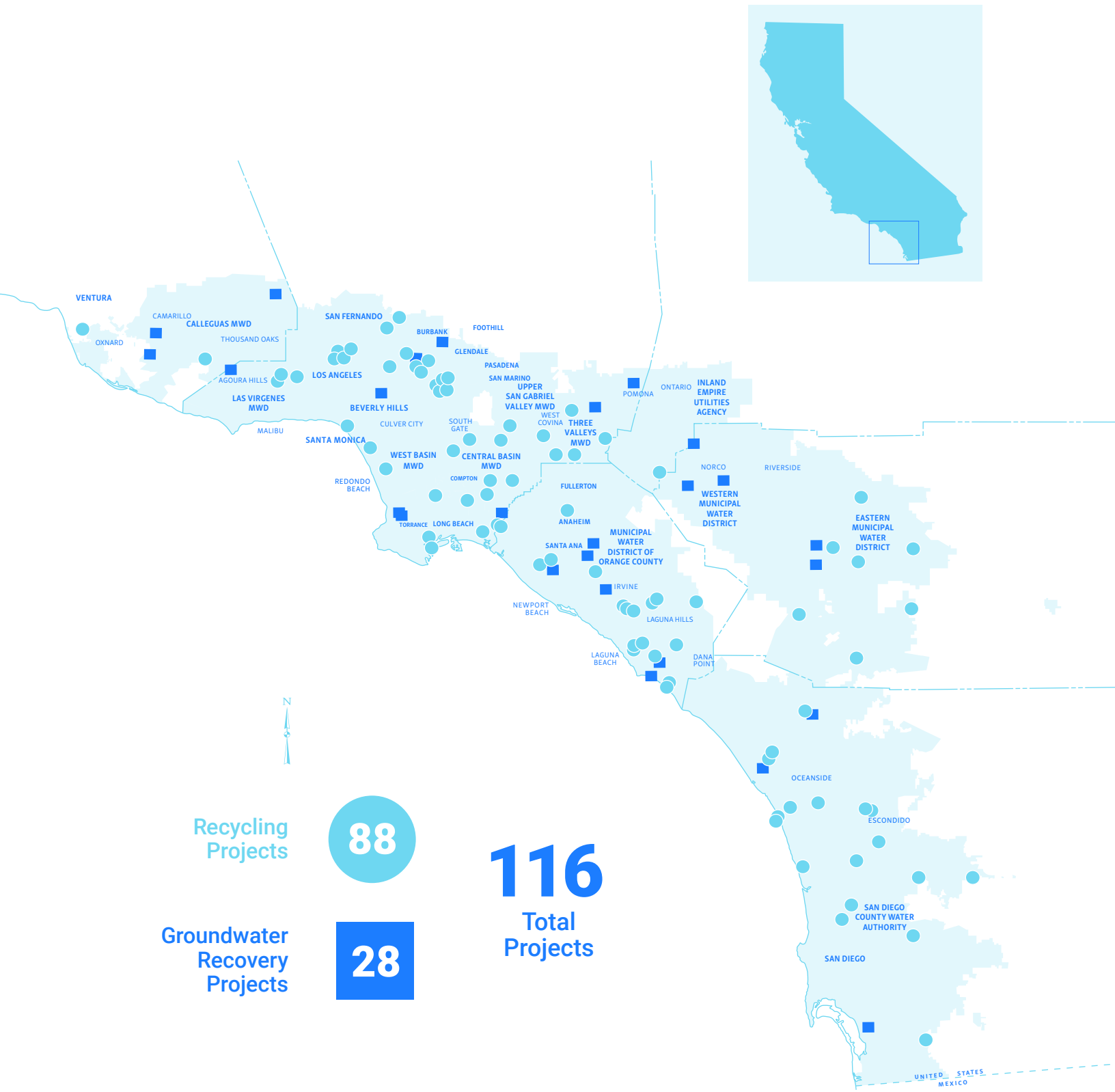
One Water

Achievements in Conservation, Recycling and Groundwater Recharge

February 2022

Covering Fiscal Year 2020/21

THE METROPOLITAN WATER DISTRICT
of SOUTHERN CALIFORNIA



Recycling Projects

88

Groundwater Recovery Projects

28

116

Total Projects

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For more information about this report, contact Metropolitan's Legislative Office in Sacramento at 916.650.2600.

Cover photo: A great egret posed on the Diamond Valley Lakeview Trail. Photo by William Wagner.

The beauty of a California Friendly®
garden on display.

About Metropolitan & This Report

The Metropolitan Water District of Southern California was established in 1928 under an act of the state Legislature to provide supplemental water supplies to its member agencies in Southern California. This report details the significant steps our region has taken to manage its demand for water.

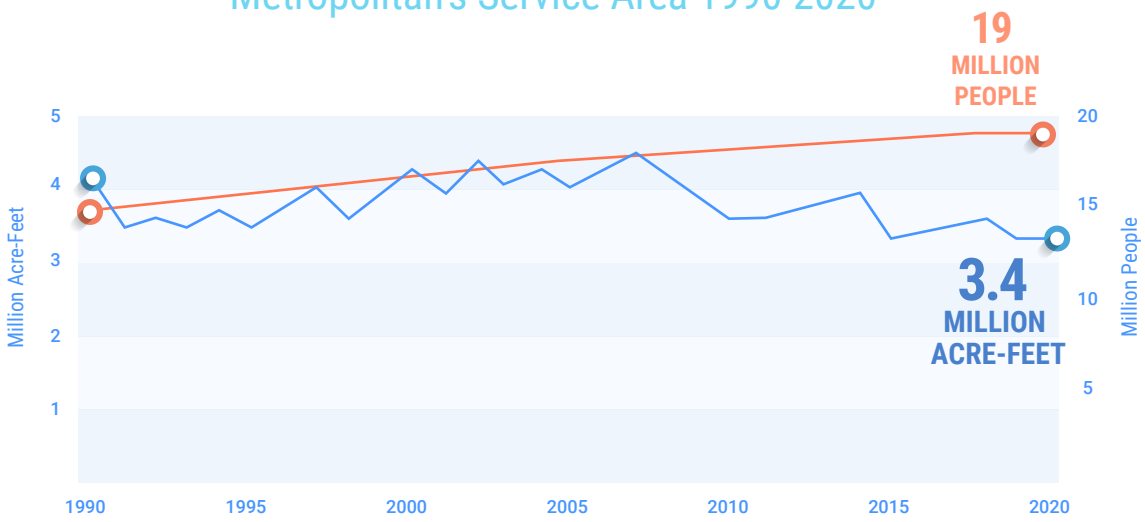
Metropolitan is a public agency and regional water wholesaler. It is a voluntary cooperative of 26 member agencies that purchase some or all their water from Metropolitan. These member agencies and sub-agencies provide water for 19 million people across six Southern California counties. Metropolitan is governed by a 38-member board of directors made up of representatives from each of Metropolitan's member agencies. The mission of Metropolitan is to provide its 5,200-square-mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Metropolitan draws on supplies from the Colorado River through the Colorado River Aqueduct, which it owns and operates; from Northern California via its participation in the State Water Project; and from exchanges and transfer arrangements. Demands on Metropolitan are also managed through conservation and local resource programs. An increasing percentage of Southern California's water supply comes from conservation, water recycling, and recovered groundwater.

Conservation and local resource development occur at the local level, and regional approaches have proven to be effective and beneficial for all member agencies. These programs increase water supply reliability and reduce the region's reliance on imported water supplies to meet future demands. They decrease the burden on Metropolitan's infrastructure, reduce system costs and free up conveyance capacity to benefit all system users, and help the region adapt to climate change. The programs advance the legislative intent that Metropolitan increase "sustainable, environmentally sound, and cost-effective water conservation, recycling, and groundwater storage and replenishment measures." Metropolitan also is involved in other beneficial programs and initiatives.

This report describes our successes in the areas of local resource development, local storage efforts, and improvement of the watersheds that provide our imported and local supplies. It also includes a snapshot of some of the people behind our programs.

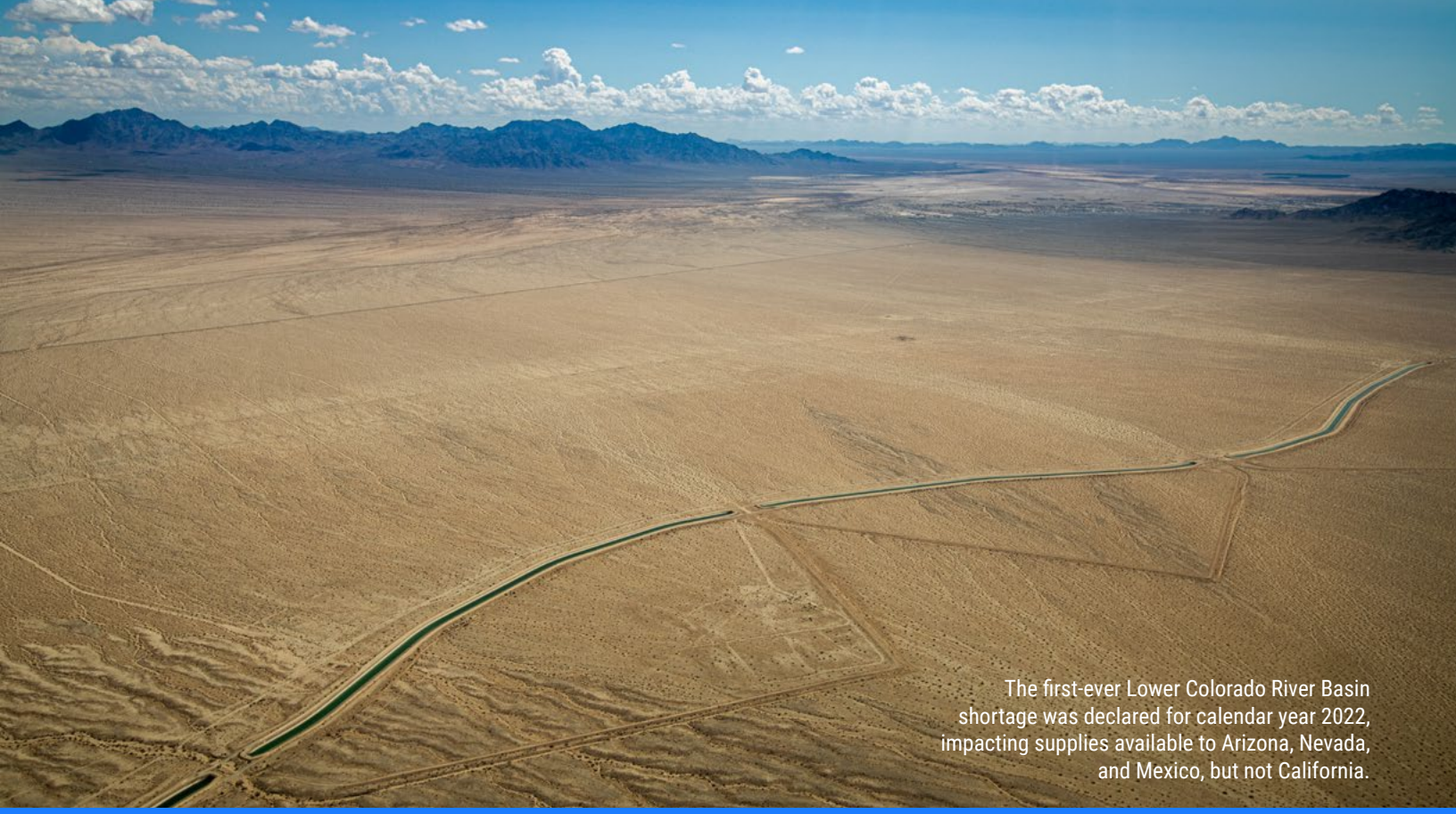
Population Growth vs Total Demand
Metropolitan's Service Area 1990-2020



Total demand includes retail consumptive and replenishment demand

The report cover reflects the theme of One Water. Imported supplies, recycled water, stormwater capture, groundwater recovery and wastewater – these are all part of the same system. In the end, water is water, and we are all part of the same water community up and down the state. A One Water approach to the challenges we face as a region and a state will foster solutions that bring us all closer to water supply reliability.

