- **Board of Directors**
  Water Planning, Quality and Resources Committee

October 10, 2006 Board Meeting

9-3

Subject

Transmittal of 2006 Integrated Water Resources Plan Implementation Report

Description

In July 2004, Metropolitan's Board approved the Integrated Water Resources Plan Update (IRP Update). The IRP Update provided long-term planning targets for water resources development in Metropolitan's service area through the year 2025. As part of the approval of the IRP Update, the Board directed staff to provide an annual report on the progress toward implementing the IRP targets.

Attachment 1 is Metropolitan's 2006 Integrated Water Resources Plan Implementation Report. A similar report was provided to the Board last year. This year's report includes information for each category of IRP resource development, organized in the following manner:

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

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

Discussion of the changed conditions around the various resource targets helps to identify the extent to which a target is being met. An example of a resource target at risk of not being met is Metropolitan's *In-Region Groundwater Storage*. In the 2005 IRP Implementation Report, staff reported that a reassessment of the strategies to meet the 2010 IRP target for dry-year yield from in-region groundwater storage showed that a portion of the target may not be met unless additional steps are taken. The Metropolitan's Board requested that staff prepare a Groundwater Basin Assessment Study to report on the current status and use of the groundwater basins within the Metropolitan service area. The draft study report will be completed by the end of 2006 and finalized in 2007.

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

This year's report also contains appendices that continue staff's reporting efforts in two areas. Appendix 1 of the report contains detailed justifications for water supplies and programs listed in the report. These justifications are updates of supply justifications for use by member agencies in preparing water supply assessments consistent with growth and development legislation bills SB 221 (2002) and SB 610 (2002). The updated justifications bring the justifications provided with the 2005 Regional Urban Water Management Plan up to date for use by member agencies. Appendix 2 of the report provides detailed information on the development of Conservation and Local Resources, consistent with past semiannual reports provided to the Board.

Policy

By Minute Item 41734, dated Jan. 9, 1996, the Board approved the Integrated Water Resources Plan.

By Minute Item 44696, dated Nov. 20, 2001, the Board adopted the Integrated Water Resources Plan Update workplan.

By Minute Item 45841, dated July 13, 2004, the Board approved the Integrated Water Resources Plan Update report and the regular interval of IRP Implementation Reports and IRP Updates.

Stephen N. Arakawa 9/26/2006
Stephen N. Arakawa *Date*
Manager, Water Resource Management

Jeffrey Kightlinger 10/2/2006
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General Manager

Attachment 1 – 2006 Integrated Water Resources Plan Implementation Report

BLA #4712

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Report

Water Resources Management

2006 IRP Implementation Report

October 2006

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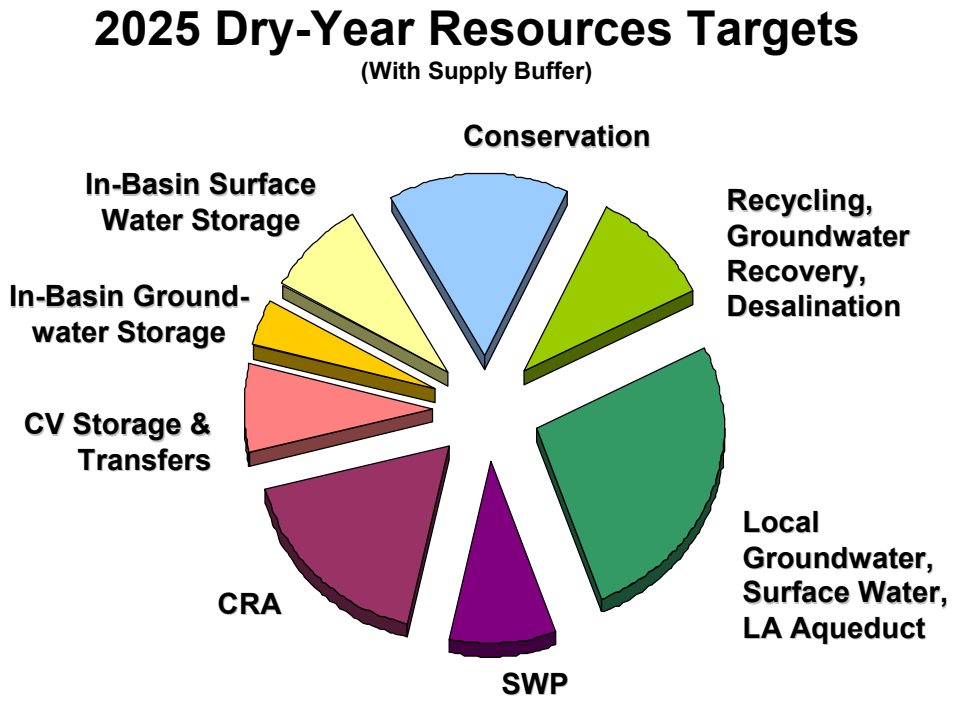
INTRODUCTION

In the early 1990s, 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 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. 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 2006 IRP Implementation Report fulfills that policy direction. A similar report was provided to the Board in November 2005.



Report Framework

Resource Development Categories

The Integrated Resources Plan (and subsequent update in 2004) set 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. 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

Format of the Report

The report provides pertinent implementaton information for each resource category, organized in a common format. There are five sections for each resource category, with the following information provided under each section:

- Description and Overview: This section describes the resource category and the types of programs that are developed and implemented.
- Targets and Current Status: This section restates the dry-year IRP Target as approved in the 2004 IRP Update and highlights key information on recent developments, including quantification of the previous year's development toward the IRP Target.
- Implementation Strategies and Identified Programs: This section describes the strategies being used to implement projects and programs, and discusses existing and identified programs that contribute toward the resource target.
- Implementation Challenges and/or Changed Conditions: This section reviews significant changes that occurred over the previous year that may affect, either negatively of positively, attainment of the IRP targets.
- Cost Information: This section provides costs incurred over the past fiscal year pertaining to the resource target or its components.

CONSERVATION

Description and Overview

Views on water conservation are changing: once associated with mandatory reductions in water use (typically during severe drought), conservation practices are gaining wider acceptance as beneficial, water-use efficiency measures. The region's history of recurrent droughts (such as those in 1976-77 and 1987-1992) support the need to invest in long-term water use efficiency balanced with new supply development and revised management strategies.

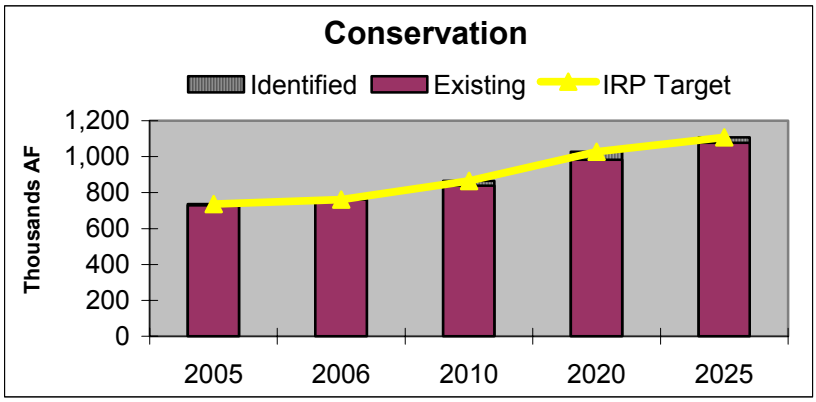
Over the past 20 years, implementation of water-use efficiency programs has heightened individual and public recognition of the importance of conservation and underscores the fact that choices individuals make have an impact on the region's water resource picture. Metropolitan's programs are proactive efforts to meet supply needs and help sustain our standard of living without onerous mandatory drought restrictions on water use.

IRP conservation targets were set based on an estimate of full regional compliance with established Best Management Practices (BMPs). The BMPs encompass active conservation and expand on code-based conservation savings (code-based conservation includes ongoing refinements to plumbing codes and retrofit-on-resale ordinances in many Southern California cities). Total conservation targets for Metropolitan's service area use 1980 as a base year for measuring savings, and include the effects of increasing retail water rates as well as the code-based water savings from plumbing codes.

Targets

The IRP Update targets for conservation savings include both Metropolitan-incentivized conservation and other conservation savings. The targets are:

- 865,000 acre-feet by 2010;
- 1,028,000 acre-feet by 2020;
- 1,107,000 acre-feet by 2025.



- In FY 2005/06, Metropolitan's Conservation Credits Program (CCP) incentivised an estimated 6,300 acre-feet of water savings.
- About 943,000 acre-feet of total cumulative water conservation savings have been developed by *active* residential, landscape, and commercial conservation from the inception of the CCP through the end of FY 2006.
- Total annual water conservation savings were approximately 762,000 acre-feet per year in FY 2005/06. This is an increase of about 30,000 acre-feet per year over FY2004/05.

Implementation Strategies and Identified Programs

Metropolitan staff, in cooperation with its member agencies, developed a Five-Year Conservation Strategy Plan in March 2005. The plan outlined current and future strategies to meet IRP targets, and focused on three areas: 1) Implementing more active conservation through the use of incentives and partnerships, 2) Achieving savings through legislative measures where appropriate, and 3) Pursuing specific implementation strategies outlined in Metropolitan's Conservation Strategy Plan, jointly developed with its member agencies.

The Conservation Strategy Plan identifies active conservation programs that are projected to add a total of approximately 145,000 acre-feet of water saved by the year 2009 (the last year of the current 5-year Plan). These active conservation programs include:

- Executing a 10-year residential master conservation funding agreement with member agencies using a higher $195 per acre-foot saved incentive rate;
- Adding new eligible devices to core incentive program;
- Promoting the use of higher efficiency toilets. (As of July 1, 2006, Metropolitan is only funding ultra-low flush toilets [1.6 gallons per flush] that meet high standards for maintaining water savings. Beginning January 1, 2009, Metropolitan, will only fund high efficiency toilets (HET's) that use less than 1.28 gallons per flush.)
- Issuing a competitive Request for Proposals in May under the new Enhanced Conservation Program with incentives up to $250 per acre-foot established by the Board in December 2005;
- Bolstering outdoor conservation programs like Weather-Based Irrigation Controllers (WBIC) and Protector del Agua training that work in conjunction with *California Friendly*™ plants & devices;
- Continuation of *California Friendly*™ Model Home programs and *bewaterwise.com* advertising campaigns; and
- Introducing new Industrial Process Improvement agreements and programs.

Implementation Challenges and/or Changed Conditions

The challenge to meeting the IRP targets for conservation is to devise effective approaches to implement newly identified programs. Staff is aggressively working to develop relationships with other interests, which can lead to mutually beneficial conservation programs. Other challenges exist in understanding and quantifying the water savings from various programs - such as WBICs and California Friendly™ landscaping, and encouraging greater public participation in active conservation programs.

Cost Information

In FY 2006, Metropolitan invested approximately $10.6 million in various conservation programs and incentives. See the attached report, *Semiannual Report on Metropolitan's Local Resources and Conservation Programs*, for more conservation-related information.

LOCAL RESOURCES – RECYCLING, GROUNDWATER RECOVERY & SEAWATER DESALINATION

Description and Overview

Water recycling, groundwater recovery, and seawater desalination are regional resources that add balance to Southern California's diverse portfolio of resource options.

Water recycling provides extensively treated wastewater for applicable municipal and industrial uses. Common uses include landscape irrigation(e.g. golf course, parks, freeway and street medians, etc.), agricultural irrigation, and commercial and industrial purposes (e.g. cooling towers, laundromats, toilet flushing, carpet dying, etc.).

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

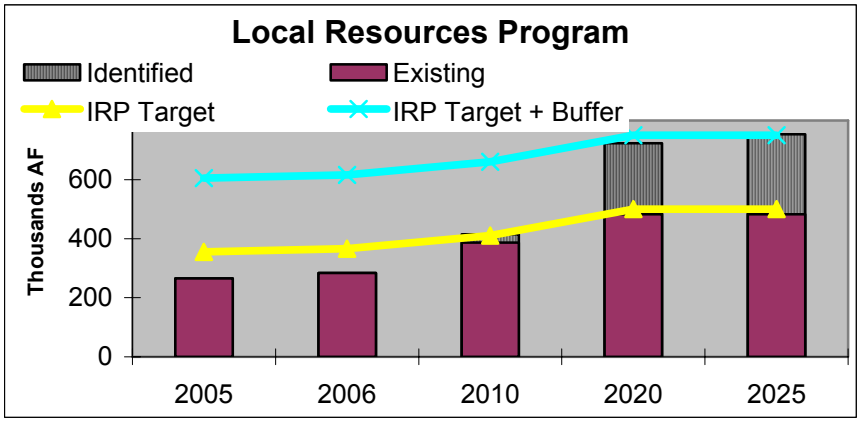
Seawater desalination achieves removal of salts from ocean water and provides that water to potable water uses.

While recycled water and groundwater recovery projects in the Southern California region are primarily developed by local water agencies, many newer projects have been developed with financial incentives provided through Metropolitan's Local Resources Program (LRP). The LRP is a performance-based program that provides incentives 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 is a total regional combined target, and includes programs developed entirely by member and retail agencies without Metropolitan funding, and the programs developed with Metropolitan's LRP funding program.

Targets

The IRP Update set total regional water recycling and groundwater recovery targets of:

- 410,000 acre-feet in 2010;
- 500,000 acre-feet in both 2020 and 2025.
- 750,000 acre-feet in 2020 and 2025 including the planning buffer.



- In FY 2006, 127,700 acre-feet of LRP-funded supplies were delivered – an increase of 16,000 acre-feet from FY 2005.
- Approximately 270,000 acre-feet of total recycled and recovered water supplies were produced regionally, including supplies receiving Metropolitan LRP funding
- 10 of the 13 competitively selected projects from the 2003 Request For Proposals for LRP funding have been successfully contracted for future production.
- 3 desalination project agreements have been signed.
- Existing and identified local resource program production is expected to help exceed IRP targets in 2020 and 2025.

Planning Supply Buffer

In approving the 2004 IRP Update, Metropolitan's Board directed that a planning buffer supply is necessary to hedge against evolving resource implementation risks and supply/demand uncertainty. The IRP Update called for identification of buffer strategies over and above those supplies described in the IRP Targets, in the amount of 500,000 acre-feet. This equals approximately 10 percent of projected retail water demand in 2025, with identified strategies split between imported and local supplies.

Implementation Strategies and Identified Programs

2003 Request For Proposals

In 2003, Metropolitan issued a competitive Request for Proposals (RFP) for local projects. At the close of the December 2005 program deadline, 10 of the 13 competitively selected projects from the 2003 RFP were under contract. Three project sponsors chose to not execute agreements because environmental documentation was not complete or local supply improvements were reprioritized. Financial incentives requested under this current RFP total approximately $140 million, which will be used to develop projects over the next 25 years. These new groundwater recovery and recycled water projects are expected to collectively produce about 58,000 acre-feet per year. The following new LRP projects have started production in FY 2006:

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

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

Seawater Desalination

Metropolitan has entered into three agreements (with the City of Long Beach, West Basin Municipal Water District, and the Municipal Water District of Orange County) to develop seawater desalination projects and has offered contracts with the City of Los Angeles and the San Diego County Water Authority to develop projects.

Implementation Challenges and/or Changed Conditions

The status and production of local water recycling and groundwater recovery projects can change from year to year. The trends for these programs show that production is increasing overall; however year-to-year fluctuations can occur due to changes in demand for recycled water. These fluctuations can be in response to changing weather, operational criteria, construction and permitting issues, and other factors. Recent efforts by Metropolitan staff and member agencies through the Integrated Area Studies and the System Overview Study have shown that previous databases on local projects not receiving LRP funding were incomplete. These efforts have helped to clarify both existing and future local projects in order to more accurately track the progress toward meeting the IRP goal.

The most significant potential challenge to implementing local resource programs lies with large-scale seawater desalination. Seawater desalination is a potential new resource for the region, and there are uncertainties in the process of moving from small-scale demonstration projects to larger scale projects: development decisions, technological issues, and environmental considerations are some of the challenges in implementing these projects.

Cost Information

In FY 2006, Metropolitan contributed approximately $24.5 million toward the production of over 127,000 acre-feet of LRP supplies. See the attached report, *Semiannual Report on Metropolitan's Local Resources and Conservation Programs*, for more LRP-related information.

Metropolitan has invested about $213 million, in partnership with its member agencies, to develop local resource programs, helping to produce more than 1,150,000 acre-feet of recycled and treated groundwater since incentive programs began over 23 years ago.

COLORADO RIVER SUPPLIES

Description and Overview

Metropolitan's contract with the federal government provides a basic apportionment of 550,000 acre-feet per year of Colorado River water. Metropolitan also possesses a priority for an additional 662,000 acre-feet per year, depending upon the availability of surplus supplies.

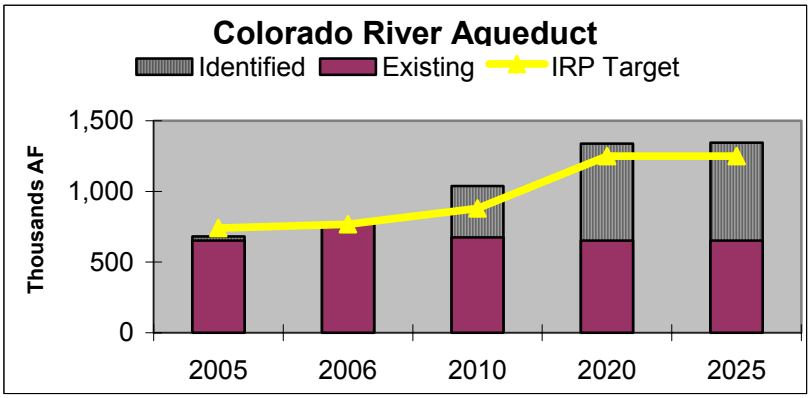
By a 1929 Act of the California Legislature and as affirmed by the U.S. Supreme Court decree in Arizona v California, California is required to limit its annual use to 4.4 million acre-foot basic annual apportionment of Colorado River water plus one-half of any available surplus water.

Metropolitan's Colorado River Aqueduct (CRA) has the capacity to deliver 1,250,000 acre-feet of water per year into its service area. This entire capacity was used in previous years to deliver surplus and unused water from other agencies in addition to its basic apportionment, but the availability of that water has diminished. The IRP target for Colorado River supplies includes not only Metropolitan's basic apportionment, but also supplies from storage and transfer programs that will combine to provide full use of the CRA's capacity when needed by the region.

Targets

The IRP Update set total Colorado River dry-year targets of:

- 879,000 acre-feet in 2010;
- 1,250,000 acre-feet in both 2020 and 2025.



- Metropolitan has a contractual ability to increase supplies from the Palo Verde Irrigation District Land Management, Crop Rotation And Water Supply Program up to 110,000 acre-feet per year.
- Metropolitan negotiated and is participating in the "Intentional Created Surplus" (ICS) demonstration program and has begun storing water in Lake Mead, with a calendar year 2006 goal of 50,000 acre-feet.
- Metropolitan continued to work with other agencies to implement programs identified in the 2003 Quantification Settlement Agreement.

Implementation Strategies and Identified Programs

Quantification Settlement Agreement

On October 10, 2003, Metropolitan, the Imperial Irrigation District (IID), and the Coachella Valley Water District (CVWD), the San Diego County Water Authority (SDCWA), the United States, and the State of California executed the Quantification Settlement Agreement (QSA) and other related agreements. As it is implemented, the QSA and related agreements continue to support Metropolitan's development plans for CRA deliveries, allowing for agricultural conservation, water transfers, and potential surplus water availability that was identified in the 1996 IRP.

Potential Agricultural Surplus

Projected CRA supplies available to Metropolitan assume that water use by agricultural agencies with higher priorities (Priorities 1,2, and 3b) is consistent with their total allotments of Colorado River water. However, Priorities 1,2, and 3b, including PVID and the Yuma Project Reservation Division (the two agricultural agencies that hold the highest priorities to the use of Colorado River water), do not technically have a cap on their use of water. These agencies are able to divert as much water as is reasonably required to irrigate specified lands. Metropolitan, being the lowest priority rights holder in California, may have its water supply affected based on PVID and Yuma use. If those two agencies use more than 420,000 acre-feet in a year (a quantity documented in the QSA), Metropolitan's supply will decrease by a like amount. If they use less than 420,000 acre-feet, Metropolitan's supply will increase by a like amount. Based on history, actual use by these agencies does vary widely, and in any given year either scenario may occur. Metropolitan would also benefit if IID and CVWD underuse their quantified allotments.

2005 is an example of a year where additional supplies from low agricultural use became available. Due to wet conditions in the agricultural regions, approximately 183,600 acre-feet of water became available to Metropolitan. While the risk of potential liability from high agricultural use remains, Metropolitan's conservation programs with these agricultural agencies with higher Colorado River priorities helps mitigate against potential shortfalls.

Other Programs

A significant part of the development strategy for Colorado River supplies is tied to the implementation of the QSA. While in the short-term some programs are not yet in place to meet the full target, it is expected that these programs will be developed over time. Programs are currently operating, nearly complete, or under way include:

- IID/MWD Conservation Program;
- Coachella and All-American Canal Lining Projects (SDCWA and San Luis Rey Indian Water Rights Settlement);
- IID/San Diego County Water Authority Transfer;
- Palo Verde Land Management and Crop Rotation (PVID) Program;
- Interim Surplus Guidelines.

Lake Mead Storage

Separate from the QSA Programs, Metropolitan is participating in the "Intentional Created Surplus" (ICS) demonstration program. Implementation of a long-term ICS program would permit Metropolitan to store water in Lake Mead for withdrawal during subsequent years of need. Establishment of such a program is subject to completion of an Environmental Impact Statement (EIS) currently being prepared by the Bureau of Reclamation (see *Drought Management* below).

Metropolitan and the Bureau of Reclamation have agreed to a two-year demonstration program to create ICS water for storage in Lake Mead. Under this demonstration program, Metropolitan will make available 50,000 acre-feet of ICS water for storage in Lake Mead in each calendar year 2006 and 2007 from the water saved under the PVID/ Metropolitan Land Fallowing Program.

