



- Report on Integrated Water Resources Plan Implementation

### Summary

---

The Report on Integrated Water Resources Plan Implementation (Report) provides a progress report on the 2010 Integrated Water Resources Plan Update (2010 IRP Update).

### Purpose

---

Informational

### Detailed Report

---

#### Background

In 2010, the Board adopted the 2010 IRP Update, updating Metropolitan's Integrated Water Resources Plan (IRP) strategy. This strategy allows Metropolitan and its member agencies to manage future challenges while balancing investments with water reliability benefits. Within this strategy, is an adaptive management approach that guides Metropolitan towards its water resource development targets to maintain water supply reliability over the next 25 years.

#### **Reporting by Area**

During fiscal year 2012/13, Metropolitan took specific actions to ensure the continued implementation of the 2010 IRP Update, including an innovative approach to research under the Foundational Actions Funding Program. Specific actions are reported in the following four resource areas:

- Colorado River Aqueduct – Metropolitan's goal under the 2010 IRP Update is to develop programs that will provide for a full Colorado River Aqueduct when needed. This Report presents a summary of Metropolitan's efforts to build and maintain partnerships and programs to further develop dry-year supplies for the CRA.
- State Water Project – In accordance with the 2010 IRP Update, Metropolitan is pursuing improvements in the Sacramento – San Joaquin Delta (Delta) to restore supply reliability, water quality, and ecosystem health. This Report presents actions carried out under Metropolitan's Bay-Delta Initiatives Program to advance water supply reliability efforts in the Delta.
- Storage and Transfers – The 2010 IRP Update includes storage and transfers as a component of maintaining Metropolitan's reliability goals. This Report presents a summary of recent historical storage balances, and shows the current trend for 2013. Based on existing storage levels, Metropolitan did not pursue significant water transfers in 2013. But Metropolitan did make limited purchases under the new Multi-Year Demonstration Pool.
- Managing Demands – Metropolitan manages demands through a combination of water use efficiency and local resource augmentation. This Report presents the 2012/13 actions for these resource areas in light of the 2010 IRP Update and the Water Conservation Act of 2009 (20x2020). Additionally, in 2013 Metropolitan launched a two-year pilot Foundational Actions Funding Program to support member agencies in conducting technical studies and pilot projects that would reduce barriers to future production of local resources.

#### Colorado River Aqueduct

Metropolitan's goal is to develop supply programs that will provide for a full Colorado River Aqueduct (Aqueduct) when needed. To achieve this goal Metropolitan continues to build and maintain partnerships with Colorado River parties.

## Board Report (Report on Integrated Water Resources Plan Implementation)

For fiscal year 2012/13, Metropolitan's Colorado River accomplishments resulted in the following: greater dry-year storage reserves on the Colorado River; the development of a binational water management agreement with Mexico; the completion of a study evaluating long-term supply and demand options in the Colorado River, and successful defense of legal challenges to the Quantification Settlement Agreement (QSA.) These are described below.