Our approach to meet the responsibility we have to our region has evolved over time. The Los Angeles Aqueduct was the forerunner to our own imported supplies. Metropolitan was founded, nearly a century ago, to build and operate the Colorado River Aqueduct. Later, we contracted with the state for a share of the State Water Project. As our region continued to grow, we developed a vast network of distribution lines, state-of-the-art treatment facilities, and reservoir storage to meet the needs of our service area. Today's vision calls for encouraging local resource development, water-use efficiency, and innovative storage initiatives that further increase the resilience of our region. We refer to this strategy as our "fourth aqueduct."



The first-ever Lower Colorado River Basin shortage was declared for calendar year 2022, impacting supplies available to Arizona, Nevada, and Mexico, but not California.

The success of this latest vision depends on each of the separate pieces of our system working together. Our imported supplies provide an important baseline and insurance backstop for our member agencies to develop local supplies. We support the development of local supply sources, and our member agencies also depend on our imported supplies when their local production drops due to various issues (such as water quality challenges, operational interruptions, and reduced surface runoff). These imported supplies also provide additional returns as they are recycled through local treatment plants and used once again.

We encourage the development of local groundwater basins to maximize the use of local storage. Groundwater agencies often use our imported supplies, particularly low salinity State Water Project supplies, to replenish their basins when levels are low.

This report details the significant steps our region has taken to manage our demand for water in unprecedented drought and in the face of daunting climate change. Our systematic program of encouraging reduced water use helps ensure that demand for water remains moderate and complements our supply development initiatives and keeps water in storage. We have been highly successful in managing demands even in the face of significant population growth within our region. In fact, the graphic above shows that our region has seen population grow by almost 30 percent since 1990, but the total demand for water over this same period has dropped by almost 20 percent. This exemplifies the notion of doing more with less, but it has not happened by chance.

One Water. Many Challenges. Coordinated Solutions.

One Water. From the beginning of time, Earth's water resources have been finite. They are part of a cycle that moves water on, above and below the Earth's surface. There is no more water and no less water now than there was two billion years ago or ever will be. This is the definition of precious.

When you look at water or touch it or drink it, you do not know its source. It may be treated water pumped from below ground, or snowmelt carried in rivers and transported in aqueducts from hundreds of miles away. While many sources of water are invisible to the eye, the solutions to water challenges brought by climate change and drought stand before us. Answers reside with different constituencies and with many different agencies in Southern California and the western states that share water resources and challenges. Exploring solutions together is the vision of One Water, a resource management strategy championed by Metropolitan's General Manager Adel Hagekhalil.

Metropolitan considers this moment in time like a "Mulholland Moment." We are looking into the future to see what we need to do to have reliable water supplies for Southern California. This time, our solution won't be to build a new aqueduct; we'll be engineering a new vision that looks to local resources, conservation, recycling and innovative partnerships with agriculture and other water agencies, as a way to complement the three major aqueducts that serve the Southland: The Los Angeles Aqueduct, California Aqueduct and Colorado River Aqueduct.

There's no doubt that Southern California will always need imported water. But we can do more to buffer the losses we face from less snowmelt from Northern California and drought on the Colorado River. One Water looks to replace these lost supplies with resources we already have, like wastewater now discharged to the Pacific Ocean. Working together – we will balance needs with realistic solutions to everyone's benefit. This includes a concerted effort to reach our underserved communities with targeted efficiency programs and other opportunities to save.

Metropolitan's Chief Executive and General Manager Adel Hagekhalil (second from right) joins his assistant general managers in a pledge to One Water - his initiative to solve water supply challenges as a region.

Here are some key accomplishments in local resource development this past fiscal year - July 2020 to June 2021:

- Metropolitan provided about $17 million in rebates, landscape and irrigation classes, research, and outreach to help consumers reduce water use in homes and businesses.

- Metropolitan approved an initiative to continue its enhanced premium high-efficiency toilet rebates for underserved communities which boosts rebates from $40 to $250 to replace toilets in multifamily housing built before 1994 with premium high-efficiency models.

- About $8 million for production of 55,000 acre-feet of recycled water for non-potable and indirect potable uses was provided by Metropolitan. An additional $7 million was financed by Metropolitan to support projects that produced about 48,000 acre-feet of recovered groundwater for municipal use.

- Member agency partners and groundwater basin managers expressed their support for the Regional Recycled Water Program through executed letters of intent.

- Metropolitan continued working with the State Water Contractors to fund and monitor important science studies and habitat projects in the Delta, including the Tule Red Tidal Restoration Project.

Achievement Scorecard

Conservation	
FY 2020/21 Total Water Saved[1]	**1,050,000 acre-feet**
New Water Saved From Metropolitan Conservation Credits Program[2]	4,120 acre-feet
Water Saved From Existing Metropolitan Conservation Credits Program[3]	207,000 acre-feet
FY 2020/21 Investment	
Metropolitan Conservation Credits Program Investment[4]	$17 million
Member Agency Conservation Investment[5]	$4 million
Metropolitan Outreach & Education	$1 million
Cumulative Savings Since 1990	
Water Saved From Metropolitan Conservation Credits Program Only[6]	**3,482,000 acre-feet**
Metropolitan Conservation Investment (excluding funding by member agencies)[7]	$840 million
Recycled Water	
FY 2020/21 Production[8]	**458,000 acre-feet**
Water Produced From Projects Receiving Metropolitan Funding	55,000 acre-feet
Water Produced From Projects Without Metropolitan Funding (incl. Santa Ana River base flow)[9]	403,000 acre-feet
FY 2020/21 Investment	
Metropolitan Funding	$8 million
Cumulative Production & Investment Since Inception[10]	
Production With Metropolitan Funding	**3,029,000 acre-feet**
Metropolitan Investment	$528 million
Groundwater Recovery	
FY 2020/21 Production	**113,000 acre-feet**
Water Produced From Projects Receiving Metropolitan Funding	48,000 acre-feet
Water Produced From Projects Without Metropolitan Funding	65,000 acre-feet
FY 2020/21 Investment	
Metropolitan Funding	$7 million
Cumulative Production & Investment Since Inception[11]	
Production With Metropolitan Funding	**1,099,000 acre-feet**
Metropolitan Investment	$181 million
Conjunctive Use Program[12]	
Metropolitan Cumulative Capital Investment	$27 million
Proposition 13 Grant Funds Administered by Metropolitan	$45 million
Water Stored Since Program Inception through June 2021	351,000 acre-feet
Water Extracted Since Program Inception through June 2021	301,000 acre-feet
Groundwater Replenishment[13]	
FY 2020/2021 Delivery	103,000 acre-feet
Cumulative Replenishment Delivery since 1984	**4,181,000 acre-feet**

Regional Summary		
	FY 2020/21	**Cumulative**
Metropolitan's Investment in Water Conservation, Recycled Water and Groundwater Recovery[14]	$31 million	$1.5 billion
	314,000 AF	**7,610,000 AF**

The numbers above have been rounded to present a topline view of conservative achievement. More precise numbers are included in the report narrative. Cumulative investment is reported in nominal dollars.

Metropolitan's Cumulative Investment

	Millions Invested	Acre-feet
Conservation	$840	3,482,000
Recycled Water	$528	3,029,000
Groundwater Recovery	$181	1,099,000
	$1.5b	**7,610,000**

Footnotes for the Achievement Scorecard

Numbers are based on the best available information during the production of this report and are subject to revision for accounting reconciliation.

1. Annual total savings include Metropolitan's Conservation Credits Program, code-based conservation achieved through Metropolitan-sponsored legislation; building plumbing codes and ordinances; reduced consumption resulting from changes in water pricing; and pre-1990 device retrofits.
2. New water savings achieved through Metropolitan's Conservation Credits Program and from member agency funded programs initiated in fiscal year 2020/21.
3. Includes water savings initially achieved through Metropolitan's Conservation Credits Program and subsequently maintained through plumbing codes.
4. Active conservation investment includes administrative fees for contracted program vendors. Investment also includes $104,000 of outreach that was budgeted through the Conservation Credits Program.
5. In addition to Metropolitan's Conservation Credits Program, member agencies and retailers also implemented local water conservation programs within their respective service areas. Member agency investment figures include rebate funding beyond rebates already provided by Metropolitan's Conservation Credits Program.
6. Cumulative water savings since 1990 that include water savings initially achieved through Metropolitan's Conservation Credits Program and subsequently maintained through plumbing codes.
7. Metropolitan's cumulative conservation investment for fiscal year 2020/21 reflects a revision in total cumulative expenditures due to a reconciliation audit. This does not include outreach and education expenditures.
8. Figures reflect actual and estimated deliveries for all Metropolitan-assisted projects and payments reported for fiscal year 2020/21; cumulative production and investment reflect accounting reconciliation as data become available; annual regional production for recycled water includes an estimated 57,351 acre-feet of treated wastewater discharged to the Santa Ana River base flow that percolates into downstream groundwater basins. Total may not sum due to rounding.
9. Projects accounted for here include some that received funding at the outset through Metropolitan's Local Resources Program. Once the term of the funding agreement expires, the projects continue, but further production is not factored into program totals.
10. Metropolitan initiated its Local Resources Program in 1982 to encourage production of recycled water for municipal purposes. Cumulative production and investment figures are subject to annual accounting reconciliation.
11. Metropolitan initiated its Groundwater Recovery Program in 1991 to encourage treatment and use of degraded groundwater for municipal purposes. Cumulative production and investment figures are subject to annual accounting reconciliation.
12. Construction of the conjunctive use storage programs was completed in 2008. Proposition 13 refers to Chapter 9 of the Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act of 2000. Water extracted since the program inception includes losses.
13. Figure is cumulative since 1984. Prior to 2013, Metropolitan provided replenishment water at a discounted rate to encourage long-term recharge and maintenance of groundwater basins and local reservoirs. Although the discounted replenishment rate was discontinued Jan. 1, 2013, Metropolitan continues to provide water for replenishment purposes at full-service rates.
14. Metropolitan's cumulative conservation investment for fiscal year 2020/21 reflects a revision in total cumulative expenditures due to a reconciliation audit. Cumulative conservation investment does not include outreach and education expenditures.