Advance Delivery Account

Metropolitan has a number of exchange and delivery agreements with Desert Water Agency and Coachella Valley Water District (DWCV). While these programs increase the amount of State Water Project supplies available to Metropolitan, they also create an obligation to deliver a like amount of Colorado River supplies to these agencies. On an ongoing annual basis, Metropolitan has a fixed obligation of 35,000 acre-feet, and a variable obligation based on a State Water Project Table A amount of 171,100 acre-feet (actual amount varies by SWP allocation). These agreements could technically require Metropolitan to deliver 206,000 acre-feet (at 100% SWP allocation) of Colorado River water to DWCV.

To effectively manage the potential single-year water supply impacts of this obligation, Metropolitan negotiated access to a groundwater banking account in the Coachella Valley. This account allows Metropolitan to store up to 600,000 acre-feet of water, and use that storage to meet the water supply obligations of the exchange and delivery agreements. Use of this account during dry State Water Project years provides a net increase in overall water supplies for Metropolitan.

Implementation Challenges

Development of the QSA Programs in other Colorado River user service areas within California is critical for reaching the CRA supply target. Of those programs, the following face implementation challenges:

- Salton Sea Restoration Transfer
- All-American Canal Lining Project

The Salton Sea Restoration Transfer is a conditional transfer of supply from IID to Metropolitan that is scheduled to terminate after 2017. Implementation of the supply transfer is subject to a recommendation to the Legislature by the Secretary for Resources and subsequent action by the Legislature.

The All-American Canal Lining Project is the subject in litigation in Federal Court. In July 2006 the U.S. District Court in Nevada issued a summary judgment that would allow the project to be constructed and implemented as scheduled. Subsequently, on appeal the Ninth Circuit Court granted an injunction against all work pending a final decision in the case anticipated to be issued by spring 2007.

Drought Management

Below-normal runoff in the Upper Colorado River Basin in the 2005/2006 water year marked the sixth below normal year in the last seven years, and is projected to be the driest seven-year period in 100 years of record keeping. At the end of the water year, Lake Mead is projected to be at its lowest level in 41 years.

The U.S. Bureau of Reclamation is preparing a *Draft Environmental Impact Statement on Lower Basin Shortage Guidelines* and *Coordinated Management Strategies for Lake Powell and Lake Mead, Particularly Under Low Reservoir Conditions*. The Draft EIS is scheduled to be released in February 2007, the Final EIS in September 2007, and the Record of Decision in December 2007.

One of the alternatives that will be evaluated in the EIS is the Seven Basin State's Preliminary Proposal Regarding Colorado River Interim Operations. The proposal consists of a combined set of programs, operational, and accounting procedures with respect to the operation of Lake Mead and Lake Powell, including the long-term ability for Metropolitan and others to effectively store water in Lake Mead.

Metropolitan does not anticipate adverse water supply impacts resulting from the implementation of shortage guidelines because California's 4.4 million acre-foot apportionment has a higher priority than a portion of Arizona and Nevada's apportionments during shortage conditions.

Cost Information

In addition to the regular costs associated with its basic Colorado River apportionment, in 2006 Metropolitan is expending $9.1 million for its conservation program with IID. Expenditures of nearly the same magnitude are expected in 2007.

Start up and annual payments for the PVID program are estimated to be $45.1 million in 2006 (which include initial signup payments) and $9.9 million in 2007.

STATE WATER PROJECT SUPPLIES

Description and Overview

The State Water Project, operated by the California Department of Water Resources (DWR), provides water supplies to 29 urban and agricultural agencies throughout California. SWP water supply contracts specify an ultimate firm yield of 4.17 million acre-feet. Metropolitan's share of the total SWP is about 46% based on its contracted "Table A" amount of 1,911,500 acre-feet.

Metropolitan's SWP water passes through the San Francisco Bay-Sacramento/San Joaquin Delta (Bay-Delta). The Bay-Delta can pose challenges for SWP supplies due to water quality issues, variable hydrology and environmental standards that can affect pumping operations.

The State Water Project (SWP) target includes water delivered through the State Water Contract. This includes Table A contract supplies, use of carryover storage in San Luis Reservoir, use of Article 21 interruptible supplies.

This target also includes exchange and delivery agreements with Desert Water Agency and Coachella Valley Water District. These agreements have the effect of increasing the SWP supplies available to Metropolitan, and providing Metropolitan with access to the two agencies' rights to carryover storage and other contractual provisions. Metropolitan does incur an obligation to deliver Colorado River water to these agencies as a result of these agreements (see Colorado River section).

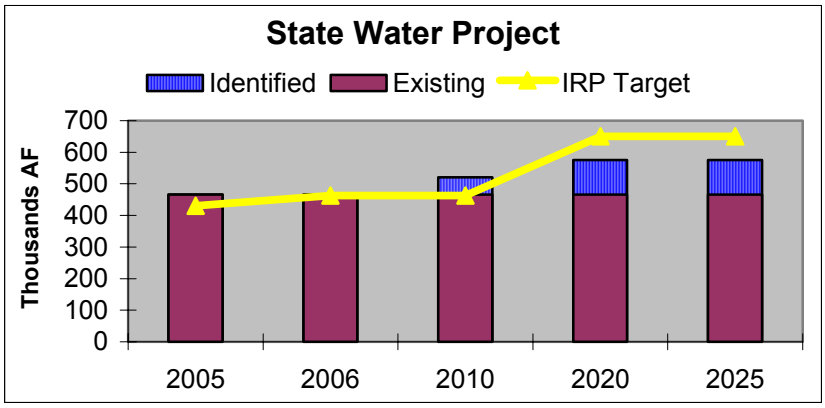
It is important to note that the target does *not* include flexible storage available to Metropolitan from terminal reservoirs Lake Perris and Castaic Lake (see In-Region Surface Water Storage). Also, storage and transfer programs that use the SWP system for conveyance purposes are captured in the IRP target for Central Valley Storage and Transfer Programs.

Targets

Metropolitan's Board set goals for SWP supplies with the adoption of CALFED Policy Principles in August 1999. The policy set a long-term average annual supply goal of 1,500,000 acre-feet per year. For dry years, which is relevant for the IRP Update Target., the principles called for:

- 650,000 acre-feet of dry-year supplies from the SWP by 2020.

Note: The 650,000 acre-foot target excludes water from transfer and storage programs that convey water through the SWP facilities.



- Based on DWR's 2005 State Water Project Reliability Report, staff estimates that 465,550 acre-feet of dry-year water supply is available from the State Water Project.
- Metropolitan is partnering with other stakeholders to develop a Bay-Delta Conservation Plan (BDCP) that will provide state and federal Endangered Species Act coverage for SWP and CVP operations and improvements.
- Metropolitan has not identified specific programs or projects that will meet IRP targets for 2020 & 2025

Implementation Strategies and Identified Programs

Metropolitan's implementation approach for the SWP Target depends upon full use of the current State Water Contract provisions, which include its basic Table A supplies, Article 21 (interruptible), carryover storage, and Turnback Pool supplies (as referred to above, flexible storage is not included in this IRP target, but is a component of the In-Region Surface Water Storage target). In addition, The DWCV agreements provide Metropolitan with the use of 171,100 of allocated Table A amounts (actual supply will vary with SWP allocations). This provides additional SWP supplies in every year, and includes access to carryover storage capacity and other SWP programs that are based on Table A amounts.

Increases in the dry-year yield of the SWP will require increases in the reliability of State Water Contract provisions. Staff continues to work with DWR on project operations and potential facility improvements. Longer term increases will require implementation of various negotiated agreements and programs. These agreements and programs include the Bay-Delta Conservation Plan Agreement, the South Delta Improvement Program and the Sacramento Valley Water Management (Phase 8 Settlement) Agreement.

Bay-Delta Conservation Plan Agreement

Metropolitan is a partner in the development of a Bay-Delta Conservation Plan (BDCP) that will provide state and federal Endangered Species Act coverage for SWP and CVP operations and improvements. The BDCP will assist in ensuring that Metropolitan's water supply from the SWP remains reliable and that a more stable regulatory environment exists to allow future water quality and supply projects to proceed and to preserve and enhance Delta fisheries. A completed BDCP with stakeholders' agreement is expected in early 2008.

South Delta Improvement Program

Under the *1994 Bay-Delta Accord* and subsequent improvements identified in the CALFED Bay-Delta Program, SWP supplies are expected to become more reliable. With approval of permits for expanded use of pumping capacity at the SWP Banks Pumping Plant, average SWP supplies may increase due to enhanced ability to pump wet year water at advantageous times. Implementation of programs identified in the CALFED Record of Decision also provides an avenue for improving future SWP reliability. Based on recent analyses, future average annual SWP supplies from the South Delta Improvement Program are estimated at 130,000 acre-feet.

The Sacramento Valley Water Management (Phase 8 Settlement) Agreement

Metropolitan is a partner in a settlement agreement resulting from the State Water Resources Control Board (SWRCB) Bay-Delta Water Rights Phase 8 proceedings. The 2002 Sacramento Valley Water Management Agreement was designed to ensure that Bay-Delta water users equitably share the responsibility of meeting flow requirements.

The agreement includes short-term work plans to develop and manage Sacramento Valley water resources needs, environmental needs under the SWRCB's Water Quality Control Plan, and export needs for water supply and water quality. Longer-term workplans will be developed to ensure full build-out of the program. These longer-term workplans will provide further improvements to Metropolitan's SWP supply reliability.

Expected supplies from the Phase 8 Settlement Agreement are approximately 55,000 acre-feet and may increase further, particularly in later years with full implementation of the program.

Implementation Challenges and/or Changed Conditions

2005 State Water Project Reliability Report

DWR released its Final 2005 State Water Project Delivery Reliability Report, which provides State Water Contractors with estimates of SWP yield and reliability. This report updates a report issued in 2003, but with different modeling assumptions. DWR's estimates of available water supply from the SWP affects Metropolitan's SWP planning approach, because it sets the baseline comparison for development toward IRP Targets. Based upon the recent report, long-term average SWP deliveries are projected to increase slightly, and multiple-dry-year deliveries are not significantly impacted as compared to the previous report. However, minimum SWP deliveries show a significant decrease in Table A contract supplies. DWR issued a technical memorandum advising State Water Contractors that modeling artifacts existed in the data that they released, and that the models did show that additional water from more realistic operations reflecting carryover storage and other provisions would enhance SWP dry-year deliveries to a level comparable in quantity to the previous reliability report. Metropolitan staff will continue to work with DWR to solidify Metropolitan's understanding of the delivery capability of the SWP, and to improve that capability consistent with the IRP Target.

Bay-Delta Pelagic Organism Decline

Recent low pelagic organism population counts in the Delta have heightened concern about impacts to the ecosystem. These organisms include Federally listed (Threatened) Delta Smelt, which live in the mid-level waters of the Bay-Delta. If evidence can be found that the SWP is even partially responsible for the declines (either by affecting water quality or through "take" of the key species), commensurate regulatory pumping restrictions may impact SWP supplies.

A multi-agency group, including DWR, the Department of Fish and Game, the Environmental Protection Agency and the U.S. Fish and Wildlife Service, is tasked with addressing the issue. Several factors are under investigation for their contribution to the decline. These factors include changes in the Delta food web, presence of non-native and invasive species, various contaminants and pollutants, and water diversions.

The various ongoing Bay-Delta programs need continued support from federal & state administrations to ensure continued water quality, supply reliability, and environment improvements in Bay-Delta. Additional analysis and monitoring will need funding to ensure protection and improvements to key fisheries. Environmental concerns and uncertainty related to the decline of pelagic organisms may affect the development of identified Bay-Delta programs.

Bay-Delta Risk Management

Much concern has been focused recently on the state of Delta levees and the potential risks of levee failures from flooding, earthquakes and other causes. Failure of levees could introduce seawater into Delta channels and adversely affect pumping of SWP supplies. Metropolitan is participating in the Delta Risk Management Study being undertaken by DWR and urges that it be completed as soon as feasible. Metropolitan also supports Governor Schwarzenegger's proposal to develop a long term Delta Strategic Plan that would consider mitigation of all significant risk factors affecting the Delta and provide for long term environmental and economic uses of the Delta's land, water, and other resources.

Cost Information

Normal SWP rates and charges were approximately $406 million in fiscal year 2006.

CENTRAL VALLEY STORAGE AND TRANSFER PROGRAMS

Description and Overview

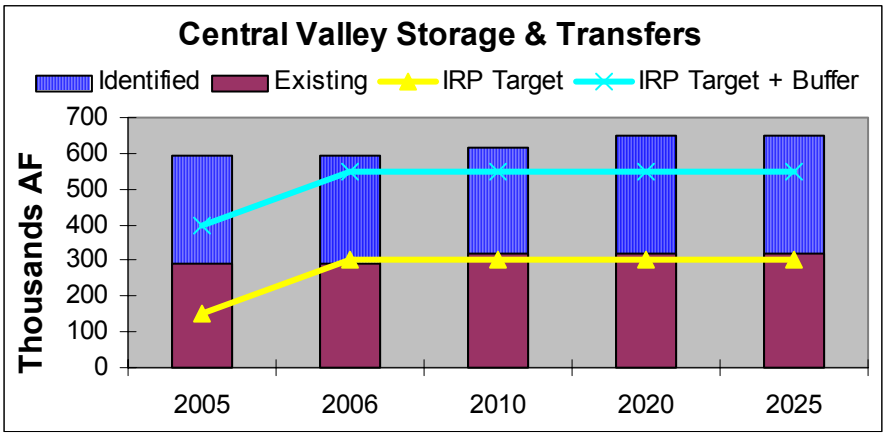
A new direction set by the 1996 IRP was to develop additional supply reliability through the California Aqueduct by entering into water storage and transfer agreements with partners in the Central Valley. Metropolitan's strategy has been to focus on voluntary programs designed to improve regional reliability while benefiting the partners selling the water supply or providing storage. The storage and transfer target includes programs that bank Metropolitan's SWP water supplies, as well as short and longer-term water transfer programs using SWP facilities.

Metropolitan's success in developing dry-year storage and transfer agreements results from changes since the 1996 IRP which include:

- Development of significant water storage and transfer program partnerships in the Central Valley;
- Recognition by some Central Valley agriculture interests that participation in transfer programs can be a good business practice;
- More cooperation between Metropolitan, DWR and federal agencies to facilitate water transfers;
- Recognition of the value of groundwater storage strategies.

Targets

The 2004 IRP Update set a target of 300,000 acre-feet dry-year supply for Central Valley transfer and storage programs. Half of the *planning buffer*, 250,000 acre-feet has also been allocated to this resource target.



- Currently, 492,000 acre-feet of dry-year yield have been developed in Central Valley storage & transfer programs.
- Potential partners and programs have been identified to meet IRP targets.
- Additional programs or actions will be considered as needed to meet future demands (planning buffer)

Implementation Strategies and Identified Programs

Water Transfers and Options

Metropolitan continues to pursue transfer agreements and relationships with entities in the Central Valley. While agreements thus far have been on a single-year basis, the additional capabilities provided by spot market transfers and options could provide 200,000 acre-feet or more in a given year. This flexibility will help ensure that Metropolitan meets this resource target.

Potential Transfer / Storage Programs

Metropolitan is investigating potential storage and transfer programs with a goal of developing an additional 100,000 acre-feet of dry-year supply capability. Currently Metropolitan has a pilot program with Mojave Water Agency, and is considering additional programs with various partners.

Implementation Challenges and/or Changed Conditions

The primary implementation challenges for water transfers from north of the Delta include operational constraints to moving water through the Sacramento-San Joaquin Delta. The South Delta Improvement Program would help Metropolitan take full advantage of the storage programs being developed both inside and outside of Metropolitan's service area.

Metropolitan has recently initiated negotiations with its existing SWP storage partners to improve respective program capabilities and overall reliability for this resource target. These partners include:

- Arvin-Edison Water Storage District;
- Kern-Delta Water District;
- San Bernardino Valley Municipal Water District.

Other programs in operation include Semitropic Water Storage District and Desert Water Agency/Coachella Valley Water Agency, and a demonstration project currently exists with Mojave Water District, which may be expanded in the future.

Cost Information

Nearly $11.1 million in various costs were incurred for FY 2005/06 Central Valley storage programs. No funds were expended in FY 2005/06 for water transfers.

IN-REGION GROUNDWATER STORAGE

Description and Overview

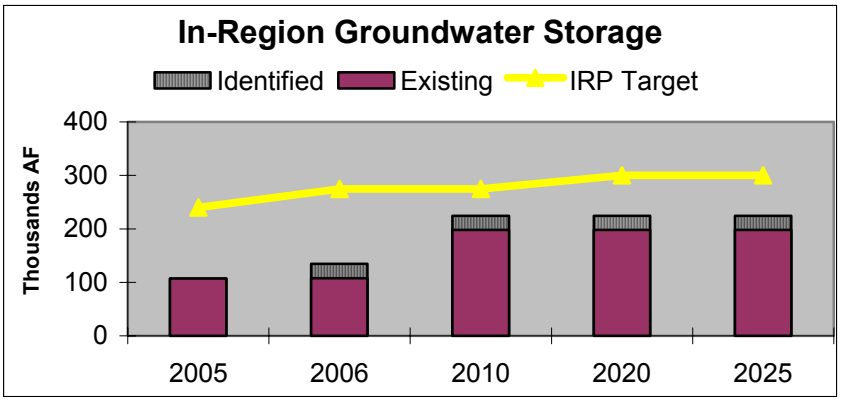
Groundwater basins within Metropolitan's service area provide significant water storage and operational flexibility for Southern California. Conjunctive use storage in these groundwater basins is an important part of maintaining and enhancing the reliability of the region's future water supplies. An example is last year's Supplemental Storage Program: Metropolitan's water supplies were abundant from a wet winter across the state, so to encourage storage in the region, Metropolitan offered discount rates to its member agencies to store more water than previously planned. The water is available at Metropolitan's call for up to six years.

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 and the Replenishment Rate program.

Targets

The 2004 IRP Update set the following dry-year yield targets for in-region groundwater storage:

- 275,000 acre-feet for 2010;
- 300,000 acre-feet for 2020 and 2025.



- Currently, groundwater storage has been developed to provide about 135,000 acre-feet of dry-year supply.
- Identified In-Region Groundwater Storage program components currently may not meet IRP targets.
- Staff is conducting a Board-initiated groundwater basin assessment in order to explore expanded in-region groundwater storage opportunities.

Implementation Strategies and Identified Programs

Cyclic Storage

As Metropolitan moves toward contractual conjunctive use agreements within the service area, older cyclic storage agreements (pre-delivery of long-term replenishment water) have been replaced where appropriate. Currently, Metropolitan has approximately 60,000 acre-feet of cyclic storage in the Main San Gabriel Basin providing for 20,000 acre-feet per year for three years toward the IRP target.

Long-term Replenishment Program

Due to significant precipitation throughout much of California in the 2005/06 water year, Metropolitan has encouraged its member agencies to take advantage of abundant supplies by storing additional water in the long-term replenishment program. The in-region groundwater storage strategy has identified an average of 66,000 acre-feet per year for three years toward the IRP targets from this program.

Supplemental Storage Program

Metropolitan offered the Supplemental Storage Program during FY 2005/06 to encourage storage of abundant water supplies. About 16,000 acre-feet were stored in this program that will be available at Metropolitan's call over the next five years.

Proposition 13 Projects

Metropolitan has utilized Proposition 13 funds to develop eight contractual groundwater storage programs to date. These agreements will provide a total of nearly 200,000 acre-feet of storage with 65,000 acre-feet of dry-year-yield. At the close of FY 2005/06, over 110,000 acre-feet have been stored in these programs.

North Las Posas Groundwater Storage Program

Metropolitan has financed the construction of 18 aquifer storage and recovery wells in the North Las Posas (NLP) Basin pursuant to an agreement with the Calleguas Municipal Water District. These 18 wells comprise two phases of the program and will be on-line and fully operating prior to 2010. Calleguas MWD is completing the conveyance infrastructure to allow full operation of the wellfields. At the close of FY 2005/06, nearly 54,000 acre-feet have been stored in this program, largely through in-lieu means.

Raymond Basin Conjunctive Use Program

The Foothill Conjunctive Use Program being developed under the Proposition 13 contractual programs is expected to begin providing dry-year yield of 3,000 acre-feet by 2010 in phase 1 of the Raymond Basin Program. Planning and analyses have progressed among Pasadena, Foothill MWD, Metropolitan and the Raymond Basin Management Board with a goal to provide an additional 22,000 acre-feet of dry-year yield. In May 2006, Metropolitan authorized funding for preliminary design and preparation of environmental documentation for the Raymond Basin Conjunctive Use Program.

Other Identified Programs

Metropolitan continues to discuss opportunities to expand groundwater conjunctive use storage programs throughout its service area. These and other potential programs will help to meet the groundwater storage IRP targets. Identified potential programs include:

- Elsinore Basin Conjunctive Use Program
- Chino Basin Storage Program Expansion
- Orange County Basin Storage Program Expansion
- North Las Posas Phase 3
- Central Basin Storage Program
- West Basin Storage Program
- San Fernando Basin Storage Program
- San Jacinto Basin Storage Program
- City of San Diego Storage Program

Implementation Challenges and/or Changed Conditions

Groundwater Basin Assessment Study

In the 2005 IRP Implementation Report, staff reported that a reassessment of the strategies to meet the 2010 IRP target for dry-year yield from in-region groundwater storage showed that a portion of the target may not be met unless additional steps are taken. The Board's Water Planning, Quality, and Resources Committee requested that staff prepare a Groundwater Basin Assessment Study to report on the current status and use of the groundwater basins within the Metropolitan service area. The draft technical study report will be completed by the end of 2007, and finalized shortly thereafter. The report will provide a baseline for discussions focusing on how to move forward to meet the 2010 and and 2020/25 IRP goals for dry-year groundwater yield.

Metropolitan staff will continue to develop and implement strategies, such as issuing a Request for Proposals, to meet the in-basin groundwater storage IRP goals. Preferred strategies, consistent with findings from the Groundwater Basin Assessment Study, will be brought before Metropolitan's Board for consideration as soon as possible.

Cost Information

Funds that Metropolitan has already spent or allocated to develop groundwater conjunctive use programs include:

- $28.2 million for North Las Posas (phases 1 & 2);
- $66.8 million for Proposition 13 storage projects (includes $26.5 million Metropolitan capital, and $40.3 million from Prop. 13 grants).