- Increase in Dry-Year Storage – Metropolitan stored a significant amount of Intentionally Created Surplus (ICS) water in Lake Mead during 2012, yielding an additional 161,000 acre-feet of conserved water in Lake Mead for future use. The conserved water resulted from various programs and agricultural conservation projects on the Colorado River. As of June 30, 2013, Metropolitan had 580,000 acre-feet of ICS storage credits in Lake Mead – the largest amount since the program was adopted in 2007. Water stored in Lake Mead as ICS can be drawn out in future years to supplement dry-year supplies and achieve full Aqueduct deliveries if needed.
- Binational Water Management Discussions – In November 2012, Metropolitan staff and representatives from the Colorado River Basin States, the U. S. Bureau of Reclamation, and the International Boundary and Water Commission reached agreement with Mexico on a binational water management agreement. The agreement led to the approval of Minute 319 to the United States and Mexico International Water Treaty. Among other things, Minute 319 (and the supporting related agreements) does the following: (1) includes Mexico in surplus and shortage sharing of Colorado River supplies; (2) allows Mexico to store water in United States' reservoirs; (3) provides for environmental flows for the Colorado River Delta; and (4) allows agencies in the United States to fund conservation projects in Mexico and receive a portion of the water conserved. Metropolitan, Southern Nevada Water Authority, and Central Arizona Project committed to provide \$10 million to fund canal lining projects in Mexico in exchange for 95,000 acre-feet of storage credits in Lake Mead.
- Completion of Colorado River Basin Supply and Demand Study - In December 2012, Metropolitan staff and representatives from the other Colorado River Basin States participated with Reclamation to complete the Colorado River Basin Water Supply and Demand Study (Basin Study.) The Basin Study projected the potential supply and demand imbalance in the Colorado River through 2060. The Basin Study concluded that the potential annual supply and demand gap could reach 3.2 million acre-feet by 2060, taking into account the potential effects of climate change. The Basin Study also listed various options that could meet that potential gap, including increased conservation activities, agricultural to urban transfers, and projects to augment water supplies. In May 2013, the Department of Interior formally kicked off the next steps for the Basin Study Process by forming three work groups to refine the initial conclusions of the Basin Study. Metropolitan is participating on all three workgroups; Municipal and Industrial Conservation, Agricultural Conservation and Transfers, and Healthy River Flows. These workgroups have begun developing specific actions and recommendations.
- Success in QSA Litigation - The California Court of Appeal upheld the QSA mitigation funding agreements against constitutional challenges in 2011. The case was remanded to the trial court to resolve remaining issues relating to the validity of the QSA contracts and compliance with the California Environmental Quality Act. After a re-trial on those issues, the trial court issued its statement of decision in June 2013 confirming the validity of the QSA and rejecting the CEQA challenges. The QSA agreements to which federal agencies are a party were separately challenged in a federal lawsuit. In April 2012, the court granted summary judgment to the United States rejecting the claims that the QSA violated the Clean Air Act and National Environmental Policy Act. That judgment has been appealed. These legal victories allow the continued implementation of the QSA programs.

## Board Report (Report on Integrated Water Resources Plan Implementation)

### State Water Project

Based on the 2010 IRP Update target for State Water Project (SWP) supply development, Metropolitan will pursue improvements in the Delta to restore the reliability of SWP supplies. Metropolitan's Bay-Delta Initiatives Program carried out actions throughout the year to advance this goal.

- Regulatory Issues – The State Water Resources Control Board (SWRCB) is continuing its phased review and update of the 2006 Water Quality Control Plan (WQCP) for the Bay-Delta. Phase 1 focuses on: the southern Delta salinity objectives for the protection of agriculture; San Joaquin River flow objectives for the protection of fish and wildlife; and a program of implementation for achieving those objectives. Phase 2 considers the comprehensive review of the other elements of the Bay-Delta WQCP, including but not limited to Sacramento River and Delta outflow objectives. SWRCB released a public review draft of its environmental document (Substitute Environmental Document or SED) in support of its Phase 1 proposed changes to the WQCP. Metropolitan staff provided oral and written comments to the SWRCB regarding the environmental document, in collaboration with the State Water Contractors (SWC) and federal water contractors of the San Luis and Delta Mendota Water Authority. Additionally, Metropolitan staff worked with state and federal water contractors to develop input into the state and federal agency submittal to the federal court on the remand process for the Delta smelt and the Salmon Biological Opinions. Metropolitan is working with the agencies and other public water interests to participate in a collaborative science effort to support development of new biological opinions.
- Emergency Preparedness – Metropolitan continued to work in a lead role with the SWC to facilitate development of a state and federal emergency preparedness and response plan in the event of a major earthquake in the Delta region. A final DWR Mitigated Negative Declaration in July 2013 supports land purchase, facility improvements, and continued stockpiling of emergency materials at three key storage sites in the Delta. Metropolitan's technical work has revealed seismic deficiencies in some reaches of the pathway levees and is formulating remedial measures with the Delta reclamation districts. These combined actions would facilitate development of a freshwater pathway to the export pumps, if warranted, under emergency conditions.
- Habitat Restoration – Metropolitan staff supported efforts of the State and Federal Contractors Water Agency (SFCWA) to pursue habitat restoration in two areas: the Lower Yolo Habitat Restoration Project and the Suisun Marsh Tule Red Project. Both projects are located in areas which make them a high priority for providing fishery benefits. Both projects contribute toward the Endangered Species Act requirements for 8,000 acres of new tidal wetlands and restoration goals in the biological opinions. The Draft Environmental Impact Report for Lower Yolo was released on April 22, initiating a public review period ending June 6. SFCWA certified a Final EIR and adopted the Project (i.e., Tidal Marsh Complex Alternative) in July 2013.
- Science Program – Metropolitan staff worked jointly with the California Department of Water Resources (DWR) to develop and refine modeling tools for Delta turbidity forecasting. These modeling tools were developed by Metropolitan to help implement the adult Delta smelt actions within the Biological Opinion. Metropolitan provided support in using the modeling tools to forecast turbidity during the 2012/13 delta smelt spawning period. Metropolitan is also working with appropriate agencies to prepare for the 2013/14 spawning period by looking at lessons learned from the previous year and attempting to improve forecasting and decision making in the future.
- Bay Delta Conservation Plan– Metropolitan staff provided input and comments on key Bay Delta Conservation Plan (BDCP) issues, including the administrative drafts of the BDCP and the Environmental Impact Report/Environmental Impact Statement (EIR/EIS). Metropolitan staff also provided independent risk assessments, cost estimates, pipeline/tunnel optimization studies, geotechnical exploration program and project management support in support of Delta conveyance assessments.