A rain chain carries water from gutters to rain barrels that distribute water into the garden - some waterwise elements supported by Metropolitan rebates.

Conservation

There is no area in resource management where the success of a program depends more on collaboration than water conservation. Meeting our region's needs requires working together with our member agencies, local and diverse communities, schools, businesses and our elected officials. Conservation is key to water supply reliability. Without conservation, the effects of drought would be more swift and more severe. Less water used translates into more water stored. And for that reason, Metropolitan has a number of initiatives that include financial incentives, as well as educational, advertising and outreach programs. We also support legislation, smart building codes and standards that ensure continued water savings over time. Reaching underserved communities with targeted and accessible conservation programs is also a priority.

Over the past 40 years, Metropolitan has delivered conservation programs designed to encourage consumers to use water-efficient devices and adopt water-conscious behaviors. Metropolitan pursues a six-pronged approach to transform markets – the overarching strategy to meet conservation goals. Metropolitan has been working to drive innovation, evolve markets and influence consumer decision-making using catalysts. These catalysts include direct rebates, outreach and education, new technology support, advocacy for new codes and standards, and development of strategic alliances. Together, these efforts have been able to bring positive lasting change.

It begins with research and development. We test new technologies with promising potential to see if they work and how well they might do in the marketplace. Ongoing testing, evaluation and pilot programs are conducted through public/private collaborations that reduce associated development costs. We always circle back to track the success of new technologies to maintain water savings and gain acceptance by consumers.

Catalysts like incentive programs, education and outreach bring new technologies to the attention of consumers. Rebates incentivize the use of water-efficient technologies and processes. Education and outreach teach consumers about the use and benefits of water-saving devices and programs through workshops and online and in-person training and classes. Targeted advertising, also in several different languages, brings the conservation message to a broader and more diverse community. Impacts on the market are accelerated by these catalysts. Incentives also have the effect of increasing demand and driving down the production cost of products.

Advocacy for new standards and regulations happens when products become more available. This propels a change in either standards or codes that leads to sustained water savings. New standards and codes also encourage research and development of the next generation of technologies, processes, services and design approaches. We have seen this in building codes that require certain efficiency standards for devices such as toilets and showerheads, as well as outdoor irrigation requirements.

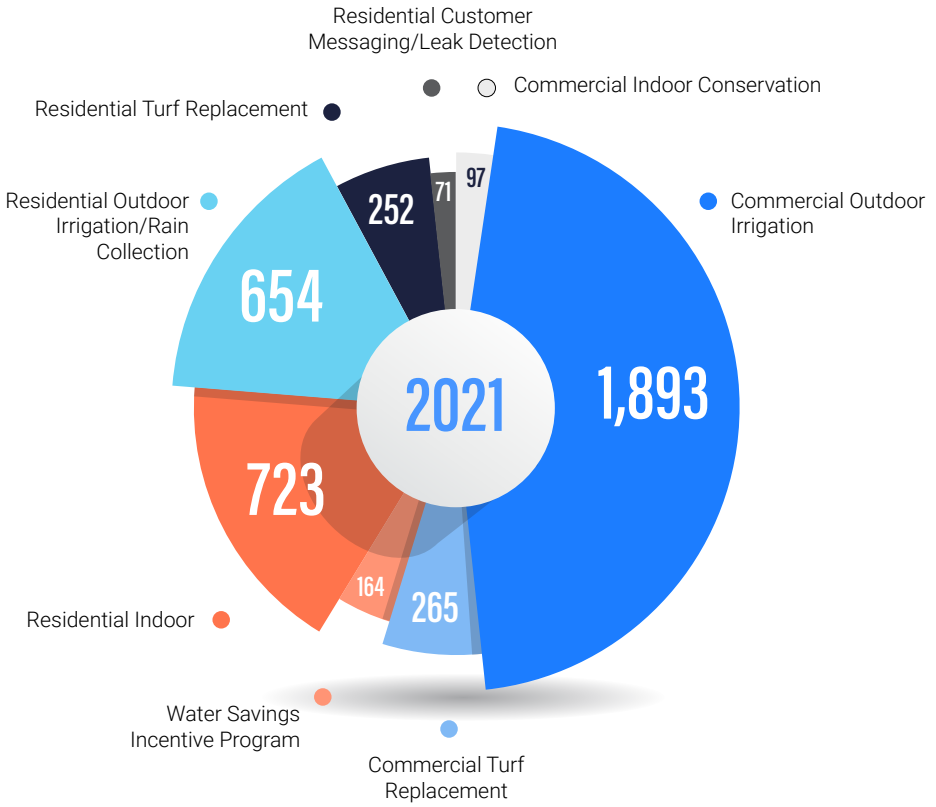
And finally, once catalysts like rebates have their intended effects by changing markets and attitudes, they can be phased out to allow natural market dynamics to take over and sustain the change.

During fiscal year 2020/21, Metropolitan's active conservation efforts saved about 207,000 acre-feet of water. Rebates funded through Metropolitan's conservation program generated about 4,120 acre-feet of new water savings and will continue to produce more savings in years to come.

Since 1990, Metropolitan has invested $840 million in conservation rebates and programs, of which approximately $17 million was spent in fiscal year 2020/21. Metropolitan typically calculates rebates based on $195 per acre-foot of water savings over the life of a device or program. Exceptions include the turf replacement program, rain barrels, cisterns and multi-family housing toilet replacements. These programs are aimed at market transformation and are calculated differently to provide a greater incentive. When available, Metropolitan supplements its conservation programs using state and federal grant funds.

During fiscal year 2020/21, Metropolitan's active conservation efforts saved about 207,000 acre-feet of water.

New Water Savings in Acre-feet
Fiscal Year 2020/21



Bill McDonnell

Team Manager – Water Efficiency

Program purpose: Reduce demands on Metropolitan so a gallon saved today can be used tomorrow.

What makes it meaningful: Helping people and helping Southern California.

Something memorable: Seeing how far we have come in the 25 years I've been here. From a concept I had that we could do more regionally if we worked together, to where we are now is amazing. We now have a regional program for commercial, industrial, residential consumers – it's the backbone of our conservation efforts.

Connection to a reliable, environmentally sustainable future: Having climate-appropriate landscapes, capturing rainwater, and using high-efficiency plumbing products all contribute to an environmentally sustainable SoCal.

Favorite superhero: Aquaman.

Fiscal Year 2020/21 Conservation Program Highlights

1. Metropolitan provided about $17 million in rebates, landscape and irrigation classes, research, and outreach to help consumers reduce water use in their homes and businesses.

2. Metropolitan processed 32,286 applications for a total of $8.4 million in regional rebate funding.

3. Metropolitan created a municipal leak detection and repair program modeled after its successful pilot program with the Municipal Water District of Orange County. Member agencies are reimbursed for surveying leaks and repairing them in their distribution system.

4. To address residential leaks and how much water a consumer uses, Metropolitan launched a program this past year that provides rebates on flow monitoring products. These products attach to the water line and can provide the consumer with information on how much water they are using at a given time and if they are experiencing any household leaks.

Gary Tilkian

Senior Resource Specialist – Water Savings Incentive Program

Program purpose: To increase water conservation by rewarding consumers with out-of-the-box thinking and provide a potential incentive for almost any idea out there that may consistently save water.

What makes it meaningful: How we can help transition creative ideas into real projects.

Something memorable: One of the more interesting projects we've seen installed is a small-scale water recycling plant on the premises of an industrial site to recycle water used in textile dyeing and finish houses and clean it for reuse.

Connection to a reliable, environmentally sustainable future: WSIP embodies two very key goals: reliability and efficiency. Most commercial entities are not going to implement a change if it is not going to be reliable because it affects the company bottom line.

Favorite superhero: Ant-Man – subtle strength intrigues me.

Metropolitan's Residential Conservation Programs

SoCal Water$mart Residential & Member Agency Residential Programs

Metropolitan's regional rebate program is administered through SoCal Water$mart to encourage and support the use of water-efficient products across the Southland. Residential rebates offered in fiscal year 2020/21 included high-efficiency clothes washers, premium high-efficiency toilets, high-efficiency sprinkler nozzles, smart irrigation controllers, rain barrels and cisterns. Metropolitan estimates about 1,740 acre-feet of annual water savings from more than 31,000 residential conservation device rebates funded by Metropolitan in fiscal year 2020/21.

Metropolitan also provides funding to member agencies for locally administered conservation programs. Qualifying residential projects include rain barrel distributions, turf replacement programs, sustainable landscape irrigation programs, residential leak detection, customer water use messaging, as well as residential water surveys. Metropolitan estimates water savings of about 275 acre-feet annually from these programs administered in fiscal year 2020/21.

Regional Incentives

Turf Replacement Program

Metropolitan's Turf Replacement Program provided rebates for the removal of about 4.35 million square-feet of lawn in fiscal year 2020/21, resulting in an estimated annual water savings of about 520 acre-feet. These savings represent an increase of 20 acre-feet over the previous fiscal year.

Premium High-Efficiency Toilets

In fiscal year 2020/21, Metropolitan approved an initiative to continue its enhanced premium high-efficiency toilet rebates for underserved communities. The initiative continues a regional pilot program that started last year to boost rebates from $40 to $250 to replace toilets in multifamily housing built before 1994 with premium high-efficiency models. Metropolitan estimates that the total amount of premium high-efficiency rebates issued for both residential and commercial customers in fiscal year 2020/21 will save about 120 acre-feet of water per year. Premium high-efficiency toilets use no more than 1.1 gallons per flush and about 30 percent less water when compared to older ultra-low-flush toilets.

High-Efficiency Clothes Washers

Metropolitan estimates water savings of about 610 acre-feet annually from clothes washer rebates in fiscal year 2020/21. High-efficiency clothes washers with an integrated water factor of 3.2 or less are eligible to receive rebates. The integrated water factor is the measure of the amount of water used to wash a standard load of laundry. These washers save more than 10,000 gallons per year compared to a conventional top-loading clothes washer.