IN-REGION SURFACE WATER STORAGE

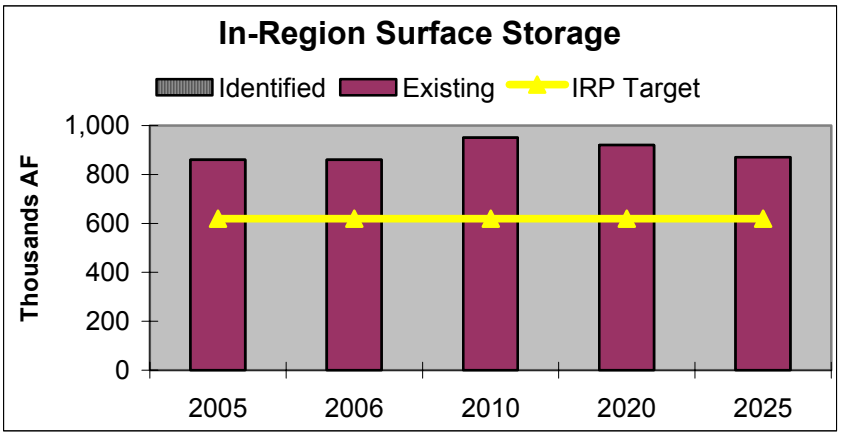
Description and Overview

Metropolitan established long-term in-region surface storage guidelines in the 1996 IRP. In that report, storage capacity requirements for dry-year yield and for emergency needs were determined, consistent with Metropolitan's Emergency Storage Planning Criteria from the Diamond Valley Lake Environmental Impact Report. . Development needs for dry-year storage capacity is determined by evaluation total emergency and dry-year yield needs, and subtracting dedicated emergency storage capacity.

Surface storage significantly improves Metropolitan's ability to manage wet or dry hydrologic years of imported supplies primarily because of its generally unrestricted put and take capability. In combination with conveyance improvements like the Inland Feeder, surface storage will allow Metropolitan to take advantage of high quantity wet-year SWP supplies, and to manage fluctuating Colorado River supplies.

Targets

The IRP identified a 2020 in-region surface water target of 620,000 acre-feet of dry year storage



- Diamond Valley Lake and State Water Contract flexible storage provisions allowing the use of DWR's Castaic Lake and Lake Perris provide dry-year yield in excess of IRP Targets.
- Storage Capacity available for dry-year yield will decrease in the future as increasing regional water demands increase requirements for emergency storage capacity.
- For planning purposes, dedicated emergency storage requirements were increased at Diamond Valley Lake to compensate for the reduction of capacity at Lake Perris.
- Storage levels for dry-year yield at all three surface reservoirs are essentially at maximum capacity.

Implementation Strategies and Identified Programs

Because Metropolitan has already met or exceeded the IRP targets for dry-year surface storage, no additional programs or strategies are being developed by staff for in-region surface water storage.

By 2025, Metropolitan will have dedicated approximately 650,000 acre-feet of dry year carryover storage capacity in DVL, Lake Mathews, and Lake Skinner, and 219,000 acre-feet of capacity in the SWP terminal reservoirs.

The region will see an increase in available dry-year surface storage capacity in yield when the Emergency Storage Project (ESP) in San Diego County is completed. The ESP will provide San Diego County with approximately 90,000 acre-feet of emergency storage capacity, and will offset a like amount of regional emergency storage capacity requirements.

Despite the increase in capacity due to the ESP, available surface storage capacity for dry-year yield will continue to decrease over time, as the requirements for emergency storage capacity are increased due to increasing demands at the retail level. Projections show that this decrease will eventually require an adjustment to the surface storage implementation strategy.

Implementation Challenges and/or Changed Conditions

Lake Perris Dam

In June 2005, Lake Perris Dam was found to be structurally at risk with certain seismic event scenarios. In response, DWR reduced the reservoir's capacity by 40% to protect public safety. DWR intends to remedy the seismic risk at the dam and evaluate alternative future storage scenarios. The reduced capacity potentially affects both dry-year surface storage capacity and emergency storage capacity. For planning purposes, staff has increased the reserved emergency capacity at Diamond Valley Lake to account for the reduction of capacity at Lake Perris. While this assumption affects the amount of dry-year capacity available at Diamond Valley Lake, it also solidifies the availability of the flexible storage remaining at Lake Perris. It is important to note that, while this planning assumption ensures that Metropolitan is correctly accounting for both emergency storage and dry-year storage, DWR has made it clear that it intends to provide Metropolitan the full amount of flexible storage identified in its State Water Contract from somewhere in the State Water Project system.

Cost Information

Metropolitan has not incurred any additional costs for this resource during the past year.

LOCAL PRODUCTION

Description and Overview

In addition to local recycling and groundwater recovery, groundwater and surface water production accounts for a significant portion of the region's total water supply. Normal groundwater and surface water resources in the region provide an average annual supply of 1.3 million acre-feet. Los Angeles Aqueduct deliveries also provide a significant amount of water supply to the City of Los Angeles, offsetting the need for imported water supplies.

Targets

Because normal groundwater, surface water, and Los Angeles Aqueduct deliveries are autonomous from a regional perspective, Metropolitan did not establish specific resource development targets for these deliveries. However, because they do make up a large portion of the total regional water supply, estimates of these locally produced water supplies are key in IRP reliability analyses. Current estimates for production from these resources have been verified through the recent Integrated Area Studies, and staff will continue to coordinate information and monitor factors affecting these resources.

Implementation Strategies and Identified Programs

Through the Integrated Area Study's local supply survey and subsequent member agency meetings, Metropolitan underwent a data collection and reconciliation process to update and improve estimates of member agencies' local supplies. This process included:

- Improving projections of groundwater and surface water supplies;
- Separating groundwater recovery from other groundwater supplies;
- Refining recycled water supply projections;
- Identifying new projects planned by the member agencies, along with a classification of their level of development.

The knowledge gained in this ongoing process will improve Metropolitan's estimates and refine the role of local water supplies in future IRP processes.

Implementation Challenges and/or Changed Conditions

Information from Metropolitan's member agencies indicates a slight increasing trend for local production over time. Most of this increase is due to increased use of groundwater basins to deliver recycled water for groundwater recharge, and to sustain seawater barriers. Staff will continue to monitor the progress and issues involved, and to ensure that recycled water production and increases in groundwater production are accurately accounted for in local supply projections.

Cost Information

Metropolitan has not incurred any additional costs for this resource during the past year.

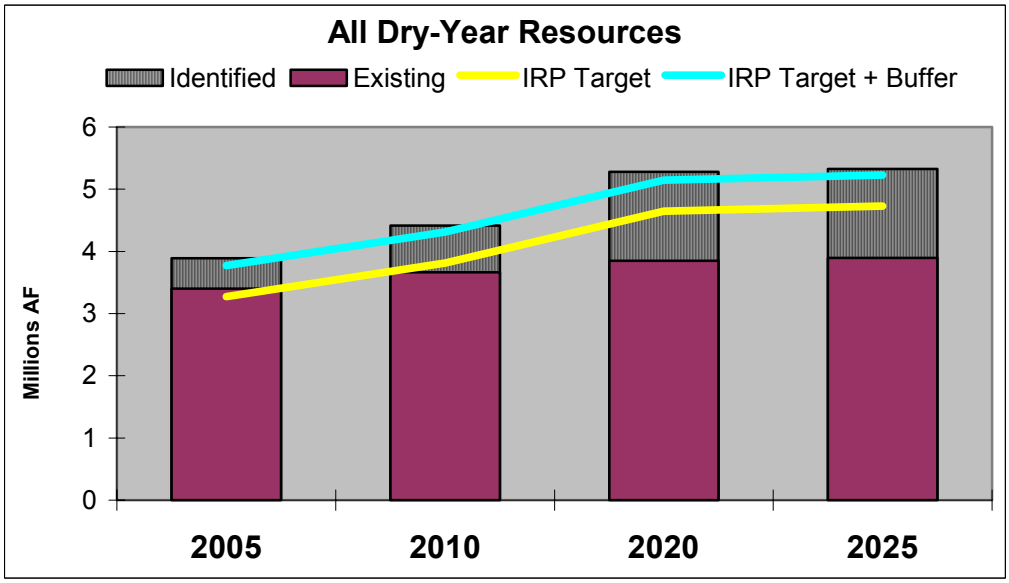
CONCLUSIONS

This 2006 IRP Implementation Report reflects the fact that, with respect to specific resource development categories, significant challenges in some resource areas will require changes in strategies and implementation approaches in order to reach the long-term IRP Targets, However, because of the implementation progress being made in other resource areas, and because of additional development identified through the Planning Buffer Metropolitan expects to maintain future supply reliability through its diversified water resources portfolio. The IRP's adaptive planning framework, together with annual implementation reporting and a regular updating cycle, enables Metropolitan and its member agencies to continue to refine and adjust as new planning information becomes available.

Overall Finding

When viewed in total, the maintenance of existing projects and programs and the implementation of identified dry-year supplies will meet the total IRP targets set forth in the 2004 IRP Update through 2025. However, as shown in this report, some components or programs of the resource targets have been identified as less certain, at risk, or not available for future implementation.

Where needed, future resource opportunities consistent with the planning buffer, adopted as part of the 2004 IRP Update, will be identified and brought to Metropolitan's Board for implementation consideration.



Target Evaluation by Resource Category

The following are key findings and conclusions about the resource development status of the different IRP Target categories.

Conservation

In FY 2005/06, new active conservation efforts, combined with estimates of code-based and price-based water conservation savings, are approximately 762,000 acre-feet per year - an increase of about 30,000 acre-feet per year over FY2004-05.The Five-Year Conservation Strategy, along with refinements to Metropolitan's incentive programs that have been made over the past year, will continue to move the region toward meeting the IRP Target.

Local Resources – Recycling, Groundwater Recovery and Seawater Desalination

Local resources programs production estimates are projected to fall short of the 2010 target based on current production and projected production from projects currently in development. However, with the projects that have been identified to date expects production of local recycling, groundwater recovery and seawater desalination supplies within its service area to exceed both the 2020 and 2025 targets. This is anticipated from additional program deliveries that are already planned to come on line after 2010.

The local resources target is associated with half of the Planning Supply Buffer (or 250,000 acre-feet), and further programs will be identified, developed and implemented as needed and directed by Metropolitan's Board. 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.

Colorado River Aqueduct

The Quantification Settlement Agreement has identified specific programs and actions for Colorado River supplies that will increase the amount of supplies over the planning horizon. The strategy for meeting the remainder of the 2020 and 2025 IRP targets for dry-year yield relies upon the proposed Intentionally Created Surplus program under which Metropolitan will be able to store water in Lake Mead for use in later years. Agreements with the Bureau of Reclamation for a long-term ICS program is subject to ongoing environmental review scheduled to be complete in December 2007.

State Water Project

A significant issue affecting the SWP resource targets is DWR's 2005 State Water Project Delivery Reliability Report. The report contains modeling estimates that indicates the potential for a minimum SWP delivery as low as 4-5 percent of the full Table A contract amount, compared to previous estimates of 20 percent of Table A... However, DWR has indicated that some modeling artifacts exist from that study that show that additional water supply may be available in a dry-year. Adjustments for those modeling artifacts show that available water supply may not be significantly affected in a dry year. Staff is continuing to work with DWR to refine estimates of dry-year supply.

Another significant issue taken into account is that increased SWP pumping capability in the Delta, while increasing transport capabilities for water transfers, would not provide additional Table A dry-year supplies.

While significant, the dry-year shortfall for the SWP target is not considered the only critical factor, in part because on the average, supplies from the Delta are expected to provide storage opportunities. Though the SWP IRP targets are based on dry-year supply capabilities, these supplies are supplemented with the storage and transfer programs that Metropolitan has developed that use the SWP system.

In average and wet years, the anticipated increased SWP pumping capability becomes critically important for managing Metropolitan's SWP storage and transfer programs: by pumping water in wet years and banking that water south of the Delta, the need for dry-year supplies from the Delta is mitigated. Operating the system in this way provides significant flexibility for water supply managers and also environmental benefits. In dry years, the ability to move water supplies from transfer agreements through the Delta and/or the SWP system also is key to Metropolitan's dry-year supply strategy.

Central Valley Storage & Transfers

Currently, 492,000 acre-feet of dry-year water have been developed for Central Valley storage & transfer programs, exceeding IRP targets. Single year transfers provide great flexibility for this dry-year resource to meet targets.

In-Region Groundwater Storage

This resource continues to fall short of IRP targets. At the Board's direction, Staff has initiated a Groundwater Basin Assessment Study to report on the current status and use of the groundwater basins within the Metropolitan service area. The draft technical report will be completed by the end of 2006, and finalized shortly thereafter. The report will provide a baseline for discussions focusing on how to move forward to meet the 2010 and 2020/25 IRP goals for dry-year groundwater yield.

In-Region Surface Water Storage

The region has developed dry-year surface water capacity that exceeds the IRP Target through 2025. Staff has adjusted available dry-year capacity to account for reduced capacity in Lake Perris, but some uncertainty is introduced into Metropolitan's In-Region Surface Storage resource. No other adjustments have been made at this time.

Appendix 1:

Justifications for Water Supply Projections

A.1 JUSTIFICATIONS FOR SUPPLY PROJECTIONS

Legislation authored by Senator Sheila Kuehl (SB221 – now Water Code §10613 et seq.) and Senator Jim Costa (SB610 – now Water Code §66473.7) requires water retailers to demonstrate that their water supplies are sufficient for certain proposed subdivisions and large development projects subject to the California Environmental Quality Act (CEQA). Although Metropolitan and other wholesalers do not have verification responsibilities under this legislation, information provided by Metropolitan may be useful to retailers in complying with these responsibilities. This Appendix provides the basis for the water availability contained in this report, by major source of supply. Such bases and proofs are required for supply verification under the legislation. Links to copies of the legislation can be found at http://www.groundwater.water.ca.gov/water_laws/index.cfm#otherleg. Throughout this appendix, references are made to Metropolitan's operating budget and its long-term capital investment plan. The most recent operating budget (for Fiscal Year 2005/06) was adopted at the June 14, 2005 Board Meeting. A copy of the budget summary can be found at http://www.mwdh2o.com/mwdh2o/pages/finance/Exec2005_web.pdf. The most recent Capital Investment Plan can be found at http://www.mwdh2o.com/mwdh2o/pages/finance/CIP2005_web.pdf. Another document of interest related to Metropolitan's water supply planning is its annual report to the state legislature in compliance with Senate Bill 60 of 1999(Hayden).[1] This requires that Metropolitan report on its progress in increasing its emphasis on cost-effective conservation, recycling and groundwater recharge.

A.1.1 Colorado River Aqueduct Deliveries

A. Colorado River Supplies

Metropolitan obtains water from the Colorado River pursuant to its contracts with the United States. Metropolitan holds the 4th and 5th priorities to water available for use in California with agricultural districts holding priorities 1-3. In addition, Metropolitan has entered into a number of agreements that allow it to receive supplies unused by agricultural districts for its own use.

Rationale For Expected Supply

Historical Record

Water supplies available under Metropolitan's Colorado River water entitlements have been delivered since 1939. By existing contract, water will continue to be available because of California's senior water rights to use of Colorado River water. The historical record for available Colorado River water indicates that Metropolitan's fourth priority entitlement to 550,000 acre-feet has been available in every year and can reasonably be expected to be available over the next 20 years.

Written Contracts or Other Proof

Metropolitan's entitlement to Colorado River water is based on a series of agreements and compacts collectively known as "The Law of the River,"[2] which govern the distribution and management of Colorado River water. The following documents specifically determine Metropolitan's dependable supplies:

- *1931 Seven Party Agreement.*[3] *The 1931 Agreement established priorities for the use of Colorado River water available to California, which consists of its basic annual apportionment of 4.4 million acre-feet plus one-half of any surplus supply. Palo Verde Irrigation District (PVID), Yuma Project (Reservation Division), Imperial Irrigation District (IID), Coachella Valley Water District (CVWD), and Metropolitan are the entities that hold these priorities. These priorities are included in the contracts that the Department of the Interior executed with the California agencies in the 1930s for water from Lake Mead. Metropolitan has the fourth priority to California's basic apportionment of Colorado*

River water and utilizes this water – 550 taf per year – every year. In addition, Metropolitan has access to additional Colorado River water – up to 662 taf per year – through its fifth priority in the California apportionment.

- *Metropolitan's Basic Contracts.*[4] Metropolitan's 1930, 1931, and 1946 basic contracts with the Secretary of the Interior permit the delivery of 1.212 million acre-feet per year when sufficient water is available. Metropolitan's 1987 surplus flow contract with Reclamation permits the delivery of water to fill the remainder of the Colorado River Aqueduct when water is available.
- *Consolidated Court Decree.*[5] The 1964 U.S. Supreme Court Decree confirmed the normal supply year apportionments to Arizona, California, and Nevada of 2.8 million acre-feet per year, 4.4 million acre-feet per year and 300 taf per year, respectively. The Decree also permits the Secretary of the Interior to make water available that is unused by one of the states for use in the other two states. In addition, it permits the Secretary to make surplus water available. The 1964 Decree and subsequent Decrees addressed present perfected rights (PPRs) to Colorado River water, some of which were not encompassed by the 1931 Seven Party Agreement. Uncertainty around the position the California PPRs had relative to the priorities in the 1931 Seven Party Agreement was resolved by the QSA and related agreements.
- *2003 Quantification Settlement Agreement* (QSA) and several other related agreements were executed in October 2003.[6] The QSA quantifies the use of water under the third and sixth priorities of the Seven Party Agreement. The QSA and related agreements provides the numeric baseline needed to measure conservation and transfer programs by which unused agricultural priority water would be made available for diversion by Metropolitan. It also allows for implementation of agricultural conservation, land management, and other programs identified in the 1996 IRP.

Financing

Metropolitan's operating budget includes the cost of delivering fourth priority Colorado River water, which is paid from water sales revenue.

Federal, State, and Local Permits/Approvals

Metropolitan's fourth priority Colorado River water is currently available, and this priority assures delivery of the Basic apportionment.

B. IID - Metropolitan Conservation Program

Source Of Supply

The IID-Metropolitan Conservation Program provides an annual supply that is delivered to Metropolitan's service area via its CRA. In 1988, Metropolitan executed a Conservation Agreement to fund water efficiency improvements within the Imperial Irrigation District's (IID) service area in return for the right to divert the water conserved by those improvements. The program consists of structural and non-structural measures, including the concrete lining of existing canals, the construction of local reservoirs and spill-interceptor canals, installation of non-leak gates, and automation of the distribution system. Other implemented projects include the delivery of water to farmers on a 12-hour basis rather than a 24-hour basis and improvements in on-farm water management through the installation of tailwater pumpback systems, drip irrigation systems, and linear-move irrigation systems.

Expected Supply Capability

The IID-Metropolitan Conservation Program has been operational since 1990. It was initially expected to yield 106 taf per year of conserved water. This initial program agreement provided Coachella Valley Water District (CVWD) the option to call up to about 45 taf per year if needed to meet its demands under non-surplus conditions. Execution of the QSA has reduced CVWD's annual option to 20 taf

increasing the minimum supply to MWD to 80 taf.

Rationale For Expected Supply

Historical Record

The IID-Metropolitan Conservation Program has been operational since 1990. Existing agreements have extended the initial term to at least 2041 or 270 days after the termination of the QSA, whichever is later, and they guarantee Metropolitan a minimum of 80 taf per year. With operations beginning in 1990, the program has conserved as much as 109,460 acre-feet per year to date. The historical record indicates that Metropolitan's expected minimum supply of 80 taf per year has been available since 1996 and would be available over the next 36 years at least.

Written Contracts or Other Proof

Metropolitan's annual supply from the IID-Metropolitan Conservation Program is based on four agreements.

- *1988 IID-Metropolitan Conservation and Use of Conserved Water Agreement.* Imperial Irrigation District and Metropolitan executed this Agreement in December 1988 for a 35-year term following completion of program implementation (1998– 2033).
- *1989 Approval Agreement.* This Agreement secured the approval of the Palo Verde Irrigation District and Coachella Valley Water District to not divert an amount of water equal to the amount conserved except under limited circumstances. The Agreement was executed in December 1989.
- *1989 Supplemental Approval Agreement.* This Agreement was executed in December 1989 between Metropolitan and Coachella Valley Water District to coordinate Colorado River diversions and the use of the conserved water provided by the Program.
- *2003 Amendments to 1988 Agreement and 1989 Approval Agreement.* These amendments specify that CVWD, at its request, may receive 20 taf annually from the program yield leaving the remaining water for use by Metropolitan

Financing

The water efficiency improvements under this Program have already been funded, constructed, and put into operation. Metropolitan's 10-year capital and O&M budgets (referenced above) include the cost of operating, maintaining, and delivering the conserved water under the IID-Metropolitan Conservation Program.

Federal, State, and Local Permits/Approvals

A comprehensive environmental review process supported implementation.

- *EIR for Program.* The Imperial Irrigation District Board certified the final Environmental Impact Report for the Program in December 1986.[7]
- *EIR to Complete the Program.* The Imperial Irrigation District Board certified the final Environmental Impact Report for the Completion Program in June 1994[8]
- *Program EIR for Quantification Settlement Agreement.* Metropolitan's Board certified the final Program Environmental Impact Report for the QSA in June 2002.[9]
- *Addendum to the QSA Final Program EIR.* Metropolitan's Board adopted the Addendum to the QSA Final Program Environmental Impact Report in October 2003. Metropolitan's Board also adopted the Findings of Fact and Statement of Overriding Considerations, and Mitigation and Monitoring and Reporting Program at that time.

C. Palo Verde Irrigation District Land Management, Crop Rotation And Water Supply Program

Source Of Supply

At its May 11, 2004 meeting, Metropolitan's Board authorized a 35-year land management, crop rotation, and water supply program with the Palo Verde Irrigation District. Under the program, participating farmers in PVID are being paid to reduce their water use by not irrigating a portion of their land. A maximum of 29 percent of lands within the Palo Verde Valley can be fallowed in any given year. Under the terms of the QSA, water savings within the PVID service area will be made available to Metropolitan. Palo Verde Valley lands have the first priority for Colorado River water under the water delivery contracts with the U.S. Bureau of Reclamation. Partial implementation of the program began in January 2005, and when fully implemented, the program is estimated to provide up to 111 taf per year. The agreement also specifies that the program's minimum fallowed acreage be estimated to provide a minimum of 26 taf per year.

Expected Supply Capability

It is estimated that the PVID/Metropolitan Program would provide up to 111 taf per year of additional Colorado River water. This water would be available in any year as needed and in accordance with the provisions described in the agreements with Palo Verde Valley landowners and PVID.