## Board Report (Report on Integrated Water Resources Plan Implementation)

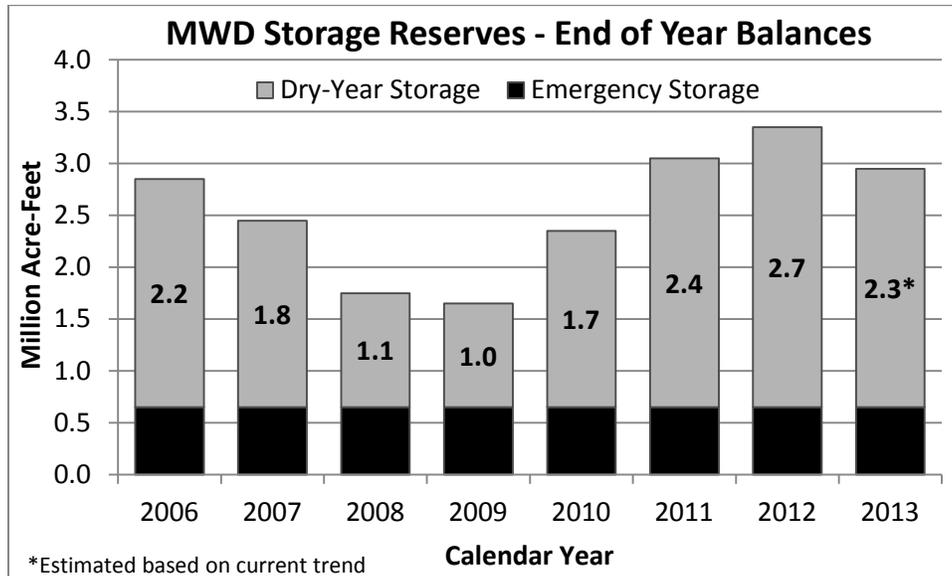
- Delta Habitat Conservation and Conveyance Program– The goal of the Delta Habitat Conservation and Conveyance Program (DHCCP) is to evaluate the potential environmental impacts of new water conveyance options that: support and enhance the health of the Delta; and increase the reliability of export water supplies. Metropolitan provided essential ongoing engineering support to the DHCCP.
- Delta Stewardship Council–Staff worked closely with other interests to develop detailed comments on a series of Council staff documents, including: draft Delta Plans, Environmental Impact Reports, and documents required by the rule-making process for the State Office of Administrative Law leading up to the adoption of the Delta Plan in June. Staff worked with the Council to support changes to the Delta Plan that address “stressors” in the Delta, such as habitat, nutrients, seismic risk, and predators. The Final Delta Plan contained a number of issues that Metropolitan believes are deficient. As a result, Metropolitan filed litigation to correct the deficiencies along with numerous other parties.
- Water Quality – The administrative appeal process for the Sacramento Regional County Sanitation District (SRCSD) discharge permit concluded in December 2012. On December 4, 2012, the SWRCB unanimously upheld the permit adopted by the Central Valley Regional Water Quality Control Board in December 2010 that included effluent limits for ammonia, nitrate, and pathogens. On April 26, 2013, the SRCSD, the State and Regional Water Boards, and the public water agencies participating in the permit litigation agreed to a partial settlement of SRCSD’s litigation. Metropolitan participated in the negotiations leading to the partial settlement. This will ensure that nutrient loads to the Sacramento River will be substantially reduced by early 2021; an action that is expected to provide significant benefits to the Delta ecosystem. SRCSD’s litigation challenging the tertiary filtration requirements will still move forward.
- State Water Contract Extension Negotiations – In May, Metropolitan and other customers of the SWP commenced negotiations with DWR to extend the contract term. The objective of the negotiations is to extend the contract term between 40 to 75 years beyond the December 2035 termination date. Negotiations are also addressing the impacts that the lengthened term would have on some of the contract financial provisions.