Smart Irrigation Controllers

Smart irrigation controllers save water by automatically adjusting watering schedules based on weather, soil conditions, plant material, sun exposure, soil moisture and slope. Metropolitan estimates water savings of about 1,130 acre-feet annually from smart controller rebates in fiscal year 2020/21.

Metropolitan's Commercial Conservation Programs

Metropolitan's commercial conservation programs provide financial incentives for water-saving devices and projects, including landscape transformation. Rebates are available for certain commercial food devices, cooling towers and medical and dental equipment. Metropolitan estimates savings of about 2,420 acre-feet annually from commercial conservation programs in fiscal year 2020/21.

SoCal Water$mart and Member Agency Commercial Programs

The majority of commercial conservation device activity came from Metropolitan's SoCal Water$mart rebate program. Metropolitan's member agencies and their agencies also implemented water conservation programs for commercial sectors using Metropolitan incentives. Qualifying commercial projects included turf removal and direct installation of high-efficiency toilets and high-efficiency sprinkler nozzles. Metropolitan estimates water savings of about 1,140 acre-feet from more than 1,120 applications to SoCal Water$mart in fiscal year 2020/21. An additional 1,100 acre-feet of water were saved from member agency incentive programs.

Water Savings Incentive Program

The Water Savings Incentive Program is a regional pay-for-performance initiative. It is open to all commercial, industrial, institutional, agricultural, and large landscape consumers with qualifying projects within Metropolitan's service area. Financial incentives are available for customized water-efficiency projects, including: the installation of commercial or industrial high-efficiency equipment; industrial process improvements; agricultural and landscape water efficiency improvements; and water management services. Incentives are based on the amount of water saved and capped at 50 percent of eligible project costs. In fiscal year 2020/21, Metropolitan estimates savings of about 160 acre-feet.

Research & Development

Innovative Conservation Program

Metropolitan's Innovative Conservation Program provides funding for research that will document water savings and reliability of innovative water savings devices, technologies, and strategies. About $275,000 of funding was provided for the 2020 request for proposals by Metropolitan and Southern California Gas Company.

The focus for the 2020 ICP was innovation in the Commercial, Institutional, and Industrial sector and selected projects span topics such as leak detection, commercial kitchen water use, and irrigation efficiency. Twenty-eight project proposals from diverse groups such as universities, entrepreneurs, municipalities, non-profit organizations and individuals were submitted and evaluated by a selection committee. Six projects were selected and received up to $50,000 each in funding. 2020 ICP projects are ongoing and expected to be completed in summer 2022.

Long-Term Studies

In addition to the Innovative Conservation Program, Metropolitan has pursued multiple research efforts, many of them long-term studies. They include:

- A pilot residential household fixture study to determine the concentration of water-efficient fixtures in homes and the amount of water usage attributed to these fixtures, with an end date target of March 2022
- An ongoing study, in two-year snapshots, of past turf removal program participants to determine how many have maintained their sustainable landscaped yards
- A partnership with the Alliance for Water Efficiency to study:
  - Water affordability
  - Commercial cooling tower water savings potential
  - A conservation savings model update
- Evaluating the water savings potential of leak detection for distribution system processes in tandem with multiple member agencies

Tina Andry

Assistant Resource Specialist II – Innovative Conservation Program

Program purpose: To provide funding for research on water-saving devices, technologies and strategies with the objective to explore savings potential and reliability of innovative approaches to conservation.

What makes it meaningful: 2020 was the 20th year of the Innovative Conservation Program, which is a testament to Metropolitan's ongoing commitment to support innovation.

Something memorable: This is my first year managing the program, but working with recipients from such a diverse set of entities has been really fun; 2020 recipients represent several small businesses, a municipality, a non-profit, and a university.

Connection to a reliable, environmentally sustainable future: There are still many opportunities to refine and improve existing water-saving technologies and strategies, and supporting these projects is one way Metropolitan is working to ensure a more reliable, sustainable water supply.

Favorite superhero: Any individual working to improve the lives of others is a superhero to me!

Students virtually visit the Colorado River Aqueduct, one of many virtual lessons offered by Metropolitan's Education Unit. Photo taken pre-pandemic.

Communications & Outreach

Our state water system is under great stress. Two consecutive years of low rainfall and snowpack, and critically low runoff is impacting California's current and future water supplies. The message is clear -- climate change is here, and we need to conserve, reuse and recycle as much as we can. Metropolitan's conservation and outreach programs maintain a focus on using water wisely always and recognize customers' past efforts. Reengaging Southern California communities in the conversation about conservation is critical. Metropolitan created an umbrella effort that included a strong presence on social media, a website with current drought information and resources, and continuous outreach to educators, elected officials, our member agencies and the news media.

Advertising and Outreach Campaign

In fiscal year 2020/21, Metropolitan continued in-house outreach efforts to promote water use efficiency programs and rebates. Staff took a grassroots approach mid-pandemic and designed an award-winning "We're California Friendly® Plants" social media campaign as a whimsical, creative and engaging way to reach new online audiences. The campaign celebrated water-saving plants that are well adapted to Southern California's semi-arid climate and encouraged their use in the district's popular Turf Replacement Program. From November 2020 to February 2021, the campaign received some of our highest engagement on social media with a total of 1.5 million impressions and 73,000 visits to bewaterwise.com, the district's online water conservation portal.

Staff continued to develop conservation outreach materials in the winter and spring of 2021, including online campaigns to support virtual landscape training classes for residential customers. This broad conservation campaign, which included new iterations of the fall "California Friendly® Plants" assets, reached more than 5 million views on Facebook and Instagram. From April to June 2021, conservation-related social media posts received nearly 10 million impressions with more than 100,000 click-throughs and generated more than 85,000 visitors to bewaterwise.com. Nearly 60 percent of the traffic going to the website came from social media efforts. Staff also designed and promoted a "Y/our Water" campaign to illustrate the connection of our everyday activities to the importance of water. The social media campaign ran on Facebook and Instagram through June 2021.

As statewide drought conditions worsened, staff developed a public-facing drought microsite on the district's main website, mwdh2o.com. The microsite launched May 2021 to host the latest drought-related news coverage, media releases, presentations and outreach materials available to member water agencies, media outlets and the general public. In June 2021, staff placed a series of multilingual print advertisements in community newspapers throughout the Southland to increase drought awareness while encouraging Southern Californians to maintain a conservation ethic. These advertisements reached an estimated total of 2 million residents across the district's six-county service area.

Media

Interacting with the news media is an important avenue for spreading the conservation message. Throughout the fiscal year, Metropolitan officials conducted more than 70 interviews with news reporters from major TV, radio, print and digital media outlets, ethnic media and community publications to discuss a wide range of water-related issues. Topics included the effect of climate change and drought on Colorado River resources, water supply reliability and storage, recycled water, and raising awareness about Metropolitan's conservation programs, including its updated turf replacement program. Reporters have been interested in discussing the impacts of Lake Mead's falling reservoir levels on Lower Colorado River Basin water users. As part of those interviews and other outreach, Metropolitan has highlighted the value of growing collaboration among basin partners in bringing increased sustainability to the river. Metropolitan has specifically cited its partnership with Southern Nevada Water Authority on Metropolitan's Regional Recycled Water Program as an example of the innovative solutions and partnership that will be increasingly required in the future.

Metropolitan's General Manager, Board Chairwoman and other subject matter experts have also authored blogs and op-eds encouraging conservation and the need to think differently to adapt to the challenges ahead, including one blog issued in May 2021 titled, "How the Colorado River Benefits from Conservation." Metropolitan also launched its newly redesigned website, mwdh2o.com, which features interactive maps and visuals of Metropolitan's Colorado River Aqueduct facilities, as well as an enhanced Colorado River page that explains the importance of Colorado River resources to Southern California's water reliability. There is also a homepage link to bewaterwise.com, keeping the conservation portal front and center on the site.

Community Outreach

Metropolitan is an active member in many chambers of commerce and other business organizations and provides regular updates to members on water policy issues and programs. Water use efficiency programs that help reduce demand for potable water are a key focus of these partnerships. In addition, Metropolitan hosts hundreds of community and business leaders on inspection trips of the State Water Project and Colorado River Aqueduct to help them better understand the challenges of providing reliable water to Southern California and how the Colorado River is managed to provide water for urban areas and agriculture. Most of these programs are being shifted to online formats to maintain strong outreach during the COVID-19 pandemic.

Metropolitan's "Water is Life" calendar invites students across Southern California to use art to share messages about conservation. Photo taken pre-pandemic.

Metropolitan has many on-line offerings for residents and professional landscapers to learn more about waterwise gardening and rebate programs.

Education Programs

Metropolitan worked with partner agencies, school districts, county offices of education, non-profits, and parents, as well as formal and informal educators to provide water-focused STEAM (Science, Technology, Engineering, Art and Math) curriculum, grants, and outreach programs. Staff met with Metropolitan member agencies to hold more than 100 events and engaged with nearly 78,000 students, teachers, parents and participants through virtual activities, social media and curriculum materials. Solar Cup™, the nation's largest high school solar boat race, completed its 19th year virtually and hosted 16 teams with more than 300 high school students. Teams completed challenges in various fields including robotics, solar power, computer-aided design software, digital marketing, visual arts and job skills. The program culminated in a virtual competition with vehicles built by participating teams.

The district continued to develop multilingual K-12 water education curriculum aligned with Common Core and Next Generation Science Standards to encourage conservation behaviors through critical thinking and understanding of water issues affecting the Southwest. Staff also worked with the state Department of Water Resources to promote a virtual reality tour of the State Water Project, which received a first-place award in K-12 Educational Programs from the National Association of Government Communicators. An updated education website helped visitors find new resources available to them at a time when online learning opportunities were critical. The "Water is Life" Student Art Exhibit and Calendar showcased more than 5,000 pieces of art created by K-12 students to help promote the value of using water wisely.

Metropolitan helped foster the growth of the Water Energy Education Alliance, an initiative to advance Career Technical Education as part of the California Department of Education's Energy, Environment and Utilities Industry Sector. Staff proactively engaged education partners in the wake of widespread school closures due to COVID-19 through online classes, webinars and virtual reality tours of the Colorado River Aqueduct.

The Regional Recycled Water Program could become the largest recycling program in the nation.

Local Resources

Since 1982, Metropolitan has invested in local projects, which contribute to regional water supply reliability. The Local Resources Program provides financial incentives to encourage local development of recycled water, treatment of degraded groundwater for municipal use and seawater desalination. As of fiscal year 2020/21, Metropolitan has invested $709 million to fund 88 recycled water projects and 28 groundwater recovery projects that have produced about 4.1 million acre-feet. Metropolitan is testing what may become the forerunner to the largest water recycling program in the country with the Regional Recycled Water Advanced Purification Center pilot program. Local resources are climate-resilient and lessen the region's dependence on imported supplies tied to snowpack conditions.