Rationale For Expected Supply

Historical Record

Metropolitan and PVID tested the concept of developing a water supply for Metropolitan by entering into an agreement in 1992.[10] Agreements were signed with landowners and lessees in the Palo Verde Valley to forego irrigation for a two-year period from August 1992 to July 1994. Water unused by PVID, in the amount of 186 taf, was stored in Lake Mead for Metropolitan, but was subsequently lost to flood control releases. Both PVID and Metropolitan signed approved Principles of Agreement in 2001. PVID issued the Final Environmental Impact Report for the Proposed Palo Verde Irrigation District Land Management, Crop Rotation and Water Supply Program in September 2002.[11] Partial implementation of the final program began in January 2005. In 2005, the water savings in PVID are estimated to be 103 taf, and in 2006 a further 94 taf is expected.

Written Contracts or Other Proof

- *August 2004 Forbearance and Fallowing Program Agreement.* This agreement establishes the PVID/Metropolitan Program, which provides for a solicitation of and provisional approval of landowner participation offers, specifies the process for incorporating offers into agreements with landowners, and states the terms and conditions for fallowing, including payments made by Metropolitan.
- *Landowner Agreements for Fallowing in the PVID.* These agreements specify an escrow process to consummate the transaction, an easement deed to encumber land for fallowing, a tenant agreement to subordinate a tenant's lease to the agreement and easement, and an encumbrance agreement to subordinate any encumbrance (e.g. a mortgage) to the easement. These agreements also state the landowner's fallowing obligation, payments to be made by Metropolitan, and land management measures to be implemented.
- *2005 Interim Fallowing Agreements.* Beginning in January 1, 2005, these bridge agreements were executed to permit landowners to fallow land on an interim basis through July 31, 2005, with commencement of their participation in the PVID/Metropolitan Forbearance and Fallowing Program on August 1, 2005.
- *July 2005 Interim Fallowing Agreements.* These agreements were executed to permit landowners to

fallow land on an interim basis as part of their participation in the PVID/ Metropolitan Program with the close of escrow on August 1, 2005.

Financing

Metropolitan's annual O&M budget (referenced above) includes the cost of the PVID/Metropolitan Program.

Federal, State and Local Permits

A Notice of Preparation for the PVID/ Metropolitan Program was published on October 29, 2001. PVID issued the Final Environmental Impact Report for the Proposed Palo Verde Irrigation District Land Management, Crop Rotation, and Water Supply Program in September 2002 (see reference above).

D. Salton Sea Restoration Transfer

Source Of Supply

The source of supply for the Salton Sea Restoration Transfer is Colorado River water conserved by IID for transfer to Metropolitan.

Expected Supply Capability

The expected supply is up to 1.55 million acre-feet. This water would be made available during a period that could start as early as 2007 and will end after 2017.

Rationale For Expected Supply

The program is being developed in accordance with legislative direction to the Resources Secretary to facilitate implementation of the Colorado River transfers and other programs under the QSA. The Resources Secretary was directed to undertake a restoration study to determine a preferred alternative for the restoration of the Salton Sea ecosystem and the protection of wildlife dependent on that ecosystem. As part of this study, the Resources Secretary is to determine the availability to Metropolitan of up to 1.6 million acre-feet of water that would be conserved by IID and made available to Metropolitan, with the net proceeds placed in the Salton Sea Restoration Fund. By December 31, 2006, the Resources Secretary is required to submit a plan to the Legislature that identifies a preferred alternative for the restoration of the Salton Sea and the availability of water to Metropolitan. By the end of 2006, 50,000 acre-feet of this water will have already been conserved to permit management of the salinity of the Salton Sea, leaving as much as 1.55 million acre-feet available for transfer to Metropolitan beginning in 2007.

Program Facilities

The existing CRA facilities would transport the water from Lake Havasu to Metropolitan. Currently, conserved water is being provided through land fallowing. Additional conservation facilities may be constructed by IID.

Historical Record

Metropolitan has existing contracts with the Secretary of the Interior for delivery of Colorado River water. Additionally, under separate 1988 and 1989 agreements and 2003 amendments, Metropolitan receives Colorado River water made available by IID through conservation activities within IID.

Written Contracts or Other Proof

- *2003 Quantification Settlement Agreement.*[12] Umbrella agreement for the related agreements entered into by Metropolitan, IID, CVWD, and other agencies, which together are intended to consensually settle longstanding disputes regarding the priority, use, and transfer of Colorado River

water in California from agricultural to urban users. The QSA establishes the structure for the further distribution of Colorado River water among Metropolitan, IID, and CVWD for up to 75 years based upon the water budgets set forth in the agreement.

- *2003 Colorado River Water Delivery Agreement.* Agreement among IID, CVWD, SDCWA, Metropolitan, and the Secretary of the Interior memorializing the agreement of the Secretary to deliver Colorado River water to California water users in accordance with the water budgets established by the QSA and related agreements.
- *2003 Agreement between the Imperial Irrigation and the Department of Water Resources for the Transfer of Colorado River Water.* One of the QSA-related agreements that specifies IID's obligations to conserve water for transfer to Metropolitan and DWR's commitments and obligations to IID in facilitating the transfer.
- *2003 Agreement between The Metropolitan Water District of Southern California and the Department of Water Resources for the Transfer of Colorado River Water.* One of the QSA-related agreements that specifies MWD's obligations to pay for water conserved by IID for transfer to Metropolitan as facilitated by DWR.
- *2003 Quantification Settlement Agreement Joint Powers Authority Creation and Funding Agreement.* One of the QSA-related agreements, this agreement among the Department of Fish and Game, CVWD, IID, and SDCWA provides for the funding of a portion of the water that would be conserved by IID for transfer to Metropolitan.
- *QSA Implementing Legislation.* The 2003 State Legislature passed three bills to facilitate implementation of the QSA-- Senate Bill 277 (Ducheny), Senate Bill 317 (Kuehl), and Senate Bill 654 (Machado) that include provisions for the Salton Sea Restoration Transfer. The QSA implementing legislation was amended in the 2004 legislative session by Senate Bill 1214 (Kuehl).
- *Deadline for Report to Legislature.* The QSA implementing legislation requires the Resources Secretary to submit the completed restoration study on or before December 31, 2006 that includes a Program EIR along with a determination of the availability of the Salton Sea Restoration Transfer water to Metropolitan.

Financing

- *The Resources Secretary is undertaking the Salton Sea restoration study with $20 million appropriated from state Proposition 50 bond funds.*
- Approximately 1/2 of the 1.55 million acre-feet transfer will be conserved by IID using funds managed by the QSA Joint Powers Authority with the remainder of the IID conservation funded by water transfer payments from Metropolitan.
- DWR will facilitate the transfer by making direct specified payments to IID and by collecting certain payments from Metropolitan, the proceeds of which would be deposited into the Salton Sea Restoration Fund.

Federal, State and Local Permits for Construction

Under the direction of the Resources Secretary, DWR is in the initial stages of preparing a Program EIR for the plan. As of early September 2006 the Draft PEIR had yet to be released for public review. The Final PEIR is scheduled for submittal to the Legislature in December 2006 after which the Legislature is expected to consider issuing a Notice of Determination. Additional state legislation would be required before the transfers can take place.

E. Lake Mead Storage Program

Source Of Supply

The source of supply for the Lake Mead Storage Program is Colorado River water saved by extraordinary conservation measures that is left in storage in Lake Mead.

Expected Supply Capability

The potential annual supply is up to 400 taf. This water would be made available during a period that could start as early as 2008.

Rationale For Expected Supply

The program is included in the Seven Basin State's Preliminary Proposal Regarding Colorado River Interim Operations.[13] The proposal consists of a package of programs and operational, and accounting procedures with respect to the operation of Lake Mead and Lake Powell. The proposal is one of the alternatives being evaluated in NEPA documentation being prepared by the by the Bureau of Reclamation (USBR) for the development of Lower Basin shortage guidelines and coordinated management strategies for Lake Powel and Lake Mead under low reservoir conditions.

Metropolitan and the USBR have agreed to a two-year demonstration program to create "Intentional Created Surplus" (ICS) water for storage in Lake Mead. Under this demonstration program Metropolitan, from the water saved under the PVID/Metropolitan Program, will make available 50,000 acre-feet of ICS water for storage in Lake Mead in each calendar year 2006 and 2007.

ICS water stored in Lake Mead is subject to a 5 percent reduction to provide a collective water supply benefit for all Colorado River water entitlement holders. Beginning in the second year of storage, the remaining ICS water is subject to an annual 2.8 percent reduction to compensate for evaporation losses.

A subsequent agreement would be required to recover ICS water created during the demonstration program. A decision to release or use the ICS water is contingent upon the completion of necessary environmental compliance and appropriate agreements among Arizona, California, and Nevada. It is anticipated that the release of ICS water will be addressed in the NEPA documentation being prepared for the development of Lower Basin shortage guidelines and coordinated management strategies for Lake Powel and Lake Mead under low reservoir conditions.

Program Facilities

The ICS water is to be stored in Lake Mead behind Hoover Dam. When released for use by MWD the existing CRA facilities would transport the water from Lake Havasu to Metropolitan.

Historical Record

Metropolitan has existing contracts with the Secretary of the Interior for storage of water in Lake Mead and delivery of Colorado River water. The ICS water is created through extraordinary conservation through the PVID/Metropolitan Program.

Written Contracts or Other Proof

- *2006 Agreement between Metropolitan and Reclamation to Implement a Demonstration Program to Create Intentionally Created Surplus Water.* Agreement providing for the creation and storage of ICS water in Lake Mead.
- *2006 Seven Basin State's Preliminary Proposal Regarding Colorado River Interim Operations*. Proposal submitted by the Seven Colorado River Basin States that includes provisions for a program to store ICS water in Lake Mead and its subsequent release.

Financing

- ICS water is created and stored in Lake Mead at no additional cost to MWD.
- USBR, with its funds appropriated by Congress, is preparing the necessary NEPA documentation that is required before ICS water can be released for use.

Federal, State and Local Permits for Construction

No construction is associated with the ICS program. The demonstration program has been approved and is being implemented by USBR. NEPA documentation and any necessary permits required to release ICS water are being prepared and pursued by USBR.

F. Extension of the Interim Surplus Guidelines

Source Of Supply

The source of supply for the extension of the Interim Surplus Guidelines is Colorado River water stored in Lake Mead.

Expected Supply Capability

Under the existing Interim Surplus Guidelines[14] the potential annual supply would, depending on reservoir conditions, be up to the volume necessary to fill the Colorado River Aqueduct to an annual flow of 1.250 million acre-feet from the otherwise normal year supply available to MWD. During the proposed extended period from 2017 to 2025, the available supply to MWD would be 250 taf.

Rationale For Expected Supply

Extension of the Interim Surplus Guidelines is included in the Seven Basin States Preliminary Proposal Regarding Colorado River Interim Operations (discussed above under Section E.).

Extension of the Interim Surplus Guidelines would include a modification to the existing guidelines[14] in that the provisions for declaration of a "Partial Domestic Surplus" would be eliminated.

The extension would continue to provide for a declaration of a "Full Domestic Surplus" through 2016 when Lake Mead elevation is above 1,145 feet that would provide the additional volume of water needed by Metropolitan to fill its aqueduct to an annual flow of 1.250 million acre-feet. During the extended period (2017-2025) a "Domestic Surplus" would be declared when Lake Mead elevation is above 1,145 feet and would provide MWD with 250 taf annually.

Program Facilities

Colorado River water is stored in Lake Mead behind Hoover Dam. When released for use by MWD the existing CRA facilities would transport the water from Lake Havasu to Metropolitan.

Historical Record

Metropolitan has existing contracts with the Secretary of the Interior for storage of water in Lake Mead and delivery of Colorado River water in a total volume exceeding 1.250 million acre-feet annually.

Written Contracts or Other Proof

- 2001 Colorado River Interim Surplus Guidelines.
- 2006 Seven Basin State's Preliminary Proposal Regarding Colorado River Interim Operations. Proposal submitted by the Seven Colorado River Basin States that includes provisions for a program to store ICS water in Lake Mead and its subsequent release.

Financing

- ICS water is created and stored in Lake Mead at no additional cost to MWD.
- USBR, with its funds appropriated by Congress, is preparing the necessary NEPA documentation that is required before ICS water can be released for use.

Federal, State and Local Permits for Construction

No construction is associated with the Interim Surplus Guidelines or its proposed extension. USBR is preparing NEPA documentation and is pursuing the necessary permits that may be required to extend the Interim Surplus Guidelines.

14 The existing Interim Surplus Guidelines are contained in the January 25, 2001 issue of the *Federal Register*, pages 7780 through 7782.

G. Desert Water Agency/Coachella Valley Water District/Metropolitan Water Exchange Program

The volume of the Colorado River supply made available for diversion by Metropolitan that is delivered to MWD's service area is affected by the Desert Water Agency/Coachella Valley Water District/Metropolitan Water Exchange Program. See Section A.3.2.B below for the discussion of this program.

A.1.2 California Aqueduct Deliveries A. State Water Project Deliveries

Source Of Supply

The State Water Project provides imported water to the Metropolitan service area and has historically provided from up to 70 percent of Metropolitan's supplies. In accordance with its contract with the Department of Water Resources (DWR), Metropolitan has a contracted "Table A" amount of 1,911,500 acre-feet per year. Actual deliveries depend on both Metropolitan's demand and the availability of supplies.

The availability of SWP supplies for delivery is estimated based on the historical record of hydrologic conditions, existing system capabilities, requests of the 29 State Water Project contractors and SWP contract provisions for allocating Table A, Article 21 and other SWP deliveries to each contractor. The estimates of SWP deliveries to Metropolitan are based on DWR's most recent SWP reliability estimates contained in its May 25, 2005 Notice to State Water Contractors, Number 05-08.

SWP water is delivered to Metropolitan through the East Branch at Devil Canyon Power Plant's afterbay, the Santa Ana Valley Pipeline, and at Lake Perris. Metropolitan takes delivery from the West Branch at Castaic Lake.

Expected Supply Capability

The Edmund G. Brown California Aqueduct is capable of transporting Metropolitan's full contract amount of 1,911,500 acre-feet per year. However, the quantity of water available for export through the California Aqueduct can vary significantly year to year. The amount of precipitation and runoff in the Sacramento and San Joaquin watersheds, system reservoir storage, regulatory requirements, and contractor demands for SWP supplies impact the quantity of water available to Metropolitan. Prior to the execution of the Bay-Delta Accord in December 1994, significant uncertainties existed regarding

how much of the water in the Sacramento San Joaquin Bay-Delta would be available for export and how much would be required to meet regulatory requirements for meeting water quality standards and sustaining endangered species. The Bay- Delta Accord and the subsequent CALFED process removed significant uncertainties associated with regulatory requirements, thus providing a base for the DWR and the SWP contractors to estimate available water supplies. As discussed in a subsequent section, actions being undertaken by the CALFED process and the Phase 8 water rights process should enhance the reliability of supplies in the future. DWR estimates the water supply available for export to Metropolitan and the SWP contractors by using the regulatory standards in the Bay-Delta Accord, as well as historic precipitation and runoff data and reservoir levels.

Rationale For Expected Supply

Metropolitan and 28 other public entities have contracts with the State of California for State Water Project water. These contracts require the state, through its DWR, to use reasonable efforts to develop and maintain the SWP supply. DWR has made significant investment in SWP infrastructure. It has constructed 28 dams and reservoirs, 26 pumping and generation plants, and about 660 miles of aqueducts. More than 19 million California residents benefit from water from the SWP. Under its contract Metropolitan may use 46 percent of this quantity. Further, under the water supply contract, DWR is required to use reasonable efforts to maintain and increase the reliability of service to Metropolitan. As discussed in a subsequent section, DWR is participating in the CALFED process to achieve these requirements.

Historical Record

To date, the SWP has delivered in excess of 69 million acre-feet (Bulletin 132-06, Table B-5B) with the single year deliveries exceeding 3.5 million acre-feet in 2000. DWR estimates that with current facilities and regulatory requirements, the SWP will deliver 3.1 million acre-feet per year on average.

Written Contracts or Other Proof

- 1960 Contract between the State of California and the Metropolitan Water District of Southern California for a Water Supply. This Contract, initially executed in 1960 and amended numerous times since, is the basis for SWP deliveries to Metropolitan. It requires the DWR to make reasonable efforts to secure water supplies for Metropolitan and its other contractors. The contract expires in 2035. At that time, Metropolitan has the option to renew the contract under the same basic conditions.

Financing

As part of its contract with DWR, Metropolitan pays both the fixed costs of financing SWP facilities construction and variable costs of operations, maintenance, power and replacement costs for water delivered each year. Metropolitan's payments for its State Water Project contract obligation are approved each year by its Board of Directors and currently constitute approximately 30 percent of the annual budget (referenced above).

Federal, State and Local Permit/Approvals

- Operation of the SWP. The DWR is responsible for acquiring, maintaining and complying with numerous Federal and State permits for operation of the SWP. Metropolitan has been active in monitoring the issues affecting its contract with DWR.
- Environmental Impact Report for the East Branch Enlargement. In April 1984, DWR prepared and finalized an Environmental Impact Report for the Enlargement of the East Branch of the Governor Edmund G. Brown California Aqueduct.
- Environmental Impact Report for the Harvey O. Banks Pumping Plant. In January 1986 DWR

prepared and finalized an Environmental Impact Report for the Additional Pumping Units at Harvey O. Banks Delta Pumping Plant.

B. Desert Water Agency/Coachella Valley Water District/Metropolitan Water Exchange Program

Source Of Supply

The Desert Water Agency (DWA) and Coachella Valley Water District (CVWD), both in Riverside County, have rights to State Water Project (SWP) deliveries but do not have any physical connections to the SWP facilities. Both agencies are adjacent to the Colorado River Aqueduct. For DWA and CVWD to obtain water equal to their SWP allocations, Metropolitan has agreed to exchange an equal quantity of its Colorado River water for DWA and CVWD's SWP water. DWA has a SWP Table A contract right of 50,000 acre-feet per year and CVWD has a SWP Table A contract right of121,100 acre-feet per year, for a total of 171,100 acre-feet per year.

Expected Supply Capability

In addition to exchanging an equal quantity of CRA water with SWP water, Metropolitan can deliver additional CRA water to its DWA/CVWD service connections permitting these agencies to store water through an Advanced Delivery Agreement. This Advanced Delivery Agreement allows Metropolitan to maximize its "wet" water supplies from both the CRA and SWP and account for the "owed" amount of water to DWA and CVWD through this agreement. Moreover, when supplies are needed, Metropolitan can then receive its full Colorado River supply as well as the State Water Project allocation from the two agencies, while the two agencies can rely on the stored water for meeting their water supply needs. The combined SWP Table A contract right of DWA and CVWD is 171,100 acre-feet. The amount of DWA and CVWD SWP Table A water available to Metropolitan depends on total SWP deliveries and varies from year to year.

Rationale For Expected Supply

Historical Record

The DWA and CVWD Exchange Program has been in operation since 1967. The Advance Delivery Agreement has been in place since 1983. In 2003 Metropolitan, DWA, and CVWD entered into a 2003 Exchange Agreement which transfers 100 taf of Metropolitan's Table A amounts to DWA and CVWD. Since 1967 Metropolitan has been taking delivery of these agencies' SWP Table A water and providing equivalent water to those agencies from Metropolitan's supplies on the Colorado aqueduct. Metropolitan has also been delivering water in advance of the amount needed under the exchange agreement. Metropolitan can call on this water during dry years. By the end of 2006, Metropolitan expects to have 364 taf in the Advance Delivery account.

Written Contracts or Other Proof

- 1967 and 1984, 2003 Water Exchange Contract and Agreements. The DWA and CVWD water exchange contracts have been in place since 1967, amended in 1972 and were modified with execution of additional agreements in 1983. In 2003 Metropolitan, DWA, and CVWD entered into a 2003 Exchange Agreement which transfers 100 taf of Metropolitan's Table A amounts to DWA and CVWD.
- 1983 Advance Delivery Agreement. DWA, CVWD and Metropolitan executed an Advance Delivery Agreement. This Advance Delivery Agreement allows Metropolitan to supply DWA and CVWD with Colorado River water in advance of the time these agencies are entitled to receive water under the Exchange Agreement. In future years, Metropolitan can recover this water by reducing its deliveries under the exchange agreement.

Financing

The funds for deliveries under this Program are included in Metropolitan's O&M budget and Long-range Financial Plan (referenced above).

Federal, State, and Local Permits/Approvals

The DWR is responsible for acquiring, maintaining and complying with numerous Federal and State permits for operation of the SWP.

- July 26, 1983 CVWD Negative Declaration, Whitewater River Spreading Area expansion Phase 1.
- February 1983, DWA Final EIR for the proposed extension of time for utilizing Colorado River water to recharge the upper Coachella Valley groundwater basins to the year 2035, Volume I and II, April 1983 Volume III.

C. Semitropic Water Banking And Exchange Program

Source Of Supply

The agreement between Semitropic Water Storage District (Semitropic) and Metropolitan was executed in February 1994. Semitropic obtains water from the SWP through its contracts with the Kern County Water Agency. SWP supplies irrigate an area of 161,200 acres within Semitropic's service area. When this surface water is not available, these growers withdraw water from the underlying aquifer. The agreement between Semitropic and Metropolitan allows Metropolitan to make use of 35 percent of the additional storage in Semitropic's groundwater basin. In years of plentiful supply, Metropolitan can deliver available SWP supplies to Semitropic through the California Aqueduct. During dry years, Metropolitan can withdraw this stored water. Four other banking partners participate in this Program and use the remaining 65 percent of the additional storage in Semitropic's groundwater basin.

Expected Supply Capability

The Semitropic-Metropolitan Program provides Metropolitan with the capacity to store up to 350 taf of water under the current agreement. During dry years, Metropolitan can recover its stored water through a combination of direct pumping of the groundwater and delivery of Semitropic's SWP Table A water in the California Aqueduct. Based on the terms and conditions of the program agreements, the return of water to Metropolitan ranges from a minimum of 31 taf acre-feet per year (peak 4-month summer period) up to 170 taf (over a 12-month period). The average annual supply capability for a single dry year similar to 1977 or multiple dry years similar to the period 1990-1992 is 107 taf.