### Storage and Transfers

Storage and transfers play an integral role in maintaining Metropolitan’s future reliability under the 2010 IRP Update. Storage and transfers will continue to help Metropolitan remain flexible and manage variations in supplies and demands that occur from year-to-year.

The following chart shows the actual end of year balances in Metropolitan storage from 2006 through 2012, and the current trend estimate for the end of 2013. In addition, Metropolitan maintains roughly 650 TAF of emergency storage (shown in black) in all years. Emergency storage is reserved solely for emergency purposes, and is not considered to be available to meet dry-year demands. This chart illustrates how storage is used to manage annual differences between supplies and demands. At the end of 2006, following a sequence of above average and wet conditions on the SWP, Metropolitan’s dry-year storage reserves reached 2.2 MAF. From 2007 through the end of 2009, Metropolitan withdrew 1.2 MAF from its storage reserves to help mitigate shortfalls between supplies and demands. These shortfalls were due in large part to low SWP deliveries; a result of new fisheries restrictions and a sequence of dry hydrologic conditions. From the end of 2009 through the end of 2012, improved hydrologic conditions on the SWP combined with low demands, allowed Metropolitan to store 1.7 MAF; more than enough to fully recover from the previous years’ withdrawals. Based on current trend estimates of supplies and demands, Metropolitan will use approximately 410 TAF of dry-year reserves to meet demands in 2013. This would result in an ending dry-year storage balance of 2.3 MAF. Despite the storage withdrawals anticipated for 2013, Metropolitan is well positioned to ensure water supply reliability for 2014 and beyond.

Board Report (Report on Integrated Water Resources Plan Implementation)



In addition to the storage actions described above, Metropolitan also participated in a number of short-term dry-year transfer opportunities over the past several years. A complete listing of Metropolitan’s recent transfer activities can be found in the November 2011 Report on 2008-2010 Water Transfer and Exchange Transactions. A few examples include: the State Water Contractor Buyers Group, the Governor’s Drought Water Bank, and a 3-for-2 exchange with Westlands Water District.

Metropolitan did not pursue large amounts of water transfer supplies in 2013 due to the adequate storage reserves discussed above. Metropolitan staff did work with other SWP Contractors and the Department of Water Resources to develop new programs to manage SWP supplies, including a Multi-Year Water Pool Demonstration Program (Water Pool.) The Water Pool allows SWP Contractors to sell and purchase Table A supplies among the SWP contractors. In 2013, Metropolitan purchased 30,000 acre-feet from the Water Pool.