Water Recycling and Groundwater Recovery
In fiscal year 2020/21, Metropolitan provided about $8 million for production of 55,000 acre-feet of recycled water for non-potable and indirect potable uses. Metropolitan financed about $7 million to support projects that produced about 48,000 acre-feet of recovered groundwater for municipal use. Metropolitan's board of directors approved five new projects for participation in the Local Resources Program. Additionally, local agencies through other funding sources produced 403,000 acre-feet of recycled water that included wastewater discharged to the Santa Ana River that percolates into downstream groundwater basins and 65,000 acre-feet of recovered groundwater. Figures 1 and 2 (next page) show total recycled water and groundwater recovery production in Metropolitan's service area, including local agency-funded projects.

On-site Retrofit Program
Metropolitan's board approved the On-site Retrofit Program in 2014, now with an annual budget of $2 million. The program provides financial incentives for the conversion of potable irrigation and industrial systems to recycled water. Metropolitan works continuously with member and retail agencies, as well as organizations like WateReuse, to promote and gather feedback that ultimately reshapes the program. Metropolitan maintains a program website (bewaterwise.com/onsite-retrofit) where up-to-date information can be accessed, including a link to the application, terms and conditions, frequently asked questions and program publications. As of fiscal year 2020/21, the On-site Retrofit Program has provided funding to 436 sites, replacing about 12,667 acre-feet per year of potable water with recycled water.

Kira Alonzo

Team Manager – Supply Acquisition, with oversight of Recycling and Groundwater Recovery Programs

Program purpose: To develop local supplies to help reduce demands for imported water supplies and increase water supply reliability for the region.

What makes it meaningful: Collaborating with our member agencies and supporting the development of these projects; every project built makes us more reliable into the future.

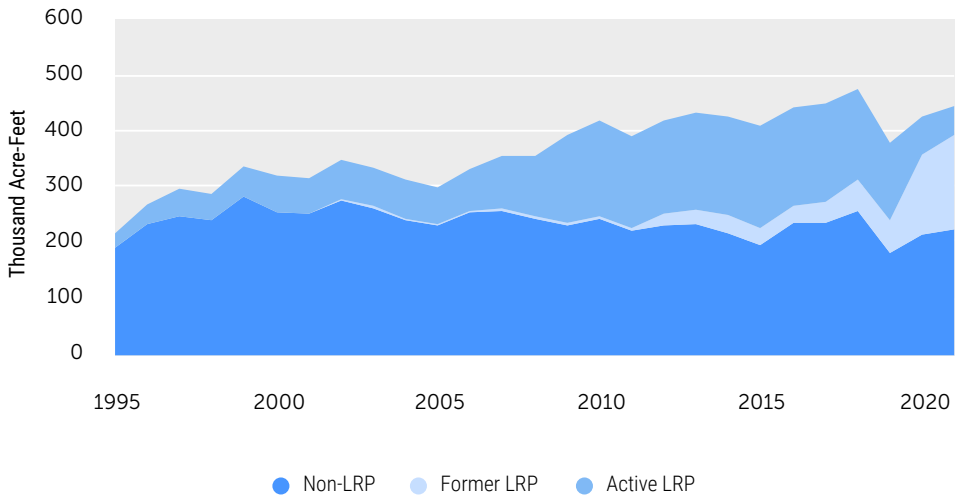
Something memorable: The great feedback and support we receive from the member agencies and Metropolitan's board every time we make a refinement to the program or bring a new project forward for approval.

Connection to a reliable, environmentally sustainable future: Developing projects locally benefits the entire region regardless of where they are built. Recycled water and groundwater recovery projects help preserve imported water supplies for the future.

Favorite superhero: Ruth Bader Ginsberg.

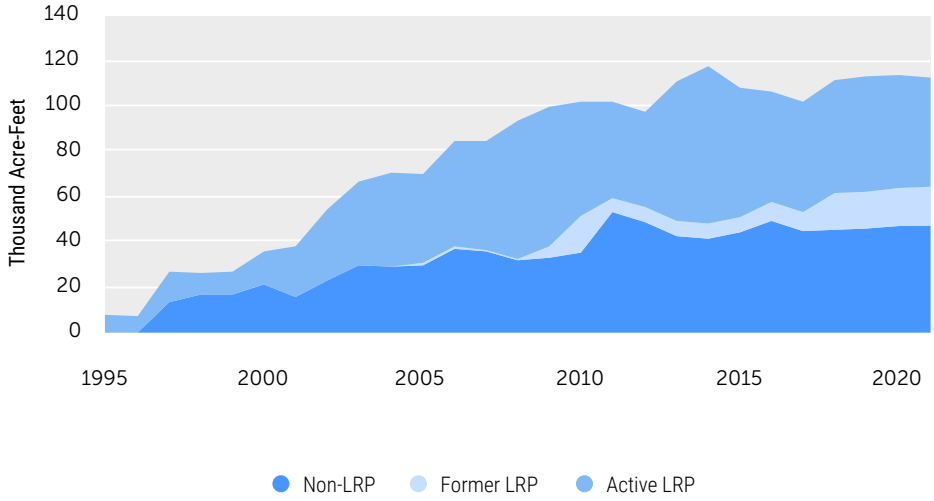
Recycled Water

Figure 1



Groundwater Recovery

Figure 2



Groundwater Management

Metropolitan partners with local agencies to store imported surface water in groundwater basins for use in times of shortage under conjunctive-use agreements. Metropolitan currently has nine storage projects with nearly 212,000 acre-feet of storage capacity. This allows Metropolitan to store up to 53,000 acre-feet per year and withdraw up to 71,000 acre-feet annually during shortage years. In fiscal year 2020/21, Metropolitan extracted about 23,000 acre-feet of previously stored water to support the ongoing drought effort.

Under the Cyclic Program, Metropolitan can capture surplus imported water supplies that cannot be managed through existing storage facilities or other programs. Metropolitan delivers water to member agencies and allows them to pay for these deliveries over a period up to five years. Metropolitan is managing up to 525,000 acre-feet through existing and new agreements. Previously, Cyclic Program agreements did not include a mechanism to offset the higher cost of extraordinary actions that agencies might take to capture increased volumes of imported water in their cyclic accounts. In April 2019, Metropolitan's board authorized the Cost-Offset Program, which provides a credit of up to $225 per acre-foot to member agencies to help offset costs, increased annually by inflation.

The retrofit of a cooling tower at a production studio in Burbank converted 13 AFY of potable water to recycled water.

Jessica Arm

Associate Resource Specialist – On-Site Retrofit Program

Program purpose: To provide financial incentives directly to public or private properties for costs associated with converting a potable water system. The program goal is to offset demand on Metropolitan's potable water supplies.

What makes it meaningful: It is rewarding to see applications come in from people who I have previously communicated with, and it is even more rewarding when I get to approve their incentive check.

Something memorable: Several member agencies have found creative solutions for leveraging our incentives with other sources of funding, and it is memorable to hear stories from agencies on how they employed these solutions to retrofit otherwise hard-to-reach customers.

Connection to a reliable, environmentally sustainable future: The program helps boost our local supplies, which makes our service area more reliable and sustainable as we continue to experience the effects of climate change.

Favorite superhero: Captain Planet.

Matt Hacker

Senior Resource Specialist –
Regional Recycled Water Program

Program purpose: To develop a new drought-resilient local supply for Southern California.

What makes it meaningful: This is the most challenging project I've ever worked on in my career, and the progress we have made over the past 12 years on this project is inspiring! This project began with a small team and has grown to a team of about 50 people from throughout Metropolitan. What amazes me is how well the team, with members from different backgrounds, works together seamlessly.

Something memorable: I think the most exciting thing for me is how much buzz there is for this program -- not only have we developed partnerships with stakeholders in Southern California, but we have also developed partnerships with other states.

Connection to a reliable, environmentally sustainable future: The RRWP will produce purified water that can help replenish Southern California's groundwater basins and free up imported water for other uses.

Favorite superhero: Spider-Man. *With great power there must also come great responsibility.*

Regional Recycled Water Program Timeline

2009 – Initial technical studies begin with Sanitation Districts

2011 – Pilot study on treatment feasibility begins with Sanitation Districts

2016 – Program feasibility study completed

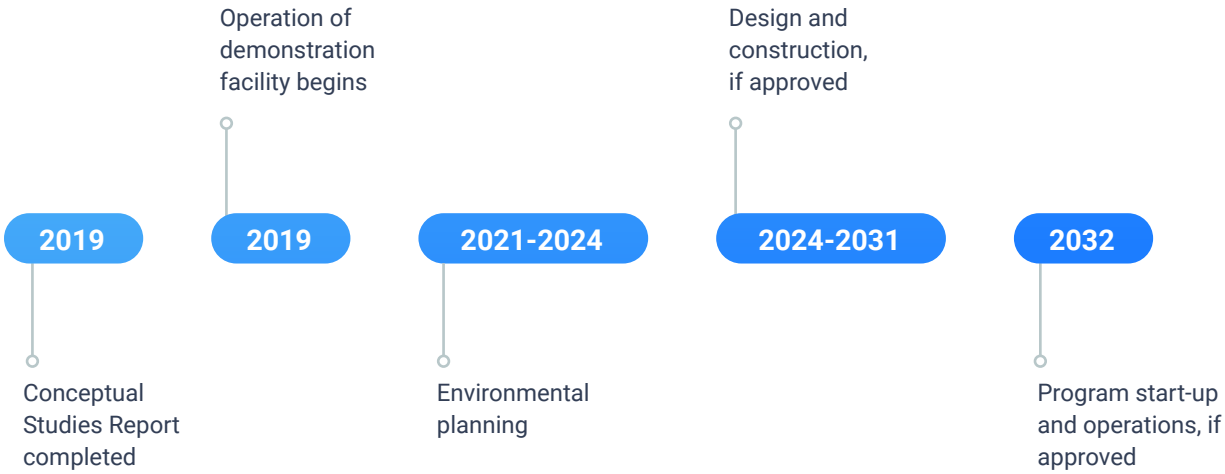
2017 – Construction of demonstration facility begins

Regional Recycled Water Program

For the first time in its history, Metropolitan is pursuing the development of its own in-region water supply. The Regional Recycled Water Program is planned to produce and deliver up to 150 million gallons per day, or approximately 168,000 acre-feet per year of purified water. This is enough water for 500,000 homes. The program is a partnership between Metropolitan and the Los Angeles County Sanitation Districts. The two agencies have been working together on this effort since 2009.