Rationale For Expected Supply

Historical Record

The Semitropic-Metropolitan Water Banking & Exchange Program has been operational since 1994. With existing agreements, it will continue to operate over the term of 41 years (1994-2035). At the end of 2005, Metropolitan had 343 taf in its storage account.

Written Contracts or Other Proof

- 1992 Turn-in/out Construction, Operation and Maintenance Agreement. The Department of Water Resources and Semitropic executed this Agreement in 1992 to allow construction, operation and maintenance of the Semitropic California Aqueduct Turn in/out.
- 1993 Temporary Semitropic-Metropolitan Water Banking Agreement. This Agreement was executed in February 1993 by Semitropic and Metropolitan to allow the storage of available Metropolitan supplies in advance of execution of the long-term agreement.

- 1994 Semitropic/Metropolitan Water Banking and Exchange Agreement. This Agreement was executed in December 1994 by Semitropic and Metropolitan to implement the program for a 41-year term (1994-2035).
- 1995 Point of Delivery Agreement. This agreement, with the Department of Water Resources, Kern County Water Agency and Metropolitan, allows Metropolitan to divert water from the California Aqueduct into Semitropic's service area.
- 1995 Introduction of Local Water into the California Aqueduct. This agreement, with the Department of Water Resources, Kern County Water Agency and Semitropic, allows Metropolitan to receive water from the program into the California Aqueduct.

Financing

Metropolitan's O&M budget (referenced above) includes payments for the Semitropic Program.

Federal, State and Local Permits/Approvals

- Final EIR. Semitropic acting as the lead agency under CEQA and Metropolitan acting as a responsible agency jointly completed the Environmental Impact Report for the Program. The EIR was certified by Semitropic in July 1994 and adopted by Metropolitan in August 1994.
- Regulatory Approvals. All regulatory approvals are in place and the program is operational.

D. Arvin-Edison Water Management Program

Source Of Supply

The Arvin-Edison Water Storage District (Arvin-Edison) manages the delivery of local groundwater and water imported into its service area from the Central Valley Project's (CVP) Millerton Reservoir via the Friant-Kern Canal. The surface water service area consists of 132,000 acres of predominantly agricultural land, and to a minor degree, municipal and industrial uses. It is situated in Kern County. Arvin-Edison operates its supplies conjunctively, storing water in the underlying aquifer when imported supplies are available and withdrawing that water when the availability of imported supplies is reduced. In 1997, Metropolitan entered into an agreement with the Arvin-Edison Water Storage District. The agreement allows Metropolitan to store available water in Arvin-Edison's groundwater basin, either through direct spreading operations, or through deliveries to growers in Arvin- Edison's service area. Similar to Arvin- Edison's own usage, this previously stored water could be withdrawn when the availability of imported supplies to Metropolitan is reduced.

Expected Supply Capability

The Arvin-Edison/Metropolitan Program provides Metropolitan with the capacity to store up to 250 taf of water under the current agreement. It also provides an option to increase the storage capacity to 350 taf. During dry years, Metropolitan can recover its stored water either through direct pumping of the groundwater or through exchange. Based on the terms and conditions of the program agreement, the return of water to Metropolitan ranges from a minimum of 40 taf per year (peak 4-month summer period) up to 110 taf (over a 12-month period). The average annual supply capability for this program is 90 taf for either a single dry year similar to 1977 or for each year of a multiple dry year period similar to the period 1990-1992.

Rationale For Expected Supply

Historical Record

The Arvin-Edison/Metropolitan Water Management Program has been operational since 1997. With existing agreements, it will continue to operate over the term of 30 years (1997-2027) with a possible

extension to 2035. Metropolitan had 207 taf in its storage account at the end of 2005.

Written Contracts or Other Proof

- 1997 Arvin-Edison/Metropolitan Water Management Agreement. This Agreement was executed in December 1997 by Arvin-Edison and Metropolitan to implement the program for a 30-year term (1997-2027).
- 1998 Turn-in/out Construction and Maintenance Agreement. The Department of Water Resources, Kern County Water Agency, Arvin-Edison and Metropolitan executed this Agreement in 1998 to allow construction, operation and maintenance of the Arvin-Edison California Aqueduct Turn in/out.
- 1998-2002 Water Delivery and Return Agreements. These agreements, with the Department of Water Resources, Kern County Water Agency, Arvin-Edison and Metropolitan, allow Metropolitan to divert water from, and introduce water to, the California Aqueduct.
- 2004 Point of Delivery Agreement. This agreement, with the Department of Water Resources, Kern County Water Agency and Metropolitan, allows Metropolitan to divert water from the California Aqueduct into Arvin-Edison's service area.
- 2004 Introduction of Water into the California Aqueduct. This agreement, with the Department of Water Resources, Kern County Water Agency and Arvin-Edison, allows Metropolitan to receive water from the program into the California Aqueduct.

Financing

Metropolitan's O&M budget (referenced above) includes payments for the Arvin- Edison Program.

Federal, State and Local Permits/Approvals

- All regulatory approvals are in place.
- Environmental Status: A Negative Declaration was completed in 1996.
- An Addendum to the 1996 Negative Declaration was completed in 2003.
- Regulatory Approvals. All regulatory approvals are in place and program is operational

E. San Bernardino Valley Municipal Water District Program

Source Of Supply

The San Bernardino Valley Municipal Water District Program allows Metropolitan to purchase a dependable annual supply, as well as, an additional supply for dry year needs. Under this program, Metropolitan purchases water provided to San Bernardino Valley Municipal Water District (Valley District) from its annual State Water Project (SWP) water allocation. Valley District delivers the purchased supplies to Metropolitan's service area through the coordinated use of facilities and interconnections within the water conveyance system of the two districts. The purchased SWP supply is provided to Metropolitan as direct deliveries of annual SWP water through the California Aqueduct to Metropolitan's service area, as well as through deliveries of recaptured SWP water previously stored in the San Bernardino groundwater basin to Metropolitan's service area. Under this program, Metropolitan purchases a minimum of 20 taf per year of SWP allocation every year. In addition, Metropolitan has the option to purchase Valley District's additional SWP allocation, if available, and the first right-of-refusal to purchase additional SWP supplies available beyond the minimum and option amounts. In the event that Metropolitan's operational needs do not require all, or a portion of the minimum purchased water, that unused amount may be carried forward up to a total of 50 taf for later delivery. Finally, the program establishes a critical dry year supply account for Metropolitan that could provide additional amounts of dry year supplies. During any year designated by DWR as a critically dry year, Valley District could

deliver from this account up to 50 taf of recaptured SWP water previously stored in the San Bernardino groundwater basin. To facilitate the transfer, the program also provides the coordinated use of existing facilities, including the Valley District's Foothill Pipeline and the Inland Feeder, to improve the conveyance capabilities of the delivery of SWP water to the service areas of both districts. The intertie between the foothill Pipeline and existing segment of the Inland Feeder has been constructed and was operational as of December 2002. This intertie allows Metropolitan to move SWP water from the East Branch of the California Aqueduct through the Foothill Pipeline and Inland Feeder, into Diamond Valley Lake and the Colorado River Aqueduct. As a result of this intertie, the conveyance capacity into Metropolitan's system has been increased by 260 cfs, thus increasing Metropolitan's capability to refill and maintain storage in Diamond Valley Lake.

Expected Supply Capability

The average annual supply capability for a single dry year similar to 1977 is 70 taf; for multiple dry years similar to the period 1990- 1992 expected supply capability is 37 taf.

Rationale For Expected Supply

Historical Record

The San Bernardino Valley Municipal Water District Program began operations in 2001 and is expected to be renewed continually in the future. Since its inception in 2001 this program has delivered 123 taf to Metropolitan. Deliveries in 2006 will be a minimum of 20 taf.

Written Contracts or Other Proof

Metropolitan's dependable annual and dry-year supplies from the San Bernardino Valley Municipal Water District Program are based on Metropolitan Board actions and agreements.

- 2000 Board Approval of Coordinated Operating Agreement. In June 2000, Metropolitan's Board authorized entering into a Coordinated Operating Agreement between Metropolitan and Valley District to develop projects that could provide benefits to both districts through the coordinated use of facilities and SWP supplies.
- 2000 Coordinated Operating Agreement. The Coordinate Operating Agreement between Metropolitan and Valley District was executed in July 2000.
- 2001 Board Approval of the Coordinated Use Agreement. In April 2001, Metropolitan's Board authorized entering into the Coordinated Use Agreement for Conveyance Facilities and SWP Water Supplies between Metropolitan and Valley District for the purchase of dependable annual and dry year supplies by Metropolitan.
- 2001 Coordinated Use Agreement. The Coordinated Use Agreement for Conveyance Facilities and SWP Water Supplies between Metropolitan and Valley District for the purchase of dependable annual and dry year supplies by Metropolitan was executed May 2001. The Agreement is effective as of July 1, 2001, for an "evergreen" term (10 years with automatic annual extensions unless otherwise notified).

Financing

Metropolitan's O&M budget (referenced above) includes the funds to purchase Program water.

Federal, State, and Local Permits/Approvals

The Program became effective as of July 1, 2001. An environmental review process and regulatory approval supported implementation.

- Final EIR. Final Regional Water Facilities Master Plan Environmental Impact Report dated February 1, 2001 was certified by Valley District, as lead agency, and by Metropolitan, as responsible agency. Valley District and Metropolitan filed Notices of Determination on May 29, 2001 and April 18, 2001, respectively.
- State Water Contractors' Review. In May 2001 the State Water Contractors reviewed and issued a letter supporting the program.
- DWR Review. The California Department of Water Resources agreed to the program in December 2001.

F. Kern Delta Water Management Program

Source Of Supply

In December 1999, Metropolitan advertised a request for proposals for participation in "The California Aqueduct Dry-year Transfer Program." As a result of this request for proposals, four programs, including one from the Kern Delta Water District (Kern Delta), were selected for further consideration. In 2001, Metropolitan entered into Principles of Agreement with Kern Delta for the development of a Dry year supply program. Kern Delta serves 125,000 acres of highly productive farmland located in the San Joaquin Valley portion of southern Kern County. Kern Delta has under contract 180 taf per year of good quality highly reliable pre-1914 Kern River water and 25.5 taf per year of SWP Table A contract right (under contract with Kern County Water Agency). The dry-year supply program between Kern Delta and Metropolitan involves the storage of water with Kern Delta. In years of plentiful supply the agreement allows Metropolitan to store water in Kern Delta's groundwater basin, either through direct spreading operations or through deliveries to growers in Kern Delta's service area. Metropolitan has the ability to store up to 250 taf of water. Agreement provisions may allow for storage beyond this amount. When needed, Metropolitan can recover its stored water either through direct pumping of the groundwater or exchange at a rate of 50 taf per year. The program duration will be from 2002 to 2027 with provisions that allow the water to be withdrawn until 2033.

Expected Supply Capability

The Kern Delta/Metropolitan Program provides Metropolitan with the capacity to store up to 250 taf of water at any one time. When needed, Metropolitan can recover its stored water either through direct pumping of the groundwater or exchange at a rate of 50 taf per year.

Rationale For Expected Supply

Implementation Status

Expected supplies are projected in accordance with accepted detailed groundwater modeling that has been accomplished for the program. In addition, the Kern Delta/Metropolitan Water Management Program was accepting water for storage by fall of 2003. Metropolitan currently has 32 taf in its storage account.

Written Contracts or Other Proof

- 2001 Kern Delta/Metropolitan Principles of Agreement. Principles of agreement were entered into between Kern Delta and Metropolitan in June 2001, covering program costs, operational aspects and risks/responsibilities.
- 2002 Kern Delta and Metropolitan Boards of Directors Approval. These actions approved execution of the Long-term Agreement, which delineates program operations, costs, and risks/responsibilities.

Financing

Metropolitan's O&M budget (referenced above) includes payments for the Kern Delta/Metropolitan Program.

Federal, State and Local Permits/Approvals

Kern Delta, acting as lead agency under CEQA has prepared a full Environmental Impact Report. As part of this EIR, Kern Delta published a Notice of Preparation, and held meetings with the general public, interested agencies and resource agencies. In November 2002 the Final EIR certified by Kern Delta and adopted by Metropolitan.

G. Central Valley Transfers

Source Of Supply

Up to 27 million acre-feet of water (80 percent of California's developed water) is delivered for agricultural use every year. Over half of this water is used in the Central Valley; and much of it is delivered by, or adjacent to, SWP and Central Valley Project (CVP) conveyance facilities. This allows for the voluntary transfer of water to many urban areas, including Metropolitan, via the California Aqueduct. Recent events indicate that a portion of this water could be available to Metropolitan through mutually beneficial transfer agreements:

- The Governor's Water Bank (Bank) in 1991, 1992, and 1994 secured 140 to 820 taf per year of water supply. Further, the Department of Water Resource's (DWR's) Dry Year Water Purchase Program (Purchase Program) in 2001, 2002 and 2003 secured a total of 162 taf. The DWR established and administered the Bank and the Purchase Program by facilitating purchasing water from willing sellers and transferring the water to those with critical needs using the State Water Project (SWP) facilities. Sellers, such as farmers and water districts, made water available for the Bank and Purchase Program by fallowing crops, shifting crops, releasing surplus reservoir storage, and by substituting groundwater for surface supplies.
- Under the Central Valley Improvement Act, passed by Congress in October 1992, water agencies that are not contractors with the Central Valley Project (CVP), such as Metropolitan, may for the first time be able to acquire a portion of the CVP's 7.8 million acre-feet per year of supply.
- In 2003, Metropolitan secured options to purchase approximately 145 taf of water from willing sellers in the Sacramento Valley during the irrigation season. Using these options, Metropolitan purchased approximately 125 taf of water for delivery to the California Aqueduct.
- In 2005, Metropolitan, in partnership with three other State Water Contractors, secured options to purchase approximately 130 taf of water from willing sellers in the Sacramento Valley during the irrigation season, of which Metropolitan's share was 113 taf. Metropolitan also had the right to assume the other State Water Contractors options if they chose not to exercise their options. Due to improved hydrologic conditions, Metropolitan and the other State Water Contractors did not exercise these options.

Expected Supply Capability

Metropolitan's water transfer activities in 2003 and 2005 have demonstrated Metropolitan's ability to develop and negotiate water transfer agreements working directly with the agricultural districts that are selling the water. In critically dry years or periods of prolonged drought, Metropolitan also anticipates working closely with DWR, USBR, and other water users to implement statewide programs similar to the Drought Water Banks operated by DWR in the early 1990s. Such statewide programs have a potential to secure large volumes of transfer water. For example, in 1991, DWR's Drought Water Bank secured over 800 taf of water transfer supplies within a short period from a limited group of sellers. On

average, Metropolitan expects to be able to purchase 125 taf in dry years for delivery via the California Aqueduct.

Rationale For Expected Supply

Historical Record

Metropolitan has made rapid progress to date developing Central Valley transfer programs. This progress may be attributed to several factors, including Metropolitan dedicating additional staff to identify, develop, and implement Central Valley storage and transfer programs; increased willingness of Central Valley agricultural interests to enter into storage and transfer programs with Metropolitan; and Metropolitan staff's ability to work with California Department of Water Resources and US Bureau of Reclamation staff to facilitate Central Valley storage and transfer programs. The availability of dry year supplies from the Bank, Purchase Program, and/or Water Transfer Program has been demonstrated 1991, 1992, 1994, 2001,2002, 2003, and 2005. The historical record for purchases from the Bank, Purchase Program, and Metropolitan initiated Central Valley programs in 2003 and 2005, as well as the number of sellers and buyers participating in these Programs, are strong indicators that there are significant amounts of water that can be purchased through spot market water transfers during dry years. This historical record is summarized in the table below.

Written Contracts or Other Proof

- Executive Order. In response to the extended 1987-92 drought, Governor Wilson issued an executive order establishing a Drought Action Team. This team, made up of state and federal officials, developed an action plan to lessen the impacts of the continuing drought (State 1991). One of the proposed actions was the formation of an emergency water bank managed by DWR. The purpose of the bank would be to help California's urban, agricultural, and environmental interests meet their critical water supply needs.
- Agreements with Buyers. Preceding the implementation of the 1995 and 2001 Water Banks, contracts were executed between DWR and agencies interested in buying. The essential terms and conditions for negotiating purchases, including maximum offering price, quantity of water needed, and the timing of delivery, were established in these contracts.
- Agreements with Sellers. Purchases of water for the Bank and Purchase Program have been secured through written contracts signed by DWR and sellers. In addition, Metropolitan entered into agreements with sellers for its 2003 and 2005 Central Valley water transfer programs.
- 1999 Board Directive. Metropolitan's Board has authorized water transfers in accordance with the Water Surplus and Drought Management Plan (WSDM Plan) adopted in April 1999. The WSDM Plan is a comprehensive policy guideline for managing Metropolitan's water supply during periodic surplus and shortage conditions. During shortage conditions, the plan specifies the type, priority and timing of drought actions, including the purchase of transfers on the spot market that could be taken in order to prevent or mitigate negative impacts on retail demands.

Financing

Funds for Central Valley water transfers are included in the O&M budget.

Federal, State, and Local Permits/Approvals

- Environmental Impact Report for the Bank. In November 1993, DWR prepared and finalized a programmatic Environmental Impact Report for the operation of the drought water banks during future drought events.
- Individual CEQA and NEPA documents for Metropolitan's 2003 and 2005 Central Valley water transfer programs. Individual sellers prepared CEQA documentation to support their transfers. In

addition, the U.S. Bureau of Reclamation prepared NEPA documentation for those transfers requiring federal approval.

Table A.1-1

Historical Record of Central Valley Water Transfers

Program	Purchases (AF/Y)		Participants	
	Total	Metropolitan	Seller	Buyers
1991 Governor's Water Bank	820,000	215,000	351	13
1992 Governor's Water Bank	193,246	10,000	18	16
1994 Governor's Water Bank	220,000	100	6	15
2001 Dry-Year Purchase Program	138,000	80,000	9	8
2003 Water Transfer Program	167,200	167,200	11	1
2005 Water Transfer Program*	130,000	113,000	3	4

* Quantities denote options to purchase. Metropolitan chose not to exercise its options due to improved hydrologic conditions.

H. Bay-Delta Improvements

Source Of Supply

Improving the water supply reliability of the State Water Project (SWP) is a primary focus of Metropolitan's long-term planning efforts. Metropolitan's strategy is to reduce its dependence on SWP supplies during dry years, when risks to the Bay-Delta ecosystem are greatest, and to maximize its deliveries of available SWP water during wetter years to store in surface reservoirs and groundwater basins for later use during droughts and emergencies. Restoring and stabilizing the environmental health and supply reliability of the Bay-Delta through the implementation of CALFED's Bay-Delta Program and the Sacramento Valley Water Management Agreement are important steps to accomplishing this objective. These improvements are necessary for Metropolitan to attain its goal of 650 taf of supply yield from the Bay-Delta in dry years by 2020. This yield is 200 taf to 250 taf over estimates of existing available dry-year supplies, as described above. This goal means that Metropolitan will rely on only 32.5 percent of its total SWP contract amount of 2.0 million acre-feet per year in dry years. In addition, Metropolitan policy objectives for Bay-Delta improvements include an average of 1.5 million acre-feet of supply yield to Metropolitan over all year types. The SWP conveys water from the western slope of the Sierra Nevada to water users both north and south of the Bay-Delta. Specifically, SWP is delivered to Metropolitan's service area through a system of reservoirs, the Bay-Delta, pumping plants and the California Aqueduct. Owned and operated by the California Department of Water Resources (DWR), the SWP provides municipal and agricultural water to 29 State Water Contractors. Annual deliveries for the SWP average about 2.5 million acre-feet. Municipal uses account for about 60 percent of annual deliveries, with the remaining 40 percent going to agriculture.

Delta Improvements Package and Phase 8 Settlement

CALFED is a process involving numerous stakeholders (federal and state resource agency representatives, water users, environmental entities, and other interests) to develop solutions for Bay-Delta problems. On August 28, 2000, CALFED's Bay-Delta Program was approved, and it laid out final implementation plans for the first phase – the first seven years – of what is conceived to be up to 30

years of improvements in the Bay–Delta. This Program would be implemented through 11 major elements.

Delta Improvements Package. The Delta Improvement Package is a set of linked actions designed to allow the SWP to operate the Banks Pumping Plant in the Delta at 8,500 cfs, provided all regulatory standards are met and water is available for export. The Banks Pumping Plant is currently limited by a Corps of Engineers permit to operate at 6,680 cfs, with provision to pump at higher levels only under very limited hydrologic conditions. The key benefits of the proposed Delta Improvement Program for urban Southern California include:

- Increased water supply for regional groundwater and surface water storage initiatives (130 taf per year);
- Enhanced access to voluntary water transfers upstream of the Delta as foreseen in the Record of Decision;
- Continued Endangered Species Act assurances and supply reliability through implementation of a long-term Environmental Water Account;
- Achievement of SWP supply goals for 2020 adopted by the Metropolitan Water District Board in the Southern California IRP; and
- Enhanced operation of the diversified portfolio of supplies developed over the past decade in the IRP.

Metropolitan also has been working with Bay-Delta watershed users toward settling the question of how all Bay-Delta water users would bear some of the responsibility of meeting Delta flow requirements. In December 2002, all of the parties signed a settlement agreement known as “The Sacramento Valley Water Management Agreement” or “Phase 8 Settlement Agreement.” The agreement resulted from the SWRCB Bay-Delta Water Rights Phase 8 proceedings. It includes work plans to develop and manage water resources to meet Sacramento Valley in-basin needs, environmental needs under the SWRCB’s Water Quality Control Plan, and export supply needs for both water demands and water quality. The agreement specifies about 60 water supply and system improvement projects by 16 different entities in the Sacramento Valley. Its various conjunctive use projects will yield approximately 185 taf per year in the Sacramento Valley, and approximately 55 taf of this water would come to Metropolitan through its SWP allocation. The Agreement specifies a supply breakdown of 110 taf (60 percent) to the SWP and 75 taf (40 percent) to the CVP. Based on the work plans for CALFED’s Bay- Delta Program and the Sacramento Valley Management Agreement, expected dry year supply capabilities are projected to be 55 taf for the period 2010 through 2015, and 110 taf beyond 2015.

Rationale For Expected Supply

Implementation Status

Expected supplies are projected in accordance with the approved implementation plan for CALFED’s Bay- Delta Program and with the work plans for the Sacramento Valley Water Management Agreement.