**Managing Demands**

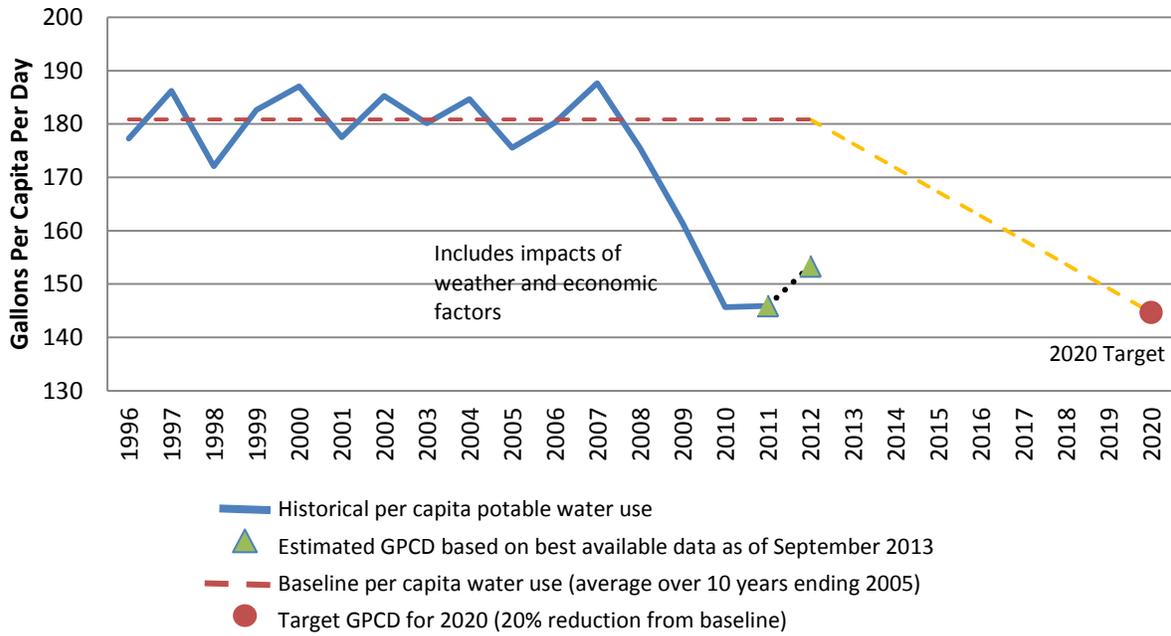
Metropolitan’s diverse water resource portfolio is strengthened by local resource and water use efficiency programs. Over the past three decades, Metropolitan has helped develop local projects for water use efficiency, recycling, groundwater recovery, and seawater desalination. In 1990, these local resources comprised approximately 40 percent of total regional demand management and supply; by 2035 they are expected to provide more than 60 percent.

**Per Capita Water Use**

Per capita water use is one indicator of progress in advancing water use efficiency. Although factors such as weather and economic conditions affect the calculation of per capita water use; the trend shows continued lower per capita water use over time.

California is working to achieve a 20 percent reduction in urban per capita potable water use by 2020. After adjusting for revised population estimates resulting from the 2010 Census, Metropolitan’s baseline is 181 GPCD and the 2020 reduction target is 145 GPCD (see chart below). Using preliminary data, per capita water use is estimated at 146 GPCD in 2011 and 153 GPCD in 2012. The region’s increase in per capita water use in 2012 can be explained in part by improved economic conditions and drier weather as compared with the previous year. The current estimate of 153 GPCD represents a 15 percent decrease from baseline GPCD, and indicates solid progress toward the region’s 2020 target.

**Potable Per Capita Water Use in Metropolitan's Region**  
**Target 20% reduction by 2020**  
*Calendar Year*



## Board Report (Report on Integrated Water Resources Plan Implementation)

### Water Use Efficiency

Metropolitan's Long Term Conservation Plan (LTCP), articulates a framework of goals and strategies to achieve the water savings target outlined in the 2010 IRP Update. The goals of the LTCP are to: (1) achieve the conservation target in the 2010 IRP Update, (2) pursue innovation that will advance water use efficiency and conservation, and (3) transform the public's perception of the value of water within the region.