As a part of the full-scale program, a new advanced water treatment facility would be constructed at the Sanitation Districts' Joint Water Pollution Control Plant in Carson. A new conveyance system, over 60 miles long, would deliver water to groundwater basins within Metropolitan's service area. The purified water would replace imported water currently used to replenish the basins, saving imported water for other purposes. Initially, purified water from the program would be used for indirect potable reuse, and, as regulations are developed, purified water from the program would be delivered for direct potable reuse at two Metropolitan water treatment plants. The program would reuse the largest untapped source of purified water in the region and could become one of the largest programs of its kind in the world.

In fall 2019, Metropolitan began operation of the Regional Recycled Water Advanced Purification Center, a 500,000 gallon-per-day demonstration facility. The facility is used by Metropolitan and the Sanitation Districts to test purification processes for potable reuse and features an innovative process with membrane bioreactors followed by reverse osmosis and ultraviolet light/advanced oxidation. If approved by regulators, the process may be used throughout California and could advance water reuse in the state. The demonstration facility will also provide information to optimize operations and identify costs and other data needed for a future full-scale facility and program. In addition, the demonstration facility is used to showcase the program to the public.



In 2020, member agency partners and groundwater basin managers expressed their support for the program through executed letters of intent. Metropolitan has executed letters of intent with the Los Angeles Department of Water and Power, the city of Torrance, the city of Long Beach, Central Basin Municipal Water District, West Basin Municipal Water District, Upper San Gabriel Valley Municipal Water District, and Three Valleys Municipal Water District, as well as the Water Replenishment District and the Main San Gabriel Basin Watermaster. In addition, agencies such as Southern Nevada Water Authority and the Central Arizona Water Conservation District have expressed interest and executed letters of intent. Metropolitan is collaborating with them to discuss potential transfers or exchanges of Colorado River supplies in return for investment in the program. Through unique partnerships, the program is enabling diverse groups of agencies to work together to solve the Southwest's water challenges. In December 2020, Metropolitan and Southern Nevada Water Authority executed a funding agreement for the environmental planning phase of the program.

Recently, Metropolitan's board of directors approved moving forward with the environmental planning phase of the program, a significant milestone. This was a major policy decision for Metropolitan. For nearly four decades, Metropolitan has encouraged development of local water supplies through the Local Resources Program that provides funding to member agencies. The Regional Recycled Water Program would be a new approach with Metropolitan directly funding the development of a new local water supply with regional benefits. Metropolitan's board will continue to consider funding, partnerships, and institutional and policy considerations related to the program.

Future Supply Actions

For the first time in its history, Metropolitan is pursuing the development of its own in-region water supply.

Warren Teitz

Team Manager – Resource Development – Future Supply Action Funding Program

Program purpose: To fund studies addressing technical, regulatory and institutional barriers to local supply development related to groundwater, stormwater, recycling and desalination supplies.

What makes it meaningful: The opportunity to participate in applied research and to develop innovative approaches for bringing new supplies online, and the outstanding FSA team who make this program possible.

Something memorable: Because of COVID restrictions, we pivoted to webinars to share results of the FSA studies, and they have been outstanding and, as moderator, allowed me to see firsthand the study results and how they help the region.

Connection to a reliable, environmentally sustainable future: The FSA program builds resilience to climate change by enabling the development of new water resources and will help the region manage the next drought and the droughts to come.

Favorite superhero: Underdog: *There is no need to fear – Underdog is here!*

Metropolitan's Investments in Future Supply Actions

	2013 FSA Member Agency Studies		2018 FSA Member Agency Studies		2018 WRF Potable Reuse Studies	
	Studies	Funding	Studies	Funding	Studies	Funding
Groundwater	4	$900,000	3	$661,000		
Recycled Water	5	$810,000	5	$1,265,000	7	$975,000
Stormwater	2	$814,000	4	$865,000		
Seawater Desalination	2	$325,000	2	$365,000		
Total Funding	13	$2,939,000	14	$3,156,000	7	$975,000

Metropolitan supports the development of local supplies through its Future Supply Actions Funding Program. The 2010 Integrated Water Resources Plan established this program to promote low-cost, low-risk investments for addressing technological, regulatory, and institutional barriers to new supplies. These actions will enable the region to accelerate new local supplies in the future when needed. The FSA Program is one of Metropolitan's primary vehicles for promoting innovative and sustainable approaches to local supply development. Under the program, Metropolitan funds member agency studies addressing challenges for groundwater, recycled water, stormwater and seawater desalination supplies.

Program goals include:

- Reducing barriers to future resource production
- Providing results that are unique, yet transferable to other areas in the region
- Advancing the field of knowledge
- Targeting critical paths to water resource implementation

Since the initial 2013 round of funding and the second in 2018, pilot tests, demonstration studies, and white papers have been produced. The 14 studies approved in 2018 are currently underway, and most are expected to be completed in 2021.

In 2018, Metropolitan also co-funded six potable reuse projects and one agricultural reuse study with the Water Research Foundation under the FSA Program. Metropolitan's nearly $1 million in co-funding supports WRF's $8 million Advancing Potable Reuse Initiative and matches $3.5 million in State Water Resources Control Board grant funding. The table above summarizes Metropolitan's FSA Program investments.

Stormwater Pilot Programs

Metropolitan authorized stormwater pilot programs looking at direct use and recharge in 2019. These pilot programs encourage the development, monitoring, and study of new and existing stormwater projects by providing financial incentives for their construction/retrofit and monitoring/reporting costs. They help evaluate the potential water supply benefits delivered by stormwater capture projects and provide a basis for potential future funding approaches. Metropolitan's board authorized a total of $12.5 million for the stormwater pilot programs ($5 million for the District Use Pilot and $7.5 million for the Recharge Pilot). In fiscal year 2020/21, Metropolitan's board approved funding $824,800 for two direct use projects, and $2 million for three recharge projects.

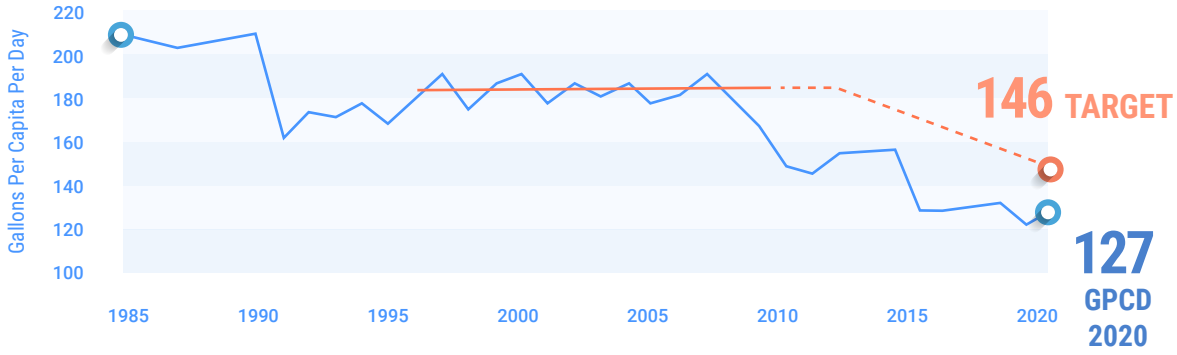
Water-Use Efficiency Strategy

Metropolitan and the Natural Resources Defense Council co-sponsored the Water Conservation Act of 2009 (SBX7-7), which targets a 20 percent reduction statewide in urban per capita potable water use by the year 2020 (commonly known as 20x2020). Per capita water use is one indicator of progress in advancing water-use efficiency. Metropolitan's baseline is 182 gallons per capita per day (GPCD), and the 2020 reduction target was 146 GPCD. A strong increase in regional conservation in response to the 2015 drought emergency declaration led to a substantial decrease in GPCD. While the water use efficiency mandates were mostly lifted in 2016, the progress in regional conservation did not wane. From 2015 to 2020, the region's potable GPCD averaged about 127 – exceeding the goal of a 20 percent reduction by 2020.

In 2018, the state Legislature enacted two policy bills, Senate Bill 606 and Assembly Bill 1668, to establish a new foundation for long-term improvements in water conservation and drought planning, and to adapt to longer and more intense droughts in California due to climate change. These two bills amend existing legislation to achieve those goals by providing expanded authority to state agencies and new requirements for local water providers. Metropolitan is participating in the state Department of Water Resources' collaborative process to support the implementation of urban water use efficiency standards and establish reporting requirements.

Exceeding Our 20 Percent Target Reduction for 2020

Declining Gallons per Capita per Day Water Use



An immature Cooper's Hawk,
photographed by William Wagner.

Watershed Initiatives

Our responsibility is not just to ensure water supply reliability and quality, but to do so in an environmentally responsible and thoughtful way. Metropolitan focuses on a range of issues that include watershed health, stormwater collection, salinity management, and habitat restoration and preservation. Taking care of the environment and water quality for our imported source waters benefits our water supply reliability. This is especially difficult in drought conditions that have consequences for ecosystems and human communities alike.

Local Watersheds
Metropolitan's commitment to environmental stewardship is reflected in its many activities. Metropolitan actively participates on planning boards and organizations focused on efforts that include the protection of water quality at the source.

Integrated Regional Water Management
Metropolitan participates in a multi-jurisdictional water planning effort, serving on the Greater Los Angeles County Region Leadership Committee of the Integrated Regional Water Management Program as its surface water management area representative.

Southern California Water Coalition
Metropolitan remains actively involved in the Southern California Water Coalition Stormwater Task Force. In 2021, the task force supported the development of a white paper led by Las Virgenes Municipal Water District. The paper evaluated the potential for dry weather stormwater diversions to provide water supply benefits for wastewater treatment plants. This project was funded by multiple partners, including Metropolitan.

In 2020, the Southern California Water Coalition created its recycled water taskforce to provide a forum for the discussion of recycled water issues in the region. In addition to monthly meetings, Metropolitan staff participated in a workgroup to create a series of educational videos on water and recycling for K-12 children in the city of Los Angeles.

Alex Marks

Environmental Specialist – Multiple Species Habitat Reserve Program

Program purpose: To mitigate impacts to sensitive animal species associated with the construction and/or operation of Metropolitan's Lake Mathews and Diamond Valley Lake reservoirs to preserve natural communities, which provide habitat for the species.

What makes it meaningful: Conserving lands to benefit the multitude of species that depend on the protected habitats and provide an opportunity for outdoor recreation and environmental education to the residents of Southern California.

Something memorable: Knowing that I am contributing to a project that will continue to benefit people in Metropolitan's service area and the planet for generations to come.

Connection to a reliable, environmentally sustainable future: Although established to mitigate impacts associated with our facilities, the Reserves also yield critical watershed protection, and climate change-related value that contribute to a more reliable, environmentally sustainable Southern California.