Written Contracts or Other Proof

Metropolitan’s projected dependable annual and dry-year supplies from planned Bay-Delta improvements are based on Metropolitan Board actions and agreements.

- CALFED’s Bay-Delta Program.
  - Bay-Delta Accord approved in December 1994. [14]
  - Proposition 204 funds approved by voters in November 1996.
  - Metropolitan policy direction regarding CALFED’s Bay-Delta Program adopted in July 1999.

This policy direction established water supply goals.

- Proposition 13 funds approved by voters in March 2000.
- CALFED Framework announced in June 2000[15]
- Final implementation plans for the first phase of CALFED's Bay-Delta Program approved in August 2000, in conjunction with the approval of the Program and conclusion of the environmental review process.
- Proposition 50 funds approved by voters in November 2002.
- Annual Federal appropriations.

- Sacramento Valley Water Management Agreement.[16]
  - Work plans detailing projects that could provide benefits by the 2002 and 2003 water years were developed in October 2001.
  - Statement of settlement policy principles recommended in December 2001 by negotiators for approval.
  - Statement of settlement policy principles approved by Metropolitan's Board in January 2002.
  - A Sacramento Valley Water Management Agreement was signed and approved by settlement parties in December 2002.

Financing

Funding for DIP will come from federal, state, and local water supplier sources. Final cost-sharing arrangements for DIP are still under negotiation. Metropolitan expects a funding proposal for DIP and related CALFED actions by the end of 2005. Phase 8 funding is structured as follows. The agreement calls for 185 taf per year to be produced in below normal, dry and critical years with the ability of Central Valley water agencies to preclude delivery in above normal years if it impairs their ability to perform in other years. The water is divided equally into two blocks: Block 1 is for local use in the Central Valley and if not needed, it becomes available to exporters (the predominant expectation of all); Block 2 is settlement water, available to meet flow standards/exports, except as noted above. Exporters have to buy an equal amount of Block 1 and Block 2 water if it is made available. Capital expenditures for infrastructure needed to deliver this water are assumed to be financed with public/bond funds. O&M expenses are shared for Block 2 on a 50-50 basis. For Block 1 water the price schedule is fixed at $50/af in above normal, $75 in below normal, $100 in dry and $125 in critical years. This price schedule is indexed to a cost-of-living index.

Federal, State, and Local Permits/Approvals

- CALFED's Bay-Delta Program.
  - Programmatic Environmental Impact Report/Statement finalized in July 2000.
  - Record of Decision issued in August 2000 for the final Programmatic Environmental Impact Report/Statement regarding the CALFED Bay-Delta Program.
- Sacramento Valley Water Management Agreement.
  - Settlement parties approved Sacramento Valley Management Agreement in December 2002.
  - Environmental review will be conducted by the applicable lead agencies on the various work plan projects to comply with the California Environmental Quality Act, and as appropriate the National Environmental Policy Act.

A.1.3 In-Basin Storage Deliveries

A. Surface Storage

Source Of Supply

Surface storage is a critical element of Southern California's water resources strategy. Because California experiences dramatic swings in weather and hydrology, surface storage is important to regulate those swings and mitigate possible supply shortages. Surface storage provides a means of storing water during normal and wet years for later use during dry years, when imported supplies are limited. Since the early twentieth century the Department of Water Resources and Metropolitan have constructed surface water reservoirs to meet emergency, drought/seasonal and regulatory water needs for Southern California. These reservoirs include Pyramid Lake, Castaic Lake, Elderberry Forebay, Silverwood Lake, Lake Perris, Lake Skinner, Lake Mathews, Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, Orange County Reservoir and Metropolitan's recently completed Diamond Valley Lake. Some reservoirs such as Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, and Orange County Reservoir, which have a total combined capacity of about 3,500 acre-feet, are used solely for regulatory purposes. The remaining surface reservoirs are primarily used to meet emergency, drought and seasonal requirements. The total gross storage capacity for these larger remaining reservoirs is 1,768,100 acre-feet. However, not all of the gross storage capacity is available to Metropolitan; dead storage and storage allocated to others reduce the amount of storage that is available to Metropolitan to 1,669,100 acre-feet.

Expected Supply Capability

Surface storage reservoirs are an important tool that allows Metropolitan to meet the water needs of its service area. As discussed in the Final Environmental Impact Report for the Eastside Reservoir (DVL) Project dated October 1991, in Southern California's Integrated Resources Plan, dated March 1996, and in the IRP Update finalized in 2004, the allocation of available surface storage can be divided into two primary components: emergency, and drought/seasonal. As specified by Metropolitan's Board of Directors in the Final EIR for DVL, "Metropolitan shall maintain sufficient water reserves within its service area to supplement local production during an emergency, or severe water shortage." With DVL in operation, Metropolitan can now re-operate the surface reservoirs and meet the Board's stated objectives.

<u>Updated Emergency Storage Requirements:</u>

Metropolitan's criteria for determining emergency storage requirements, which was approved by Metropolitan's Board, was established in the Final EIR for DVL and further discussed in the IRP. Emergency Storage requirements are based on the potential for a major earthquake to damage the Colorado River Aqueduct, Los Angeles Aqueduct, and both branches of the California Aqueducts that could force the aqueducts out of service for 6 months. During this period, all interruptible service deliveries would be suspended, a mandatory reduction in water use of 25 percent from normal-year demand levels would be instituted, water stored in surface reservoirs and groundwater basins under Metropolitan's interruptible program would be made available, and full local groundwater production would be sustained. The storage reserved in system reservoirs for emergency purposes changes over the next 20 years in accordance with the projected demands on Metropolitan as shown below. The residual storage available to meet other needs, dry year/ seasonal, is also shown below.

Table A.1-2					
Surface Storage Utilization					
	Average Year Storage Projection				
	2010	2015	2020	2025	2030
Surface Storage in MWD Service Area	1,625,700	1,625,700	1,625,700	1,625,700	1,625,700
Emergency	651,000	639,000	988,000	735,000	784,000

Determined in accordance with Metropolitan Board policy objectives,

the Integrated Resources Plan dated March 1996, and the IRP Update.

Updated Storage Requirements for Dry-Year Supply and Seasonal Needs:

Storage capacity in system reservoirs, including DVL, is also earmarked for dry-year supply and system regulation purposes. Dry-year supply storage within Metropolitan's service area is required to meet the additional water demands that occur during single-year and extended droughts. As specified in the Final EIR for DVL and further discussed in the IRP, this storage requirement is defined as the difference between average-year demand and above average demand during dry years. In addition to dry-year storage, seasonal storage is required to meet seasonal peak demands, which are defined as the difference between average winter demands and average summer demands. The dry-year supply and seasonal storage also provides sufficient reserves to permit approximately 5 percent downtime for rehabilitation, repair and maintenance of raw water transmission facilities.

Historical Record

Metropolitan has a contract with the Department of Water Resources that allows use of DWR's terminal reservoirs, such as Lake Castaic on the West Branch and Lake Perris on the East Branch of the California Aqueduct. In addition, Metropolitan owns and operates surface reservoirs such as Lake Skinner, Lake Mathews and Diamond Valley Lake to enhance water supply reliability for its Member Agencies.

Written Contracts or Other Proof of Usage

The Surface Reservoirs used by Metropolitan are available either by contract (in the case of the DWR terminal reservoirs) or by construction of its own facilities. The following historical record is provided:

- November 1960 Contract between the State of California Department of Water Resources and the Metropolitan Water District of Southern California for a Water Supply. This Contract and its numerous amendments describe Metropolitan's legal access to and obligations for the operation of the State Water Project for the benefit of its Contractors. Metropolitan has a contract amount of 1,911,500 acre-feet of water each year subject to availability. The terms of this Contract describe Metropolitan's rights to and obligations for the terminal surface reservoirs for water supply purposes.
- November 1974 Memorandum of Understanding and Agreement on Operation of Lake Skinner. This MOU, signed by Metropolitan and other affected parties, governs Metropolitan's operations of Lake Skinner in Riverside County. The DWR Division of Safety and Dams also reviews monitoring data on the safety of the dam annually.
- November 1999 Memorandum of Understanding on Operation of Diamond Valley Lake. This MOU, signed by Metropolitan and other affected parties, governs Metropolitan's operations of Lake Skinner in Riverside County. The DWR Division of Safety and Dams also reviews monitoring data

on the safety of the dam annually.

- Elderberry Forebay Contract for Conditions for Use. Conditions for Use of storage are described in the Contract Between the Department of Water Resources, State of California, and the Department of Water and Power, City of Los Angeles, for Cooperative Development, West Branch, California Aqueduct; Amendment No. 1, July 3, 1969; and Amendment No. 4, June 27, 1985.
- June 2002 Division of Safety of Dams Certificate of Approval. The Department of Water Resources, Division of Safety of Dams issued the Certificate of Approval for operation of Diamond Valley Lake in early 2000, with three conditions. These conditions were: (1) Satisfactory operation of the butterfly valves and emergency gate in the inlet/outlet tower, (2) completion of the Tank Saddle Cutoff remediation and (3) completion of the Signal Spillway. Metropolitan completed these conditions in 2001 and the Diamond Valley Lake is currently operational in accordance with the Certificate of Approval.
- October 1991 Final Environmental Impact Report for the Eastside Reservoir Project (DVL). The EIR established criteria for integrating the operations of Metropolitan's reservoirs and DWR's southern reservoirs for emergency purposes. These criteria also provided that Metropolitan reservoirs could be expected to withdraw all drought storage water within a two-year period.

B. Flexible Storage Use Of Castaic Lake And Lake Perris

Source Of Storage

The flexible storage use of Castaic Lake and Lake Perris, SWP reservoirs, provides Metropolitan with dry-year supply. The State Water Project (SWP) contractors participating in repayment of the capital costs of Castaic Lake and Lake Perris have the contract right to withdraw SWP water from these reservoirs in addition to their allocated supply in any year on an as needed basis. These contractors must replace the water withdrawn under this program within five years of the first withdrawal. This storage is referred to as "flexible storage". It is available in Castaic Lake to Metropolitan, Ventura County Flood Control and Water Conservation District, and to the Castaic Lake Water Agency. It is available in Lake Perris to Metropolitan only.

Expected Supply Capability

The dry year supply available to Metropolitan from the flexible storage use of Castaic Lake and Lake Perris totals 218, 940 acre-feet, made up of 153,940 acre-feet in Castaic Lake and 65,000 acre-feet in Lake Perris. Table A.1-3 shows the use of this available supply in accordance with Metropolitan's operating criteria: Seismic concerns have arisen at the Lake Perris dam. In response, DWR plans to reduce the storage amount at Lake Perris by half until those concerns can be studied and addressed. In the long-term, the reduction in storage may potentially impact the amount of flexible storage available to Metropolitan from Lake Perris, and also impact the total amount of emergency storage available.

Rationale For Expected Supply

Implementation Status

Express provisions related to flexible storage have been incorporated in Metropolitan's SWP contract since 1995. The operating options have been available for use since that time and will continue to be in effect indefinitely as a part of the SWP contracts.

TableA.1-3

Estimated Water Supplies Available for Metropolitan's Use
Under the Flexible Storage Use of Castaic Lake and Lake Perris *
(Thousand acre-feet per year)

Year	Multiple Dry-Years (1990-1992)	Single Dry Year 1977	Average Year
2010	73	219	0
2015	73	219	0
2020	73	219	0
2025	73	219	0
2030	73	219	0

Source: Metropolitan's operating criteria

Historical Record

Metropolitan has exercised the flexible storage provision in 2000, 2001 and 2002. Its use is based on existing contract provisions.

- DWR Bulletin 132-94. The use of Castaic Lake and Lake Perris is determined in accordance with the proportionate use factors from Bulletin 132-94, Table B, upon which capital cost repayment obligations are based. Based on its capital repayment obligations, Metropolitan's proportionate use of Castaic Lake is 96.2 percent and of Lake Perris is 100 percent. Per its SWP contract, Metropolitan has express rights to use certain portions of the SWP southern reservoirs independently of DWR to supply water in amounts in addition to approved SWP deliveries.
- Metropolitan's SWP Contract. Metropolitan's SWP contract was amended in 1995 to include Article 54, "Usage of Lakes Castaic and Perris." This article provides flexible storage to contractors participating in repayment of the capital costs of Castaic Lake and Lake Perris. Each contractor shall be permitted to withdraw up to a Maximum Allocation from Castaic Lake and Lake Perris. These contractors may withdraw a collective Maximum Allocation up to 160 taf in Castaic Lake and 65 taf in Lake Perris, which shall be apportioned among them pursuant to the respective proportionate use factors, as follows:

Table A.1-4

Flexible Storage Allocations

Participating Contractor	Proportionate Use Factor	Maximum Flexible Storage Allocation (acre-feet)
Castaic Lake		
Metropolitan	0.96212388	153940
Ventura County Flood Control and Water Conservation District	0.00860328	1376
Castaic Lake Water Agency	0.02927284	4684
Total Castaic Lake	1	160000
Lake Perris		
Metropolitan	1	65000

Financing

The cost associated with the withdrawal and replacement of water in the flexible storage is included in Metropolitan's annual payments under the State Water Contract.

Federal, State, and Local Permits/Approvals

The flexible storage provision became effective in 1995. DWR has the approval authority to affect changes in the operations and usage of existing SWP facilities, including Castaic Lake and Lake Perris.

C. Metropolitan Surface Reservoirs

Source Of Supply

Storage capacity in Metropolitan reservoirs, including Lake Skinner, Lake Mathews, Live Oak Reservoir, Garvey Reservoir, Palos Verdes Reservoir, Orange County Reservoir and Metropolitan's recently completed Diamond Valley Lake, is earmarked to meet emergency, dry year/ seasonal and system regulation needs, as these have been defined above.

Expected Supply Capability

The total available storage capacity for all Metropolitan-controlled surface reservoirs (Metropolitan-owned and DWR terminal reservoirs) is 1,625,700. As discussed earlier, approximately 651 taf in 2010 rising to 735 taf acre-feet in 2025 has been set aside to meet the emergency storage requirements of the service area. After accounting for emergency storage, the surface storage available in Metropolitan owned reservoirs to meet dry-year/seasonal requirements is presented below:

Rationale for Expected Supply

Program Facilities

Major facilities for Lake Mathews include an earthen dam to impound water and a recently completed new outlet tower. Major facilities for Lake Skinner include an earthen dam to impound water, an outlet tower, a inlet from the San Diego Canal to deliver water into the reservoir, a water treatment filtration facility, and recreational facilities consisting of a marina, parks, swimming areas, golf course, and hiking trails. Major facilities at Diamond Valley Lake include three earthen dams to impound water, an inlet/outlet tower, a secondary inlet from the Inland Feeder, a large pumping station to deliver water into the reservoir, and power generating facilities. Recreational facilities consisting of a marina, parks, swimming areas, golf course, hiking trails, equestrian trails and lodging are planned.

Table A.1-5

Estimated Supplies Available From Metropolitan's Surface Storage (thousand acre-feet)

Year	Multiple Dry-Years (1990-1992)	Single Dry Year 1977	Average Year
2010	244	733	0
2015	248	745	0
2020	232	697	0
2025	217	650	0
2030	200	601	0

Source: Metropolitan analysis

Historical Record

The Diamond Valley Lake is currently operational and is essentially full. Lake Mathews and Lake Skinner have been in service for over 30 years and are currently available for full operations.

- November 1974 Memorandum of Understanding and Agreement on Operation of Lake Skinner. This MOU, signed by Metropolitan and other affected parties, governs Metropolitan's operations of Lake Skinner in Riverside County. The DWR Division of Safety and Dams also reviews monitoring data on the safety of the dam annually.
- October 1991 Final Environmental Impact Report for the Eastside Reservoir Project (DVL). The EIR established criteria for integrating the operations of Metropolitan's reservoirs and DWR's southern reservoirs for emergency purposes. These criteria also provided that Metropolitan reservoirs could be expected to withdraw all drought storage water within a two-year period.
- November 1999 Memorandum of Understanding on Operation of Diamond Valley Lake. This MOU, signed by Metropolitan and other affected parties, governs Metropolitan's operations of Lake Skinner in Riverside County. The DWR Division of Safety and Dams also reviews monitoring data on the safety of the dam annually.
- June 2002 Division of Safety of Dams Certificate of Approval. The Department of Water Resources, Division of Safety of Dams issued the Certificate of Approval for operation of Diamond Valley Lake in early 2000, with three conditions. These conditions were: (1) Satisfactory operation of the butterfly valves and emergency gate in the inlet/outlet tower, (2) completion of the Tank Saddle Cutoff remediation and (3) completion of the Signal Spillway. Metropolitan completed these conditions in 2001 and the Diamond Valley Lake is currently operational in accordance with the Certificate of Approval.

Financing

The capital cost of Diamond Valley Lake, Lake Mathews and Lake Skinner was financed by a combination of revenue bonds and operating revenues. Annual operating costs, including maintenance and pumping, are included in Metropolitan's annual O&M budget (referenced above).

Federal, State, and Local Permits/Approvals

All necessary permits have been obtained. A permit to generate and sell power has been acquired from the Federal Energy Regulatory Commission. No further regulatory permits are required.

D. Groundwater Conjunctive Use Programs

Source Of Supply

The Integrated Resources Plan (IRP) approved by the Metropolitan Board established Metropolitan's strategy to store imported water that is most available during wet years in surface reservoirs or groundwater aquifers for later use during droughts and emergencies. In this way, Metropolitan can reduce its reliance on direct deliveries from the State Water Project (SWP) and the Colorado River during dry years when competing demands by other users and risks to the watershed ecosystems are greatest. During the development of the IRP and in cooperation with Metropolitan, the Association of Groundwater Agencies (AGWA) undertook a study to examine the potential for groundwater storage. AGWA, which is composed of representatives from six major basins in Southern California, was created to work collectively on groundwater issues, including conjunctive use of imported water. The findings of the AGWA study indicated that up to 1.5 million acre-feet of total storage capacity could be dedicated to regional storage of imported supplies. Use of current facilities, along with some facilities improvements, could result in up to 350 taf of additional groundwater production as a result of storing imported water over the next 20 to 30 years. Based on the AGWA study, the 1996 IRP set a resource objective to develop about 275 taf per year of dry-year supply from in-region groundwater storage by 2010 and 300 taf per year by 2020. These targets were maintained in the 2004 Update of the IRP. Groundwater conjunctive use capabilities are being developed in accordance with the IRP as described in the body of this report.

Rationale For Expected Supply

Implementation Status:

The status of implementation for the groundwater conjunctive use programs has been described in the body of this report.

Historical Record

- Long-term Replenishment Program. As a result of Metropolitan's Long-term Replenishment Program, local agencies are currently storing available imported water in order to maintain groundwater production during the summer season and dry years. Based on the historical record for replenishment deliveries, it is estimated that an average of 100 taf per year of groundwater supply is produced as a result of Metropolitan's existing Long-term Replenishment Program.
- The Main San Gabriel Cyclic Agreement. This was originally signed in 1979 for a term of five years. It has since been renewed five times, each time for a five-year term. It currently expires in 2009, but is expected to be renewed repeatedly in future.
- North Las Posas Groundwater Storage Program. Two phases of the program's ASR wells have been constructed, providing approximately 8 taf per year of replenishment capacity and 12 taf per year of withdrawal capacity. As of June 30, 2005, 48 taf are in storage. Upon completion of the Moorpark pipeline pump station by Calleguas MWD in 2007, the wellfield will be fully operational and able to pump 47 taf per year of stored water from the basin. This agreement is in place for forty years, through 2035. As of August 1, 2005, approximately 125 taf of water has been stored in contractual dry-year storage programs in the North Las Posas, Chino, Orange County, Live Oak, Central, and Raymond groundwater basins.

Metropolitan's dry-year supply from the ground water conjunctive use programs is based on Metropolitan's Board actions and agreements.

- Approval of Long-term Replenishment Program. Beginning in fiscal year 1989- 90, Metropolitan implemented the Long-Term Replenishment Program. The continuation of this program was reaffirmed as part of the new rate structure that was approved by Metropolitan's Board in October 2001.
- Agreements for North Las Posas Groundwater Storage Program. An Agreement between Metropolitan and Calleguas Municipal Water District (Calleguas) was executed in June 1995 and amended in May 1998. The term of the Agreement extends to2035.
- Proposition 13 Groundwater Conjunctive Use Programs Operational by 2010.
  - AGWA study dated month 1994, identifying the potential storage capacity and return capabilities from groundwater conjunctive use programs.
  - Principles for groundwater storage adopted by the Metropolitan Board in January 2000.
  - Resolution for Proposition 13 Funds adopted by the Metropolitan Board in October 2000.
  - Agreement executed with the California Department of Water Resources for Interim Water Supply Construction Grant Commitment Safe Drinking Water, Clean Water, Watershed Protection and Flood Protection (Proposition 13, Chapter 9, Article 4) providing for Metropolitan to administer $45 million in state Proposition 13 grant funds for groundwater reliability programs; October 2000
  - Agreement executed for Long Beach Conjunctive Use Project, July 2002
  - Agreement executed for Live Oak Conjunctive Use Project, October 2002
  - Agreement executed for Foothill Area Groundwater Storage Project, February 2003

- Agreement executed for Chino Basin Programs, June 2003
- Agreement executed for Orange County Groundwater Storage Program, June 2003
- Agreement executed for Compton Conjunctive Use Program, February 2005
- Agreement executed for Long Beach Conjunctive Use Project— Expansion in Lakewood, July 2005

All of these programs have an initial 25-year term, with provision for renewal or extension after that period.

Financing

Financing has been supplied from multiple sources as discussed below:

- Financing for Long-term Replenishment Program. No capital or O&M costs are associated with the implementation of the Long-term Replenishment Program. Rather, Metropolitan provides a discounted water rate to encourage member agencies to take delivery of surplus water for storage purposes.
- Financing for North Las Posas Groundwater Storage Program.
  - Metropolitan's Board appropriated $6 million to construct wells and appurtenant facilities in Phase 1 of the program in June 1995.
  - Metropolitan's Board appropriated $25 million to construct wells and appurtenant facilities Phase 2 of the program in January 1998.
  - Metropolitan has reimbursed Calleguas MWD for over $28 million for capital facilities for this program.
- Financing for Proposition 13 and Additional Groundwater Storage Programs.
  - Metropolitan's Board appropriated $210,000 to conduct initial environmental, engineering and planning studies for the Raymond Basin storage program in January 2000.
  - Proposition 13 funds ($45 million) were allocated to Metropolitan by the state in May 2000 for the development of local groundwater storage projects.
  - Metropolitan has executed groundwater storage funding agreements committing over $39 million of the Proposition 13 funds for seven storage programs and has appropriated over $35 million of Metropolitan capital funds for the storage programs in the Orange County and Chino groundwater basins. For these seven Proposition 13 programs, over $30 million of Prop. 13 and Metropolitan capital funds have been expended for design and construction of program facilities.
  - Metropolitan's long-term capital program (referenced above) includes $210 million to implement groundwater conjunctive use programs through 2020.

