 Lower Sweetwater Desalter Phase I	1996	2,271	3,237	20,818	\$5,204,475
City of Torrance	11 Madrona Desalination Facility Project	1998	1,789	1,284	9,556	\$2,306,205
West Basin MWD	12 West Basin Desalter Project	1992	0	89	11,342	\$2,835,600
Western MWD / Western	13 Chino Basin Desalination Program, Phase I / Western	1995	4,800	4,800	28,171	\$7,042,850
Western MWD / IEUA	Chino Basin Desalination Program, Phase I / IEUA	1995	4,800	4,800	30,698	\$7,674,475
<b>Subtotal</b>			<b>21,047</b>	<b>26,491</b>	<b>194,854</b>	<b>39,906,315</b>
<b>LOCAL PROJECTS PROGRAM:</b>						
Western MWD	14 Arlington Basin Groundwater Desalter Project	1988	6,015	5,359	74,147	\$21,582,447
<b>Subtotal</b>			<b>6,015</b>	<b>5,359</b>	<b>74,147</b>	<b>\$21,582,447</b>
<b>COMPETITIVE LRP 1998:</b>						
Central Basin MWD	15 Juan Well Filter Facility	2000	0	0	1,398	\$104,865
MWDOC	16 Colored Water Treatment Facility Project	1999	4,471	5,141	23,789	\$2,537,595
Western MWD	17 Temescal Basin Desalting Facility Project	1999	10,000	10,000	54,544	\$5,454,400
<b>Subtotal</b>			<b>14,471</b>	<b>15,141</b>	<b>79,731</b>	<b>\$8,096,860</b>
<b>COMPETITIVE LRP 2003:</b>						
Calleguas MWD	18 Tapo Canyon Groundwater Treatment Plant	2005	0	0	0	\$0
Three Valleys MWD	19 Pomona Well #37-Harrison Well Groundwater Treatment Project	2005	0	0	0	\$0
<b>Subtotal</b>			<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>EXPIRED AGREEMENTS:</b>						
Foothill MWD	20 Glenwood Nitrate Water Reclamation Project	1988	995	0	5,887	\$1,471,775
Las Virgenes MWD	21 Westlake Wells-Tapia WRF Intertie Project	1999	150	150	1,107	\$46,384
<b>Subtotal</b>			<b>1,145</b>	<b>150</b>	<b>6,994</b>	<b>\$1,518,159</b>
<b>TERMINATED AGREEMENTS:</b>						
City of Santa Monica	22 Santa Monica Groundwater Treatment Project	1993	1,800	1,800	24,970	\$0
Three Valleys MWD	23 Rowland Desalter Project	1998	0	0	0	\$0
West Basin MWD	24 Sepulveda Desalter Project	1998	0	0	0	\$0
<b>Subtotal</b>			<b>1,800</b>	<b>1,800</b>	<b>24,970</b>	<b>\$0</b>
<b>Operating Projects:</b>	<b>18</b>		<b>44,478</b>	<b>48,941</b>	<b>380,697</b>	<b>\$71,103,781</b>

1. Original agreement execution date is shown and is not necessarily indicative of the date the project commenced operation.

2. Most contracts allow an additional 20% production.

3. Totals through June 2007 reported to date - not all information is complete.

4. Production for both projects is reported and administered under one agreement.

5. Project production is not certified, however agency reports that Project operates at contract yield.

Note: Oceanside counts as 2 projects