The LTCP is being implemented through five strategies that seek to increase water savings. Accomplishments in FY 2012/13 under each of these strategies include:

- **Strategy 1 – Use catalysts for market transformation**
  - Incentives for water efficient devices were provided to commercial, industrial, institutional, residential, and agricultural customers through the regional SoCalWaterSmart program. New rebates were added in October 2013, including soil moisture sensors, plumbing flow control valves, rain barrels, a new public agency landscape program, a new fitness center program, and continuing incentives for turf removal at \$1 per square foot.
  - Metropolitan was awarded a \$500,000 CALFED grant to increase the incentive for high-efficiency clothes washers from \$85 to \$110 per washer.
  - Metropolitan launched the Water Savings Incentive Program, a pay-for-performance program for custom projects in the commercial, industrial, institutional, large landscapes, and agricultural sectors.
  - The Innovative Conservation Program provides grants to entrepreneurs and others to encourage development of new technologies. The program is being implemented in collaboration with USBR, Southern Nevada Water Authority, and the Central Arizona Project.
  - Metropolitan's Business Outreach Team assists small businesses, entrepreneurs, and investors to connect via H2OTECHCONNECT, an online networking resource.
  - With a \$150,000 grant from USBR, Metropolitan is conducting a conservation market study to analyze the commercial and large landscape markets. Analysis of commercial markets identified the water savings potential in fitness centers, and targeted incentives have been added to the regional rebate program. The landscape market is being evaluated using a regional GIS mapping database to identify large landscapes, existing conservation and water recycling projects, and future opportunities to expand water use efficiency
- **Strategy 2 – Encourage action through outreach and education**
  - Metropolitan performs irrigation surveys to assist large landscape customers to identify opportunities to improve irrigation efficiency.
  - Metropolitan provides California Friendly Landscape classes for residential customers with a focus on managing irrigation.
- **Strategy 3 – Develop regional technical capability**
  - Metropolitan hosts monthly meetings for water use efficiency coordinators to share ideas and lessons learned for all of Southern California.
  - Metropolitan provides training through the Gas Company landscape training classes.
- **Strategy 4 – Build strategic alliances**
  - Metropolitan works with irrigation manufacturers, distributors and landscape contractors to encourage irrigation efficiency and landscape performance.
  - Metropolitan collaborates with the Alliance for Water Efficiency and California Urban Water Conservation Council on programs to advance water efficiency.
  - Metropolitan hosts landscape forums for water agencies and contractors to share ideas and discuss opportunities for more effective collaboration.
  - Metropolitan collaborates with energy utilities on incentive programs to make it easier for customers to participate in energy and water programs.

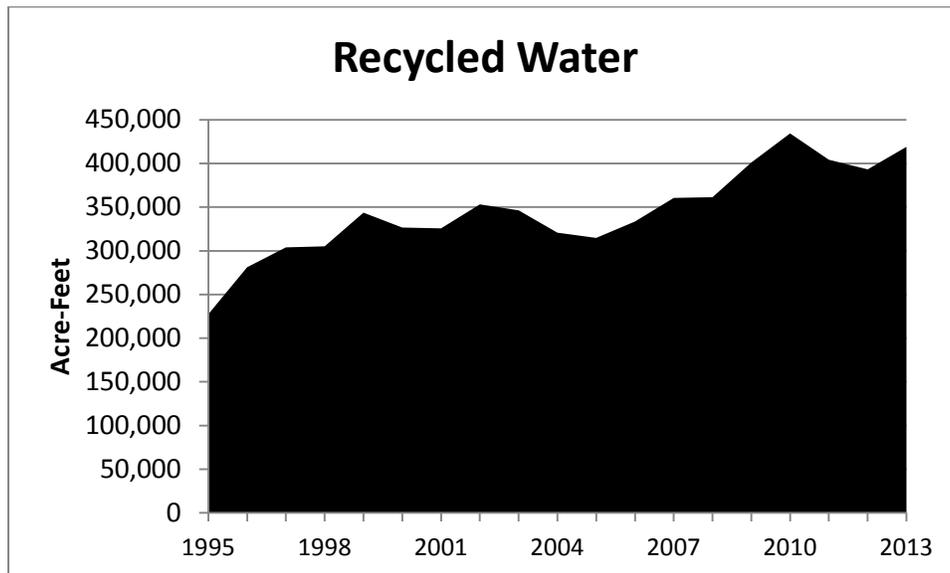
## Board Report (Report on Integrated Water Resources Plan Implementation)