Table A.1-6 provides details of funding for specific groundwater storage programs.

Federal, State, and Local Permits/Approvals

- Final EIR for North Las Posas Groundwater Storage Program. Environmental Impact Report for the North Las Posas Groundwater Storage Program was certified by Calleguas Municipal Water District, lead agency, and by Metropolitan, responsible agency, in April 1995 and June 1995, respectively.
- Long Beach Conjunctive-use Storage Project. Environmental documentation for the Long Beach Conjunctive-use Storage Project was certified by the City of Long Beach in August 2001.

- Live Oak Basin Conjunctive-use Storage Project. Three Valleys MWD certified environmental documentation for the Live Oak Basin Conjunctive-use Storage Project in January 2002.
- Foothill Area Groundwater Storage Project. Environmental documentation for the Foothill Area Groundwater Storage Project was certified by Foothill Municipal Water District in January 2003.

Table A.1-6
Metropolitan's In-Region Groundwater Storage Programs
21-Jun-05

Program	Metropolitan Agreement Partners	Agreement Execution Date	Max Storage (AF)	Dry-Year Yield (AF/Yr)	Capital Funding
Long Beach Conjunctive Use Storage Project (Central Basin)	Long Beach	Jun-02	13,000	4,300	$4.5 million – Prop. 13 funds
Foothill Area Groundwater Storage Program (Monk hill/Raymond Basin)	Foothill MWD	Feb-03	9,000	3,000	$1.7 million – Prop. 13 funds
Orange County Groundwater Conjunctive Use Program	MWDOC OCWD	Jun-03	66,000	20,000	$29.8 million: $15.0 million – Prop 13 $14.8 million – Met CIP*
Chino Basin Programs	IEUA TVMWD Watermaster	Jun-03	100,000	33,000	$27.5 million: $9.0 million – Prop 13 $18.5 million – Met CIP*
Live Oak Basin Conjunctive Use Project (Six Basins)	TVMWD City of LaVerne	Oct-02	3,000	1,000	$3.3 million – Prop 13
City of Compton Conjunctive Use Project Central Basin)	Compton	Feb-05	2,289	763	$2.43 million – Prop 13
Metropolitan—Calleguas MWD Groundwater Storage Project (North Las Posas Basin)	Calleguas MWD	1995, amended 1999	210,000	47000	$31 million – Met CIP* $28.2 million expended
Long Beach Conjunctive Use Program Expansion in Lakewood (Central Basin)	Long Beach Metropolitan	Jul-05	3,600	1,200	3.1 million – Prop 13
Upper Claremont Basin Groundwater Storage Program (Six Basins)	TVMWD Metropolitan	Sept. 2005 Board	3,000	1,000	1.23 million – Prop 13
TOTAL			403,889	111,263	40.26 million – Prop 13** 61.5 million – Met CIP*

* Metropolitan's Capital Investment Plan
**$4.7 million of Prop 13 funds requires reallocation. Currently, proposing to allocate funds to a an Elsinore Basin Groundwater Storage Program with Western MWD providing 12,000AF of storage and dry-year yield of 4,000AF.

- Chino Basin Programs Groundwater Storage Project. Environmental documentation for the Chino Basin Programs Groundwater Storage Project was certified by Inland Empire Utility Agency in December 2002.
- Long Beach Conjunctive Use Storage Project --Expansion in Lakewood. Environmental documentation for the project was certified by the City of Lakewood in May 2005.
- City of Compton Conjunctive Use Program. Environmental documentation for the project was certified by the City of Compton in December 2004.
- Orange County Groundwater Conjunctive Use Program. Environmental documentation for the project was certified by Orange County Water District in March 1999 and in July 2002.
- Environmental Review for 2010 Programs. Environmental review of the 2010 Groundwater Conjunctive Use Programs will be completed prior to signing agreements.

The following Table A.1-7 shows the detailed water supply forecasts by water source, in five-year increments and for single dry-year, multiple dry years and average years. Table A.1-8 shows the minimum supplies expected over the next three years.

References:

1. Metropolitan Water District of Southern California, Annual Progress Report to the California State Legislature: Achievements in Conservation, Recycling and Groundwater Recharge (February 2005), which can be found at http://www.mwdh2o.com/mwdh2o/pages/yourwater/sb60_04/SB%2060%202005_web.pdf. The legislation requiring this information is shown on page 40 of the 2005 report. A similar report was filed with the legislature in February 2004.
2. A description of many of these agreements can be found at http://www.usbr.gov/lc/region/pao/lawofrvr.html.
3. This agreement between the California contractors was dated August 18, 1931 and was codified in federal regulations promulgated by the Secretary of the Interior on September 28, 1931.
4. Including contract number IIr-645 dated 04-09-1930, supplemented 09-28-1931.
5. The Consolidated Decree issued in *Arizona v. California et al*, can be found at http://www.usbr.gov/lc/region/pao/pdfiles/scconsolidateddecree2006.pdf
6. These agreements can be found at http://www.crss.water.ca.gov/docs/crqsa/Parts/QSA_FE.pdf
7. Imperial Irrigation District, EIR for Water Conservation Implementation in Imperial Irrigation District, October 1986. SCH Number: 86012903.
8. Imperial Irrigation District EIR for Modified East Lowline and Trifolium Interceptors, and Completion Projects, May 1994, SCH Number: 92071061.
9. Multiple lead agencies, Programmatic EIR for the Implementation of the Colorado River Water Quantification Settlement Agreement, January 2002, SCH Number 2000061034.
10. Presented to Metropolitan's Board at its regular meeting January 14, 1992.
11. SCH Number 2001101149.
12. The documents related to the QSA-related agreements discussed in this section are referenced above.
13. The Basin State's preliminary proposal can be accessed at

http://www.usbr.gov/lc/region/programs/strategies/documents.html

14. A copy of this agreement can be found at http://calwater.ca.gov/Archives/GeneralArchive/SanFranciscoBayDeltaAgreement.shtml
15. California's Water Future: A Framework for Action can be found at http://calwater.ca.gov/Archives/GeneralArchive/adobe_pdf/new_final_framework.pdf.
16. A copy of this agreement can be found at http://www.norcalwater.org/pdf/agreementfinal.pdf.

In Basin Storage Activities
Program Capabilities
Year 2010
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
Metropolitan Surface Storage (DVL, Mathews, Skinner)	244,000	733,000	0
Flexible Storage in Castaic & Perris	73,000	219,000	0
Groundwater Conjunctive-use			
Long Term Replenishment and Cyclic Storage	86,000	86,000	0
North Las Posas Storage	47,000	47,000	0
Proposition 13 Storage	65,000	65,000	0
Subtotal of Current Programs	***515,000***	***1,150,000***	***0***
Programs Under Development			
Groundwater Conjunctive-use			
Raymond Basin	22,000	22,000	0
Prop 13 Storage Programs	4,000	4,000	0
Walnut Park CUP	500	500	0
Additional Programs1	55,000	55,000	0
Subtotal of Proposed Programs	***82,000***	***82,000***	***0***
Maximum Supply Capability	**597,000**	**1,232,000**	**0**

[1] Includes expansions of existing programs

In Basin Storage Activities
Program Capabilities
Year 2015
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
Metropolitan Surface Storage (DVL, Mathews, Skinner)	248,000	745,000	0
Flexible Storage in Castaic & Perris	73,000	219,000	0
Groundwater Conjunctive-use			
Long Term Replenishment and Cyclic Storage	86,000	86,000	0
North Las Posas Storage	47,000	47,000	0
Proposition 13 Storage	65,000	65,000	0
Subtotal of Current Programs	***519,000***	***1,162,000***	***0***
Programs Under Development			
Groundwater Conjunctive-use			
Raymond Basin	22,000	22,000	0
Prop 13 Storage Programs	4,000	4,000	0
Walnut Park CUP	500	500	0
Additional Programs1	80,000	80,000	0
Subtotal of Proposed Programs	***107,000***	***107,000***	***0***
Maximum Supply Capability	**626,000**	**1,269,000**	**0**

[1] Includes expansions of existing programs

In Basin Storage Activities
Program Capabilities
Year 2020
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
Metropolitan Surface Storage (DVL, Mathews, Skinner)	232,000	697,000	0
Flexible Storage in Castaic & Perris	73,000	219,000	0
Groundwater Conjunctive-use			
Long Term Replenishment and Cyclic Storage	86,000	86,000	0
North Las Posas Storage	47,000	47,000	0
Proposition 13 Storage	65,000	65,000	0
Subtotal of Current Programs	***503,000***	***1,114,000***	***0***
Programs Under Development			
Groundwater Conjunctive-use			
Raymond Basin	22,000	22,000	0
Prop 13 Storage Programs	4,000	4,000	0
Walnut Park CUP	500	500	0
Additional Programs1	80,000	80,000	0
Subtotal of Proposed Programs	***107,000***	***107,000***	***0***
Maximum Supply Capability	**610,000**	**1,221,000**	**0**

[1] Includes expansions of existing programs

In Basin Storage Activities
Program Capabilities
Year 2025
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
Metropolitan Surface Storage (DVL, Mathews, Skinner)	217,000	650,000	0
Flexible Storage in Castaic & Perris	73,000	219,000	0
Groundwater Conjunctive-use			
Long Term Replenishment and Cyclic Storage	86,000	86,000	0
North Las Posas Storage	47,000	47,000	0
Proposition 13 Storage	65,000	65,000	0
Subtotal of Current Programs	***488,000***	***1,067,000***	***0***
Programs Under Development			
Groundwater Conjunctive-use			
Raymond Basin	22,000	22,000	0
Prop 13 Storage Programs	4,000	4,000	0
Walnut Park CUP	500	500	0
Additional Programs1	80,000	80,000	0
Subtotal of Proposed Programs	***107,000***	***107,000***	***0***
Maximum Supply Capability	**595,000**	**1,174,000**	**0**

[1] Includes expansions of existing programs

In Basin Storage Activities
Program Capabilities
Year 2030
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
Metropolitan Surface Storage (DVL, Mathews, Skinner)	200,000	601,000	0
Flexible Storage in Castaic & Perris	73,000	219,000	0
Groundwater Conjunctive-use			
Long Term Replenishment and Cyclic Storage	86,000	86,000	0
North Las Posas Storage	47,000	47,000	0
Proposition 13 Storage	65,000	65,000	0
Subtotal of Current Programs	***471,000***	***1,018,000***	***0***
Programs Under Development			
Groundwater Conjunctive-use			
Raymond Basin	22,000	22,000	0
Prop 13 Storage Programs	4,000	4,000	0
Walnut Park CUP	500	500	0
Additional Programs1	80,000	80,000	0
Subtotal of Proposed Programs	***107,000***	***107,000***	***0***
Maximum Supply Capability	**578,000**	**1,125,000**	**0**

[1] Includes expansions of existing programs

California Aqueduct
Program Capabilities
Year 2010
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
SWP Deliveries [1,2]	509,000	175,000	1,472,000
San Luis Carryover [3]	93,000	285,550	285,550
SWP Call-back of DWCV Table A Transfer	26,000	5,000	0
Central Valley Storage and Transfers			
Semitropic Program	107,000	107,000	0
Arvin Edison Program	90,000	90,000	0
San Bernardino Valley MWD Program	37,000	70,000	20,000
Kern Delta Program	50,000	50,000	0
Subtotal of Current Programs	***912,000***	***783,000***	***1,778,000***
Programs Under Development			
Delta Improvements [4]	55,000	55,000	185,000
Market Transfer Options	150,000	200,000	0
Central Valley Transfers/Purchases	125,000	100,000	0
Mojave Program	0	0	0
IRP SWP Target [5]	0	0	0
Subtotal of Proposed Programs	***330,000***	***355,000***	***185,000***
Maximum Supply Capability	**1,242,000**	**1,138,000**	**1,963,000**

[1] Single Dry-year figure includes 76 TAF of additional SWP supplies in 1977 per DWR 2005 State Water Project Delivery Reliability Report, which assumes 150 TAF of SWP carryover in San Luis Reservoir in addition to contractors' carryover

[2] Multiple and Single Dry year figures include DWCV Table A supplies

[3] Includes DWCV carryover

[4] Includes Phase 8 and increased pumping capacity

[5] Remaining supply needed to meet IRP target

California Aqueduct
Program Capabilities
Year 2015
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
SWP Deliveries1,2	509,000	175,000	1,472,000
San Luis Carryover3	93,000	285,550	285,550
SWP Call-back of DWCV Table A Transfer	26,000	5,000	0
Central Valley Storage and Transfers			
Semitropic Program	107,000	107,000	0
Arvin Edison Program	90,000	90,000	0
San Bernardino Valley MWD Program	37,000	70,000	20,000
Kern Delta Program	50,000	50,000	0
Subtotal of Current Programs	***912,000***	***783,000***	***1,778,000***
Programs Under Development			
Delta Improvements4	55,000	55,000	185,000
Market Transfer Options	0	200,000	0
Central Valley Transfers/Purchases	125,000	100,000	0
Mojave Program	35,000	35,000	0
IRP SWP Target	0	8,450	0
Subtotal of Proposed Programs	***215,000***	***398,000***	***185,000***
Maximum Supply Capability	**1,127,000**	**1,181,000**	**1,963,000**

[1] Single Dry-year figure includes 76 TAF of additional SWP supplies in 1977 per DWR 2005 State Water Project Delivery Reliability Report, which assumes 150 TAF of SWP carryover in San Luis Reservoir in addition to contractors' carryover

[2] Multiple and Single Dry year figures include DWCV Table A supplies

[3] Includes DWCV carryover

[4] Includes Phase 8 and increased pumping capacity

California Aqueduct
Program Capabilities
Year 2020
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
SWP Deliveries1,2	509,000	175,000	1,472,000
San Luis Carryover3	93,000	285,550	285,550
SWP Call-back of DWCV Table A Transfer	26,000	5,000	
Central Valley Storage and Transfers			
Semitropic Program	107,000	107,000	0
Arvin Edison Program	90,000	90,000	0
San Bernardino Valley MWD Program	37,000	70,000	20,000
Kern Delta Program	50,000	50,000	0
Subtotal of Current Programs	***912,000***	***783,000***	***1,778,000***
Programs Under Development			
Delta Improvements4	110,000	110,000	240,000
Market Transfer Options	0	200,000	0
Central Valley Transfers/Purchases	125,000	100,000	0
Mojave Program	35,000	35,000	0
IRP SWP Target	29,000	74,450	0
Subtotal of Proposed Programs	***299,000***	***519,000***	***240,000***
Maximum Supply Capability	**1,211,000**	**1,302,000**	**2,018,000**

[1] Single Dry-year figure includes 76 TAF of additional SWP supplies in 1977 per DWR 2005 State Water Project Delivery Reliability Report, which assumes 150 TAF of SWP carryover in San Luis Reservoir in addition to contractors' carryover

[2] Multiple and Single Dry year figures include DWCV Table A supplies

[3] Includes DWCV carryover

[4] Includes Phase 8 and increased pumping capacity

California Aqueduct
Program Capabilities
Year 2025
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
SWP Deliveries1,2	509,000	175,000	1,472,000
San Luis Carryover3	93,000	285,550	285,550
SWP Call-back of DWCV Table A Transfer	26,000	5,000	0
Central Valley Storage and Transfers			
Semitropic Program	107,000	107,000	0
Arvin Edison Program	90,000	90,000	0
San Bernardino Valley MWD Program	37,000	70,000	20,000
Kern Delta Program	50,000	50,000	0
Subtotal of Current Programs	***912,000***	***783,000***	***1,778,000***
Programs Under Development			
Delta Improvements4	110,000	110,000	240,000
Market Transfer Options	0	200,000	0
Central Valley Transfers/Purchases	125,000	100,000	0
Mojave Program	35,000	35,000	0
IRP SWP Target	29,000	74,450	0
Subtotal of Proposed Programs	***299,000***	***519,000***	***240,000***
Maximum Supply Capability	**1,211,000**	**1,302,000**	**2,018,000**

[1] Single Dry-year figure includes 76 TAF of additional SWP supplies in 1977 per DWR 2005 State Water Project Delivery Reliability Report, which assumes 150 TAF of SWP carryover in San Luis Reservoir in addition to contractors' carryover

[2] Multiple and Single Dry year figures include DWCV Table A supplies

[3] Includes DWCV carryover

[4] Includes Phase 8 and increased pumping capacity

California Aqueduct
Program Capabilities
Year 2030
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
SWP Deliveries1,2	509,000	175,000	1,472,000
San Luis Carryover3	93,000	285,550	285,550
SWP Call-back of DWCV Table A Transfer	26,000	5,000	0
Central Valley Storage and Transfers			
Semitropic Program	107,000	107,000	0
Arvin Edison Program	90,000	90,000	0
San Bernardino Valley MWD Program	37,000	70,000	20,000
Kern Delta Program	50,000	50,000	0
Subtotal of Current Programs	***912,000***	***783,000***	***1,778,000***
Programs Under Development			
Delta Improvements4	110,000	110,000	240,000
Market Transfer Options	0	200,000	0
Central Valley Transfers/Purchases	125,000	100,000	0
Mojave Program	35,000	35,000	0
IRP SWP Target	29,000	74,450	0
Subtotal of Proposed Programs	***299,000***	***519,000***	***240,000***
Maximum Supply Capability	**1,211,000**	**1,302,000**	**2,018,000**

[1] Single Dry-year figure includes 76 TAF of additional SWP supplies in 1977 per DWR 2005 State Water Project Delivery Reliability Report, which assumes 150 TAF of SWP carryover in San Luis Reservoir in addition to contractors' carryover

[2] Multiple and Single Dry year figures include DWCV Table A supplies

[3] Includes DWCV carryover

[4] Includes Phase 8 and increased pumping capacity

Colorado River Aqueduct
Program Capabilities
Year 2010
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
Base Apportionment – Priority 4	550,000	550,000	550,000
IID/MWD Conservation Program	85,000	85,000	85,000
Priority 5 Apportionment (Surplus)	0	0	0
PVID Land Management Program	111,000	111,000	111,000
Less: Coachella SWP/QSA Transfer	(35,000)	(35,000)	(35,000)
Forbearance for present perfected rights	(36,000)	(36,000)	(36,000)
Subtotal of Current Programs	***675,000***	***675,000***	***675,000***
Programs Under Development			
Lake Mead Storage Program	100,000	200,000	0
Salton Sea Restoration Transfer	95,000	95,000	95,000
Subtotal of Proposed Programs	***195,000***	***295,000***	***95,000***
Maximum Metropolitan Supply Capability	**870,000**	**970,000**	**770,000**
Additional Non-Metropolitan CRA Supplies			
SDCWA/IID Transfer	70,000	70,000	70,000
Coachella & All-American Canal Lining	94,000	94,000	94,000
Maximum CRA Supply Capability 1	**1,034,000**	**1,134,000**	**934,000**
Maximum Expected CRA Deliveries	**1,034,000**	**1,134,000**	**934,000**

[1] Colorado River Aqueduct deliveries limited to 1.250 MAF annually

Colorado River Aqueduct
Program Capabilities
Year 2015
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
Base Apportionment – Priority 4	550,000	550,000	550,000
IID/MWD Conservation Program	80,000	80,000	80,000
Priority 5 Apportionment	0	0	0
PVID Land Management Program	111,000	111,000	111,000
Less: Coachella SWP/QSA Transfer	(35,000)	(35,000)	(35,000)
Forbearance for present perfected rights	(62,000)	(62,000)	(62,000)
Subtotal of Current Programs	***644,000***	***644,000***	***644,000***
Programs Under Development			
Lake Mead Storage Program	100,000	200,000	0
Salton Sea Restoration Transfer	210,000	210,000	210,000
Subtotal of Proposed Programs	***310,000***	***410,000***	***210,000***
Maximum Metropolitan Supply Capability	**954,000**	**1,054,000**	**854,000**
Additional Non-Metropolitan CRA Supplies			
SDCWA/IID Transfer	100,000	100,000	100,000
Coachella & All-American Canal Lining	94,000	94,000	94,000
Maximum CRA Supply Capability 1	**1,148,000**	**1,248,000**	**1,048,000**
Maximum Expected CRA Deliveries	**1,148,000**	**1,248,000**	**1,048,000**

[1] Colorado River Aqueduct deliveries limited to 1.250 MAF annually

Colorado River Aqueduct
Program Capabilities
Year 2020
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
Base Apportionment – Priority 4	550,000	550,000	550,000
IID/MWD Conservation Program	80,000	80,000	80,000
Priority 5 Apportionment	0	0	0
PVID Land Management Program	111,000	111,000	111,000
Less: Coachella SWP/QSA Transfer	(35,000)	(35,000)	(35,000)
Forbearance for present perfected rights	(62,000)	(62,000)	(62,000)
Subtotal of Current Programs	***644,000***	***644,000***	***644,000***
Programs Under Development			
Lake Mead Storage Program	200,000	400,000	0
Salton Sea Restoration Transfer	0	0	0
Subtotal of Proposed Programs	***200,000***	***400,000***	***0***
Maximum Metropolitan Supply Capability	**844,000**	**1,044,000**	**644,000**
Additional Non-Metropolitan CRA Supplies			
SDCWA/IID Transfer	193,000	193,000	193,000
Coachella & All-American Canal Lining	94,000	94,000	94,000
Maximum CRA Supply Capability 1	**1,131,000**	**1,331,000**	**931,000**
Maximum Expected CRA Deliveries	**1,131,000**	**1,250,000**	**931,000**