Favorite superhero: Kelly Slater.

Council for Watershed Health

Metropolitan has partnered with the Council for Watershed Health on research studies and educational outreach efforts focused on water supply reliability, quality and efficiency. The council currently has four programs: Living Laboratory, Sustainable Landscape Resources, Healthy Streams, and Watershed Coordination and Planning. Metropolitan serves on the council's board of directors and collaborates on projects to advance the health and sustainability of the region's watersheds and natural resources.

In January 2018, Metropolitan entered into an agreement with the council on a study to better understand and support school water conservation efforts in underserved communities. Under Phase 1 of this agreement, which concluded June 20, 2019, the council performed three tasks:

1. A survey to assess which schools in Metropolitan's service area either have taken or are planning to take advantage of Metropolitan's water efficiency incentives and rebates

2. A special analysis of school district property lines within underserved communities in Metropolitan's service area

3. A barrier analysis to identify impediments hindering schools and school districts from developing and implementing water efficiency projects, and highlight successful school greening plans, programs, and projects

Phase 2 of the agreement was completed Dec. 30, 2020 and involved outreach and engagement to schools within Metropolitan's service area. Because this outreach had to transition to remote correspondence and interviews as dictated by the pandemic, additional time was allowed to generate greater participation. council staff were able to interview more school district facilities personnel to further assess "greening" and sustainability project opportunities, as well as provide guidance toward project implementation. Project deliverables for Phase 2 included:

1. Coordinating connections among school greening stakeholders in the LA Basin to cultivate relationships and disseminate resources and educational material

2. Providing ongoing technical assistance to "hot" schools to further define campus opportunities for water conservation and greening needs, and connecting them to partners and resources

3. Development of case studies using Geographic Story Map formats to provide a Greening Practices Summary/Guide for Schools in the LA Basin. The case studies can be viewed here:

Metropolitan and the council jointly presented information from both phases of work at the California Water Efficiency Partnership annual Peer-to-Peer Event which was held virtually in 2021. The information was well received by agencies throughout California.

Recent local, statewide, and even global events have underscored the need for schools to more actively pursue sustainability projects that address issues such as expanding use of outdoor spaces as classrooms and specialized learning resources, adding to watershed resources with stormwater capture and on-site reuse, mitigation for runoff and related water quality permits.

The council's work has contributed to Metropolitan's understanding of school resources, limitations and opportunities, and will continue to assist Metropolitan in promoting water efficiency incentive programs in these underserved areas. Though this work with the council has completed, Metropolitan is exploring ways to leverage the work done and extend collaboration with the council into the future.

Southern California Salinity Coalition

Formed in 2002, the Southern California Salinity Coalition promotes research and outreach activities to address the need to control or reduce salinity in drinking water, wastewater, groundwater, and recycled water. In addition to water agencies, local wastewater, groundwater, and watershed management agencies also participate in the SCSC. Metropolitan is a founding member and serves on its board. SCSC accomplishments in fiscal year 2020/21 include:

- Implementing a Water Research Foundation study to assess the benefits of blending low-salinity seawater desalination supplies into existing distribution systems in San Diego County
- Co-sponsoring a three-day desalination research needs workshop to guide future investments in desalination and salinity management research
- Funding new SCSC member studies including an evaluation of an innovative desalination/brine treatment technology and a feasibility study of a potential brine-line in the Los Angeles basin
- Granting a graduate fellowship to a UCLA student developing novel desalination membranes capable of targeting specific contaminants
- Presenting on salinity management to Southern California stakeholders
- Supporting salinity management on the Colorado River through letters of support for urging USBR to address the increased salinity resulting from the shutdown of the Paradox Valley Unit

Multi-Species Habitat Protection and Preservation

Four multi-species reserves encompassing about 30,000 acres are the cornerstone of Metropolitan's investments in environmental conservation and stewardship. These reserves provide mitigation for impacts from construction of Metropolitan infrastructure projects, watershed protection around reservoirs and protection of habitat for native species. The reserves also provide opportunities for education, research, and trails for bicycling, hiking and horseback riding. A snapshot of the four reserves follows:

Southwestern Riverside County Multi-Species Reserve

The reserve consists of nearly 14,000 acres surrounding Diamond Valley Lake and Lake Skinner and includes the Dr. Roy E. Shipley Reserve located between the reservoirs. The reserve is home to at least eight types of natural habitat and many sensitive bird, animal and plant species.

Metropolitan partners with the California Department of Fish and Wildlife, Riverside County Habitat Conservation Agency, Riverside County Regional Park and Open-Space District, and United States Fish and Wildlife Service to cooperatively manage the reserve. Provisions to ensure the protection of the Diamond Valley Lake and Lake Skinner watersheds are incorporated into management of the reserve, including the appropriate siting of public access points and vegetation management tools.

Dee Bradshaw

Program Manager – Bay Delta Initiatives – Oversight of Lower Colorado River Multi-Species Conservation Program

Program purpose: The Lower Colorado River Multi-Species Conservation Program was created for the conservation of endangered and threatened species and their habitats.

What makes it meaningful: It is truly a collaborative effort among the Lower Basin States of Arizona, California, and Nevada, several federal agencies, and Native American tribes.

Something memorable: Being part of the development of the Dennis Underwood Conservation Area – former farmland owned by Metropolitan set aside to be transformed into a natural habitat of cottonwood, willow and honey mesquite trees – is expected to attract numerous species. This is the most memorable experience since my start on the program in 1995.

Connection to a reliable, environmentally sustainable future: The LCR MSCP will create over 8,100 acres of habitat and stock 1.2 million native fish to augment existing populations, and also allow key activities on the Lower Colorado River that provide water and power to millions of people.

Favorite superhero: Squirrel Girl.

Lynda Smith

Principal Resource Specialist – Delta Watershed Program

Program purpose: To support ecosystem investments that will improve habitat conditions for native fish species and other aquatic wildlife in the Delta watershed by working with other stakeholders to conduct studies, pilot projects and restoration activities.

What makes it meaningful: Developing collaborations with other agencies and stakeholders to implement projects.

Something memorable: The Battle Creek Salmon and Steelhead Restoration Project stands out to me because Metropolitan invested in the project many years ago, and the restoration efforts to date have made it possible for U.S. Fish and Wildlife Service to begin the process of reintroducing winter run Chinook salmon to Battle Creek, which was a significant milestone.

Connection to a reliable, environmentally sustainable future: Protecting the Delta ecosystem and improving habitat conditions for listed species will support State Water Project water supply reliability.

Favorite superhero: Dr. Fauci.

Upper Salt Creek Wetland Preserve
A 40-acre parcel of land purchased as mitigation for the Eastside Pipeline, the Upper Salt Creek Wetland Preserve provides protection for unique vernal pool habitat and rare plants. The preserve is protected in perpetuity from future development, and public access is not provided.

Santa Rosa Plateau Ecological Reserve
The nearly 10,000-acre Santa Rosa Plateau Ecological Reserve is home to several endangered, threatened or rare animals and plants, including a species of fairy shrimp that exists nowhere else on earth. The reserve, established as partial mitigation for construction of Diamond Valley Lake, protects some of the most unique chaparral, grassland, oak and vernal pool habitats in California.

Lake Mathews Multiple Species Reserve
The 5,100-acre reserve surrounding Lake Mathews is managed for native habitat and sensitive plant and animal species, including the endangered Stephens' kangaroo rat and coastal California gnatcatcher. Metropolitan partners with the California Department of Fish and Wildlife, Riverside County Habitat Conservation Agency, and United States Fish and Wildlife Service to cooperatively manage the reserve. Habitat management tools and strategies on the reserve, such as grazing and prescribed burns, are critically evaluated for their potential effects to water quality in Lake Mathews. The lake itself is an important bird resting and feeding site, especially in winter, when ducks, double-crested cormorants, grebes and eagles visit.

Colorado River

The Lower Colorado River Multi-Species Conservation Program
This program is a comprehensive restoration effort along the Colorado River through the states of Arizona, Nevada and California. The plan targets the restoration of natural habitat communities once prevalent along the river corridor—riparian forests, marshes and backwaters. The benefits of restoring natural communities go beyond providing habitat for native aquatic and terrestrial species.Through Metropolitan's support as the largest non-federal contributor, along with its federal and state partners, the program continued to make great advances in the restoration of native habitats and natural processes along the lower Colorado River from Lake Mead to the southern international boundary with Mexico. As of fiscal year 2020/21, about 6,500 acres of habitat have been created or restored.

Colorado River Basin Salinity Control Forum
The Colorado River Basin Salinity Control Forum is an organization of the seven Colorado River Basin states of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming. The forum coordinates salinity control efforts among the states; collaborates with federal agencies on the implementation of the Colorado River Basin Salinity Control Program; and works with Congress on the authorization and funding of the program. The forum funds efforts to reduce salt loading to the Colorado River and provides information on salinity control.

Metropolitan holds the forum's board chair position and participates in technical workgroup activities. To date, the forum's salinity control measures have removed about 1.22 million tons of salt from the Colorado River annually. This translates to a salinity reduction of approximately 100 milligrams per liter from the Colorado River's lower basin and Metropolitan's Colorado River Aqueduct supplies.

In fiscal year 2020/21, the forum participated in the development of a Final Environmental Impact Statement for the replacement of the Paradox Valley Unit injection well, which is operated by the U.S. Bureau of Reclamation and is the single largest salinity control project on the Colorado River. Reclamation released the FEIS in late fall 2020 and identified "no action" as the preferred alternative among those considered. However, given the critical role of the PVU in controlling salinity in the Colorado River basin, Reclamation plans to consider additional alternatives beyond those considered in the FEIS, including a potential public-private partnership to implement salt evaporation ponds in the Paradox Valley.

Although the Paradox Valley Unit did not operate for the majority of fiscal year 2020/21 due to a seismic event that halted the injection well's operations in March 2019, Reclamation is currently conducting seismic hazard, seismic risk, and well infrastructure analyses with an eye to restarting the existing well in the future, so that brine injection can continue with an acceptable risk of seismic activity until a replacement alternative is implemented. Reclamation expects to complete these analyses by summer 2023, though the well may begin operating at reduced capacity before then.

Additionally, in fiscal year 2020/21, the forum completed the 2020 Review of Water Quality Standards for Salinity in the Colorado River System. The document is required by the U.S. Environmental Protection Agency every three years to ensure that the salinity standards continue to protect beneficial uses of the Colorado River.