- **Strategy 5 – Advance water efficiency standards**
  - In collaboration with Western Municipal Water District, Metropolitan is studying the performance of multi-stream rotary nozzles.
  - Metropolitan works with the Center for Irrigation Technology at California State University, Fresno to benchmark the performance of landscape irrigation technology to help drive innovation and advances in efficiency.
  - Metropolitan works with the California Turfgrass and Landscape Foundation and the University of California–Riverside Turfgrass Research Facility to study the effects of drought and salinity on turf grasses. University researchers are working to develop new, more drought tolerant turf grasses.
  - Metropolitan is conducting a study on retention rates of waterless urinals in its service area.
  - With a \$60,000 grant from USBR, Metropolitan is completing research on landscape water use efficiency, including water savings for smart controllers and residential customer awareness of outdoor water use.

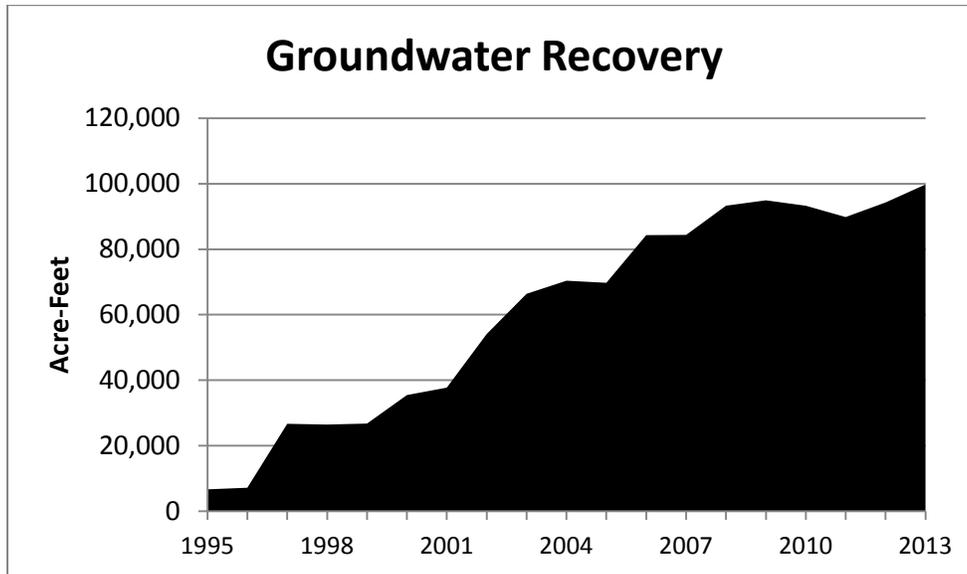
### Local Resource Augmentation

Metropolitan promotes the development of local water supplies by its member agencies through a financial incentive program. These programs support agencies that pursue local water recycling, groundwater recovery, and seawater desalination.

Metropolitan’s Local Resources Program (LRP) is a performance-based incentive program designed to expand water recycling and the recovery of degraded groundwater. In FY 2012/13, Metropolitan provided incentives through the LRP to support 73 recycled water projects which yielded an estimated 178,000 acre-feet, and 23 groundwater recovery projects which produced almost 55,000 acre-feet. In addition, another estimated 241,000 acre-feet of recycled water, which includes approximately 106,000 acre-feet of estimated base flow recharge from the Santa Ana River, and 44,000 acre-feet of recovered groundwater were produced by local agencies without Metropolitan funding. The charts below show the total recycled water and groundwater recovery production in Metropolitan’s service area, including both Metropolitan and local agency funded projects.