[1] Colorado River Aqueduct deliveries limited to 1.250 MAF annually

Colorado River Aqueduct
Program Capabilities
Year 2025
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
Base Apportionment – Priority 4	550,000	550,000	550,000
IID/MWD Conservation Program	80,000	80,000	80,000
Priority 5 Apportionment	0	0	0
PVID Land Management Program	111,000	111,000	111,000
Less: Coachella SWP/QSA Transfer	(35,000)	(35,000)	(35,000)
Forbearance for present perfected rights	(62,000)	(62,000)	(62,000)
Subtotal of Current Programs	***644,000***	***644,000***	***644,000***
Programs Under Development			
Lake Mead Storage Program	200,000	400,000	0
Salton Sea Restoration Transfer	0	0	0
Subtotal of Proposed Programs	***200,000***	***400,000***	***0***
Maximum Metropolitan Supply Capability	**844,000**	**1,044,000**	**644,000**
Additional Non-Metropolitan CRA Supplies			
SDCWA/IID Transfer	200,000	200,000	200,000
Coachella & All-American Canal Lining	94,000	94,000	94,000
Maximum CRA Supply Capability 1	**1,138,000**	**1,338,000**	**938,000**
Maximum Expected CRA Deliveries	**1,138,000**	**1,250,000**	**938,000**

[1] Colorado River Aqueduct deliveries limited to 1.250 MAF annually

Colorado River Aqueduct
Program Capabilities
Year 2030
(acre-feet per year)

Hydrology	Multiple Dry Years (1990-92)	Single Dry Year (1977)	Average Year (1922-2004)
Current Programs			
Base Apportionment – Priority 4	550,000	550,000	550,000
IID/MWD Conservation Program	80,000	80,000	80,000
Priority 5 Apportionment	0	0	0
PVID Land Management Program	111,000	111,000	111,000
Less: Coachella SWP/QSA Transfer	(35,000)	(35,000)	(35,000)
Forbearance for present perfected rights	(62,000)	(62,000)	(62,000)
Subtotal of Current Programs	***644,000***	***644,000***	***644,000***
Programs Under Development			
Lake Mead Storage Program	200,000	400,000	0
Salton Sea Restoration Transfer	0	0	0
Subtotal of Proposed Programs	***200,000***	***400,000***	***0***
Maximum Metropolitan Supply Capability	**844,000**	**1,044,000**	**644,000**
Additional Non-Metropolitan CRA Supplies			
SDCWA/IID Transfer	200,000	200,000	200,000
Coachella & All-American Canal Lining	94,000	94,000	94,000
Maximum CRA Supply Capability 1	**1,138,000**	**1,338,000**	**938,000**
Maximum Expected CRA Deliveries	**1,138,000**	**1,250,000**	**938,000**

[1] Colorado River Aqueduct deliveries limited to 1.250 MAF annually

Appendix 2:

Semiannual Report on Metropolitan's Local Resources and Conservation Programs January through June 2006

▪ Semiannual Report on Metropolitan's Local Resources and Conservation Programs - January through June 2006

Summary

To achieve resource targets established in the regional Integrated Water Resources Plan, Metropolitan encourages cost-effective water recycling, groundwater recovery and conservation programs. During Fiscal Year 2005/06, Metropolitan provided over $35 million to sustain water supply reliability through development of local projects and water-use efficiency improvements. Highlights of the second half of the fiscal year include:

LOCAL RESOURCES PROGRAM ACHIEVEMENTS

- Eastern Municipal Water District's Recycled Water Pipeline Reach 16 Project commenced operation and deliveries in April (820 acre-feet per year).
- Los Angeles Department of Water and Power's Harbor Water Recycling Project commenced deliveries to the Dominguez Gap Barrier to halt seawater intrusion (5,000 acre-feet per year).
- Provided support for Alamitos Barrier Reclaimed Water Project before State Water Resources Control Board to help create a more reasonable regulatory environment for project development.
- Participated in inaugural meeting of the Los Angeles County Recycled Water Task Force established by the County Board of Supervisors to develop broader public policy initiatives for expanded use of recycled water.

CONSERVATION PROGRAM ACHIEVEMENTS

- Executed 10-year residential master conservation funding agreements with member agencies.
- Distributed more than 1,200 weather-based irrigation controllers through distribution events and landscape irrigation workshops.
- Executed water conservation agreement with Kimberly-Clark in Fullerton for water efficient process improvements that save about 550 acre-feet per year.
- Initiated review of 22 competitive proposals from member agencies for incentives under the new Enhanced Conservation Program.

Weather based irrigation controller distribution event at Descanso Gardens. Sponsors were Cities of Pasadena and Burbank, and Glendale Water and Power. Left to right: Jane Raftis, Herber Garcia, Mary Forrest and Nancy Long.

Detailed Report

Implementation is summarized regarding progress through the last half of FY 2005/06 for Metropolitan's local resources and water conservation programs that help increase regional water supply reliability and achieve resource targets identified in the Integrated Resources Plan.

LOCAL RESOURCES PROGRAM

Metropolitan provides financial incentives for local development of water recycling and groundwater recovery projects that reduce demand on imported supplies. Agencies apply for funding through a competitive process, which encourages development of cost-effective and regionally beneficial projects. Metropolitan provides up to $250 per acre-foot for eligible production from participating projects.

The following table summarizes program information including recovered groundwater and recycled water production and incentive payments:

LOCAL RESOURCES PROGRAM SUMMARY			
	Recovered Groundwater	***Recycled Water***	***TOTAL***
Projects			
Active Contracts	19	55	74
Operating Projects	17	44	61
Concluded Contracts	5	7	12
Contract Yield (AFY)	84,110	280,300	364,410
Deliveries (AF)*			
FY 2005/06	50,427	77,334	127,761
FY 2004/05	41,300	70,281	111,581
Since Inception	332,882	823,227	1,156,109
Payments ($ millions)			
FY 2005/06	$9.4	$15.2	$24.6
FY 2004/05	$7.1	$14.1	$21.2
Since Inception	$60.2	$153.5	$213.7

*Deliveries and payments are as reported through June 2006; however, not all information is complete and payments are estimated until actual costs are reconciled. Production total includes data for concluded contracts.

Project Start-ups

Eastern Municipal Water District's (EMWD) Recycled Water Pipeline Reach 16 (Reach 16) started operations in April 2006. Reach 16 is a 36-inch 3.5 mile pipeline delivering 820 acre-feet per year of recycled water for landscape irrigation purposes to the Heartland Development and Heartland Country Club.

Heartland Country Club
Recycled Water Pipeline Reach 16
(Sponsored by Eastern MWD)

Los Angeles Department of Water and Power's Harbor Water Recycling Project commenced deliveries to the Dominguez Seawater Intrusion Barrier. The project will ultimately deliver 4,500 AF per year of advanced treated recycled water to the barrier, thereby reducing a demand on potable imported supplies from Metropolitan. With these deliveries, all four seawater intrusion barriers in Metropolitan's service area now use a blend of recycled water to halt seawater intrusion into adjacent groundwater basins. Recycled water deliveries to seawater intrusion barriers will grow significantly as the Orange County Water District's Groundwater Replenishment System becomes operational.

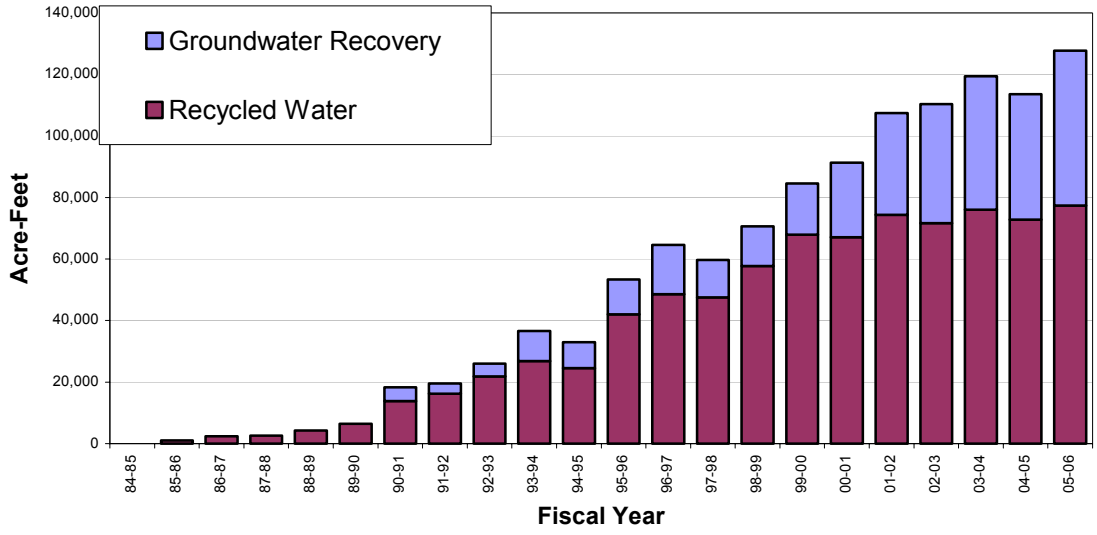
Related Activities

Metropolitan staff joined others in providing testimony in support of the Alamitos Barrier Reclaimed Water Project at a State Water Resources Control Board hearing in April. The Board subsequently deleted overly stringent effluent criteria included in the project's discharge permit issued by the Los Angeles Regional Water Quality Control Board citing public policy favoring water recycling and full protection of public health.

At the request of the Los Angeles County Department of Public Works, Metropolitan participated in the first meeting of the Los Angeles County Recycled Water Task Force. One goal of the task force, which was established by the Los Angeles County Board of Supervisors, is to recommend broader countywide policy for the expanded use of recycled water for non-potable purposes. Staff will continue to seek other opportunities and partnerships to advance recycled water use within Metropolitan's service area.

Metropolitan Funded

Recycled Water and Groundwater Recovery Projects Production



CONSERVATION PROGRAM

Incentive-based conservation targets established in the IRP are pursued in three basic water-use areas: Residential Indoor, Landscape, and Commercial / Industrial / Institutional.

The following table summarizes water savings and incentive payments:

CONSERVATION CREDITS PROGRAM PERFORMANCE SUMMARY				
	Residential	**Landscape**	**Commercial**	**Total**
Water Savings (AF)				
FY 2005/06 **	3,241	1,567	1,482	6,290
FY 2004/05 **	4,453	1,316	3,012	8,781
Since Inception*	858,400	29,200	55,300	942,900
Payments ($ million)				
FY 2005/06	7.5	0.4	2.7	10.6
FY 2004/05	8.6	0.2	1.9	10.7
Since Inception	166.0	2.0	13.0	181.0

* Includes passive conservation originated as active
** New annual savings

Grant Funding

In the second half of FY 2005/06, Metropolitan and California Department of Water Resources executed a Proposition 50 Water Use Efficiency grant agreement for web-based landscape training totaling $77,500. The following table lists current water conservation grants received from outside entities totaling about $5 million.

ACTIVE CONSERVATION GRANTS RECEIVED		
Grantor	**Purpose**	**Grant Amount**
DWR	High-Efficiency Clothes Washers	$1,660,000
DWR	High-Efficiency Toilets	$1,000,000
DWR	Weather-Based Irrigation Controllers	$1,778,700
DWR	California-Friendly Model Homes	$423,150
DWR	Web-Based Landscape Training	$77,500
USBR	Web-Based Landscape Training	$50,000
	Total	**$4,989,350**

Conservation Activities

In the second half of fiscal year 2005/06, the following notable water conservation actions were accomplished:

- Executed 10-year residential master conservation funding agreement with member agencies implementing Metropolitan's increased $195 per acre-feet of water saved incentive rate.
- Provided more than 1,200 weather-based irrigation controllers to retrofit older inefficient models through distribution events and landscape irrigation workshops made possible through a combination of Metropolitan's incentives and a State grant.
- Issued competitive Request for Proposals in May and initiated review of 22 responses from member agencies under the new Enhanced Conservation Program, established by the Board in December 2005.
- Executed Industrial Process Improvement Program water conservation agreement with Kimberly-Clark in Fullerton for recirculation upgrades that would save about 550 acre-feet per year of process water.

Residential Indoor Activities

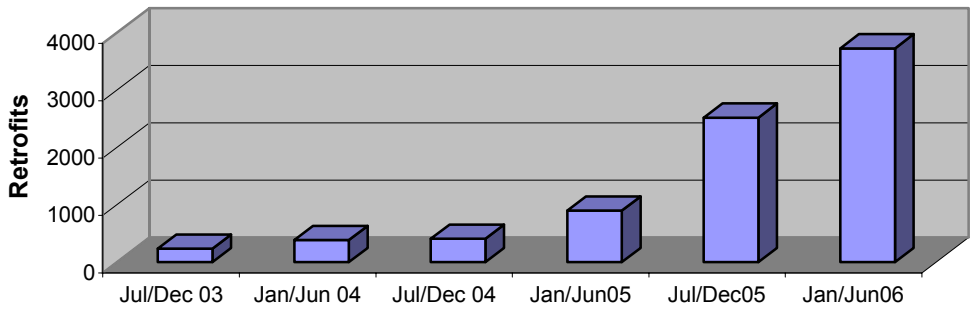
High-Efficiency Clothes Washer Program

In the second half of fiscal year 2005/06, Metropolitan provided rebates to retrofit about 10,000 high-efficiency clothes washers which save about 9,000 gallons per year per unit. Member agency allocations for number of washers were increased as a result of Board action in December 2005 increasing Metropolitan's water conservation incentive to $195 per AF.

High-Efficiency Toilet Program

Executed $1 million Proposition 50 grant agreement with the DWR for 10,000 high efficiency toilets that save about 8,000 gallons per year. HET's use less than 1.28 gallons per flush, which is less than the current federal standard of 1.6 gallons.

High-Efficiency Toilets Cumulative Retrofits



Model and New Home Pilot Programs

This pilot program evaluates opportunities to motivate the home buying public and affect purchase decisions towards water efficient devices and appliances in model homes and new construction.

- Member agencies executed four agreements with two builders to install over 500 weather-based irrigation controllers in new production homes. Metropolitan will provide an incentive of $80 per unit under the agreements.
- During the reporting period, 20 model homes advanced to the design phase after completing eligibility requirements.

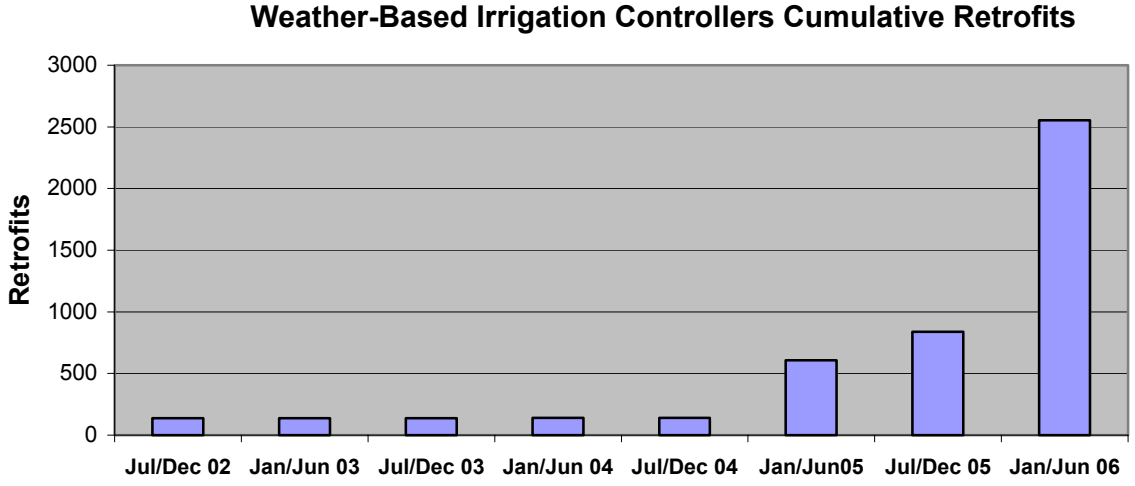
California Friendly Model Home
at "The Preserve" City of Chino by Shea Homes
(Sponsored by Inland Empire Utilities Agency)

Landscape Activities

Weather-Based Irrigation Controllers

Over the last six-months, Metropolitan has worked closely with the member agencies to explore different methods to distribute weather-based irrigation controllers to the general public. Past performance studies found that each device, with an estimated 10-year life, would save about 13,500 gallons each year. Successful strategies included direct distribution of controllers to homeowners who attend Metropolitan's landscape irrigation efficiency training and distribution events where residents would exchange existing controllers for new equipment.

These new opportunities are identified as important landscape initiatives under Metropolitan's five-year conservation strategy plan to help meet regional resource targets outlined in the Integrated Resources Plan. As a result, Metropolitan and its member agencies have tripled the number of rebates provided for weather-based irrigation controllers between January and June 2006. To date, more than 2,600 weather-based irrigation controllers have been retrofitted since the inception of the program.



In partnership with Foothill Municipal Water District and Armstrong's Garden Center, Metropolitan distributed 165 weather-based irrigation controllers to La Crescenta, La Cañada-Flintridge and Altadena residents.

Foothill MWD
Director Robert Sloan and Linda Thomas


Check-in at Descanso Gardens

- Metropolitan also partnered with the cities of Burbank, Glendale and Pasadena and Foothill Municipal Water District to implement a larger distribution event at Descanso Gardens in La Cañada-Flintridge.
- A total of 432 controllers were distributed to residential customers in exchange for their less efficient models. A DVD was provided to each resident to assist with controller installation and programming.

- Metropolitan partnered with Three Valleys Municipal Water District on an event that provided training and distributed about 100 units to residents.
- Co-funding for all events was provided by Proposition 13 grants administered by DWR.


Customer Exchange


Irrigation timers exchanged at Descanso Gardens event


Satisfied Customer

Protector del Agua Irrigation Efficiency Training

- Completed the Water for the West grant project to convert two residential classroom modules into web tutorials. Both classess will be made available to the general public on Metropolitan's bewaterwise.com web site.
- Distributed about 380 weather-based irrigation controllers to qualified homeowners that attended Metropolitan's landscape irrigation efficiency training workshops hosted by Calleguas MWD, City of Camarillo, City of Burbank, City of Pasadena, Inland Empire Utilities Agency, Las Virgenes MWD, San Diego County Water Authority, City of San Fernando, Three Valleys MWD, and Western MWD.

Protector del Agua
Residential Customer Training Class
(Sponsored by the City of Burbank)

Synthetic Turf Program

Irvine Ranch Water District completed construction of four synthetic turf sites in the cities of Irvine, Lake Forest, Newport Beach and Tustin. Research grants from Metropolitan included co-funding by the U.S. Bureau of Reclamation.

City of Lake Forest's Concourse Park

City of Tustin's Cedar Grove Park

City of Newport Beach's Bonita Canyon Park

- The Upper San Gabriel Valley Municipal Water District partnered with Gabrielino and La Puente high schools to complete installation of synthetic turf at athletic fields.
- The City of Vista, within the San Diego County Water Authority's service area, completed the Townsite Park Synthetic Turf Soccer Field project and hosted a dedication ceremony.

Outdoor Conservation Outreach Program

From April to June, Metropolitan implemented an advertising campaign to promote rebates on weather-based irrigation controllers, California Friendly plants and indoor conservation devices. The campaign featured 30-second animated television commercials, 60-second radio spots, and color print ads that appeared via the following media:

Television (Los Angeles) KABC, KCAL, KCBS, KNBC, KTLA

Television (San Diego) KFMB, KGTV, KNSD, KUSI

Radio (Los Angeles) KABC, KFI, KFWB, KMZT, KNX, KOST, KPCC, KRTH, KTLK, KTWV, KZLA

Printed Material (Southern California) Better Homes & Gardens, California Landscaping, Newsweek, Sunset, Time

Commercial / Industrial / Institutional Devices Retrofitted

In the second half of FY 2005/06, Metropolitan continued funding commercial, industrial and institutional (CII) customers to retrofit high-water using devices with ones that are more efficient. The number of devices retrofitted increased by 229 percent compared to the devices retrofitted in the first half of the FY. In total, more than 15,600 devices had been retrofitted.

CII Performance (6 months)

Applications processed:	906
Devices Retrofitted:	10,410
Metropolitan Cost:	$1,986,440
Member Agency Cost Share:	$445,060

Ultra low flush and high-efficiency toilets are at the top of the list of devices retrofitted, accounting for 78 percent of the total. This tendency contrasts with the declining participation in Metropolitan's residential ultra low flush toilet program, which is reaching saturation levels. Staff is looking at the CII Program as the way to ensure that the Conservation Credits Program is back on pace for the IRP goals. Staff is exploring the development of new partnerships with energy utilities to increase program participation through co-funding and mutually beneficial projects.

Phase 1 of the Rinse and Save Program is completed. The following are comments by customers who participated in the program:

> "Loyola Marymount University will save 2.5 million gallons of water and the energy needed to heat 2.5 million gallons. These benefits will save the university over $10,000 annually."
> *By Mr. Gerald Robinson, Energy Manager for Loyola Marymount University.*

> "Your rebate program helps a lot of people who run small businesses, like me."
> *By Mr. Ock Park, Laundry owner.*

> "This program itself is an excellent opportunity for someone like me to save water and money. Without this program, it would have been very difficult for me to replace my old washers."
> *By Mr. Saleem Shihady, Laundry owner.*

Industrial Process Improvement Program

- In June, the Board approved funding of over $500,000 for an Industrial Process Improvement Program agreement with Kimberly-Clark Corporation in the City of Fullerton. Once implemented, Kimberly-Clark will invest about $1.8 million to install water efficient processes including a reverse osmosis system and collection tanks to recover water for reuse in the tissue-making process. More than 550 acre-feet of potable water will be saved annually.
- Two additional agreements were executed for water efficiency projects that together will save about 64 acre-feet of water annually. AmeriPride Uniform Services in the City of Vernon will install a reclamation and reuse system for commercial laundry operations. Nu-Tec Powder Coating will upgrade their color-application process to reuse rinse water at their Anaheim facility.

Tissue-making process at Kimberly-Clark Corporation (*Fullerton)*

Enhanced Conservation Program

Metropolitan issued a Request for Proposals for the new Enhanced Conservation Program. In December 2005, the Board approved this program with an incentive of up to $250 per acre-foot, as compared to $195 per acre-foot which is provided in the core Conservation Program. A total of 22 proposals were received from member agencies. The program provides funding to develop cost-effective water conservation projects that pilot new creative program approaches to urban water conservation and increase participation in water efficiency measures leading to additional regional water savings. Successful projects would demonstrate new progressive approaches to water conservation in Southern California. Selections will be made and reported to the board in October 2006.