Multi-State Salinity Coalition

The Multi-State Salinity Coalition is a consortium of water agencies from across the country promoting information exchange on salinity management and desalination issues. As a founding member, Metropolitan serves on the MSSC's Board of Directors. MSSC promotes stakeholder collaboration through an annual summit covering a range of topics including salinity and concentrate and management, watershed sustainability, international projects, revenue stability, potable reuse and innovative technologies. MSSC also hosts meetings throughout the year for members highlighting salinity management case studies. Metropolitan typically sponsors and helps plan annual MSSC conferences. Due to the COVID-19 pandemic, MSSC did not hold its annual conference or case study meetings in 2021. MSSC also awards scholarships for students working on topics related to salinity management issues.

Sacramento-San Joaquin Delta

Municipal Water Quality Investigations Program

Metropolitan continues to support and participate in DWR's Municipal Water Quality Investigations program, which implements water quality monitoring and modeling studies in the Delta and the State Water Project facilities. In fiscal year 2020/21, this program conducted routine water quality monitoring for drinking water quality constituents throughout the Delta, operated five real-time water quality monitoring stations, completed seasonal water quality forecasts, and continued a monitoring study to evaluate the degradation of an herbicide used to treat aquatic weeds in Clifton Court Forebay. The program also continued sampling for constituents of emerging concern along the Delta Mendota Canal, due to concerns with treated wastewater input flows. Work also continued on testing on-line sensors for chlorophyll-a and phycocyanin to see if they can provide an early warning for harmful algal blooms and toxin management. A retrospective manuscript on the 30-year program was submitted to the San Francisco Estuary and Watershed Science journal for publication, and work has started on the 2021 State Water Project Watershed Sanitary Survey.

Delta Water Quality Studies

Metropolitan continues to work with the State Water Contractors and other stakeholders to support studies and management actions that address the impact of nutrients, contaminants and other water quality stressors impacting native species in the Delta watershed. Metropolitan funded studies investigating toxic contaminant effects on Delta smelt and juvenile salmon. Metropolitan also continued participating in the Delta Regional Monitoring Program. In fiscal year 2020/21, the Delta RMP conducted water quality monitoring studies for pesticides and aquatic toxicity, nutrients, mercury and contaminants of emerging concern.

California EcoRestore Habitat Restoration

Metropolitan participates in a Yolo Bypass working group and is also a cooperating agency for the Yolo Bypass Salmonid Habitat Restoration and Fish Passage Project, participating on the project's Fisheries and Engineering Technical Team. The project is a comprehensive federal and state planning process to address Biological Opinion requirements for enhanced access to salmonid rearing habitat and increased passage for adult salmonids and sturgeon. The schedule for various milestones includes site preparation in advance of construction in September 2021; completion of final design to commence in May 2022; and completion of construction by December 2022, as required by the Biological Opinion.

Metropolitan continued working with the State Water Contractors to fund and monitor the effectiveness of the Tule Red Tidal Restoration Project. In June 2020, monitoring crews reported finding dozens of the state-listed juvenile longfin smelt inside and outside the wetland restoration site, which is a promising start for the project.

The Tule Red Tidal Restoration Project returns tidal water to more than 400 acres of habitat. Photo courtesy state Department of Water Resources.

Butte Creek Bypass Project

In fiscal year 2020/21, Metropolitan staff continued to meet with the Centerville Schoolhouse Workgroup, a diverse group of stakeholders committed to ensuring the future of Butte Creek's population of spring-run Chinook salmon. The Workgroup first met in October 2017 following the decision by PG&E to withdraw its license application for the DeSabla - Centerville Hydroelectric Project. The group is focused on identifying the needs of spring-run Chinook salmon in this system and finding creative solutions to ensure those needs are met. This includes discussions on a wide variety of topics, such as improving access to cold water, implementing habitat restoration, and evaluating options to improve the long-term viability of the hydroelectric Project. The workgroup is waiting for PG&E to submit a license transfer application with FERC and will consider providing comments that flag the importance of this project to supporting spring-run Chinook salmon in the Central Valley.

Butte Sink and Sutter Bypass Project

Metropolitan is a funding partner on the Butte Sink and Sutter Bypass Project. During fiscal year 2020/21, Metropolitan participated in the collaborative Sutter Bypass Workgroup process. Activities related to this effort included coordination of study plans and discussion of ongoing fish, zooplankton, and hydrology studies. These studies help stakeholders gain a better understanding of how fish benefit from the Sutter Bypass and Butte Sink habitats and inform what restoration actions are needed to improve salmon use and survival. Preliminary results suggest that fish using Butte Sink and Sutter Bypass habitats generally have higher growth rates than fish in the Sacramento and Feather Rivers.

Delta Islands

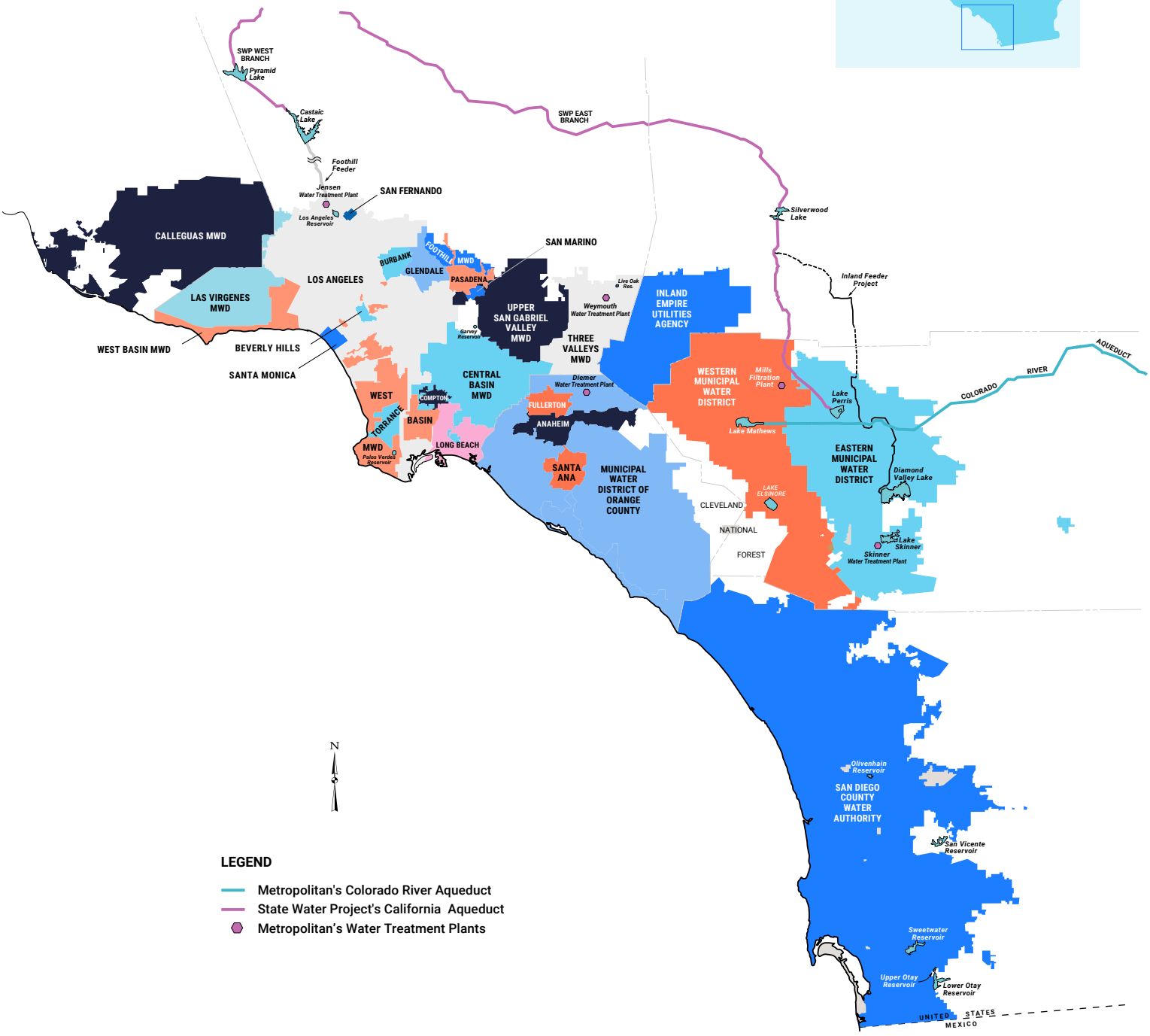
Metropolitan's acquisition of four islands in the Sacramento-San Joaquin Delta allows us to help secure and guard the Delta's future State Water Project supplies. We are using the strategically located islands – Webb Tract, a large portion of Holland Tract, Bouldin Island and Bacon Island – to conduct research and identify potential projects that support water system reliability, restore habitat, and promote sustainable agricultural practices. We're also studying climate change risks, managing peat soils to reduce carbon emissions, and monitoring and strengthening levees to improve and protect water quality and supply reliability.

PUBLIC HEARING NOTICE

Every year, Metropolitan reports its accomplishments in water conservation, recycling and groundwater recharge to the state Legislature. To coincide with the report preparation, the MWD Act requires Metropolitan to "hold an annual public hearing... during which the district shall review its urban water management plan... for adequacy in achieving an increased emphasis on cost-effective conservation, recycling, and groundwater recharge." The MWD Act also provides that Metropolitan "shall consider factors of availability, water quality, regional self-sufficiency, benefits for species and environment, the totality of life-cycle costs, including avoided costs, and short- and long-term employment and economic benefits."

While the Urban Water Management Plan is prepared and updated every five years in accordance with state requirements (Metropolitan's 2020 UWMP was adopted in May 2021), Metropolitan hosts an annual December hearing to share progress on fiscal year plan objectives and to receive public comments. Metropolitan held a public hearing on December 13, 2021 to receive public and stakeholder input. Comments received at the hearing are on file at Metropolitan and are available upon request.

Metropolitan's Member Agencies



LEGEND

- Metropolitan's Colorado River Aqueduct
- State Water Project's California Aqueduct
- Metropolitan's Water Treatment Plants

City of Anaheim

City of Beverly Hills

City of Burbank

City of Compton

City of Fullerton

City of Glendale

City of Long Beach

City of Los Angeles

City of Pasadena

City of San Fernando

City of San Marino

City of Santa Ana

City of Santa Monica

City of Torrance

Calleguas Municipal Water District

Central Basin Municipal Water District

Eastern Municipal Water District

Foothill Municipal Water District

Inland Empire Utilities Agency

Las Virgenes Municipal Water District

Municipal Water District of Orange County

San Diego County Water Authority

Three Valleys Municipal Water District

Upper San Gabriel Valley Municipal Water District

West Basin Municipal Water District

Western Municipal Water District of Riverside County

Metropolitan is a voluntary cooperative of 26 member agencies with a 38-member board of directors. Metropolitan board and committee meetings are open to the public and broadcast live through mwdh2o.com.

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