## Board Report (Report on Integrated Water Resources Plan Implementation)



In 2013, Metropolitan entered into agreements for two additional LRP projects with a total annual contract yield of 2,175 acre-feet. Throughout the year, Metropolitan also pursued a number of actions to advance the development of local resources, including the following:

- WaterReuse Association – Metropolitan is an active member of the Association that participated in a variety of legislative/regulatory activities. Staff serves as the Los Angeles Chapter President and provides regular legislative and regulatory updates.
- WaterReuse Research Foundation – Staff serves on the Board, which conducts applied research on behalf of the water and wastewater community for the purpose of advancing the science of water reuse, recycling, reclamation, and desalination.
- Legislation – Staff works with Metropolitan’s legislative staff and WaterReuse in analyzing and promoting legislation that increases the use of recycled water within our service area and the State of California.
- CalDesal – CalDesal is a state-wide organization devoted to advancing seawater desalination in California. Metropolitan is a founding member, holds the treasurer position, and actively participates in CalDesal’s programs.
- State Water Resources Control Board’s Ocean Plan Update – Every three years the SWRCB updates California’s Ocean Plan. The Ocean Plan sets water quality standards and discharge limits for the State’s oceans and coasts. In coordination with CalDesal and the member agencies, Metropolitan provided both written and oral testimony during the Ocean Plan hearings. The regulatory process will continue through 2013 and is scheduled to be completed in 2014.
- Technical Support – Metropolitan provided technical assistance to member agencies in support of seawater desalination. This included participating in an expert panel reviewing treatment and intake options for the Doheny Ocean Desalination Project, and providing technical assistance to a study focusing on water quality aspects of integrating desalinated water into local and regional distribution systems.
- Southern California Salinity Coalition – The Southern California Salinity Coalition (SCSC) is a partnership of water, wastewater and groundwater agencies formed to provide outreach and programs related to salinity management in support of local resources. Metropolitan serves on the SCSC’s board along with several member agencies. In the past year, the SCSC helped fund several projects, including: a whitepaper on ocean brine disposal, a study of alternatives to salt-based water softeners, a study on the impacts of salinity on urban water demand, and an update of the 1999 Salinity Management Study.

## Board Report (Report on Integrated Water Resources Plan Implementation)

### **Foundational Actions Funding Program**

As a component of the 2010 IRP Update's adaptive planning framework, Foundational Actions were identified as low-risk, low-regret actions that can be taken to help ensure the region's readiness to implement new water supply programs, should the need arise. In April 2013, the Board approved a two-year pilot Foundational Actions Funding (FAF) Program.

Actions proposed under the FAF Program consist of technical studies or pilot projects related to recycled water (including direct and indirect potable reuse), seawater desalination, stormwater, and groundwater enhancement.

In May 2013, Metropolitan issued a Request for Proposals under the 2013 FAF Program. Under the FAF Program member agencies could request up to \$500,000 of funding, which they would be required to match dollar-for-dollar with non-Metropolitan funds. In September 2013, the Board authorized staff to enter into agreements for 16 proposals with a total funding level of up to \$3.3 million. These proposals consist of six recycled water projects, six groundwater projects, two stormwater projects, and two seawater desalination projects. Final reports for the project are due February 2016.

### **Summary**

Throughout fiscal year 2012/13, Metropolitan continued to take actions and develop programs in support of achieving the long-term goals of the 2010 IRP Update. At the same time, Metropolitan used its existing resource portfolio to effectively manage current water supplies and demands; and position itself for continued reliability in the near-term. As a result of all the efforts described in this report, Metropolitan is meeting the goals of the 2010 IRP Update and as a consequence, Southern California's water outlook is more reliable and will continue to be so in the future.

### **Next Steps**

Metropolitan will continue to take actions to support the region's reliability, and ensure that the goals of the 2010 IRP Update are achieved. Staff will continue to provide the Board with annual updates on the implementation status of the 2010 IRP Update.