



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Date: November 23, 2020
To: Board of Directors
From: Jeff Kightlinger, General Manager
Subject: Transmittal of Draft 2021 Annual Progress Report to the California State Legislature on Achievements in Conservation, Recycling and Groundwater Recharge

Attached for your review is the draft Metropolitan report, *Annual Progress Report to the California State Legislature on Achievements in Conservation, Recycling and Groundwater Recharge*. On or before February 1st of each year, Metropolitan submits an annual report to the California State Legislature on our progress in achieving the goals of increased emphasis on cost-effective conservation, recycling, and groundwater recharge. This draft report presents these achievements during fiscal year 2019/20.

In conjunction with the report, Metropolitan will hold a public hearing at its regularly scheduled Water Planning and Stewardship Committee Meeting on December 7, 2020 to review our region's achievements. Metropolitan has invited knowledgeable persons from the fields of water conservation and sustainability to comment at the hearing. The public hearing will commence with a staff report reviewing the achievements. Next, invited experts will be requested to make comments on the report. Thereafter, the public will be invited to comment.

A copy of the final report will be distributed prior to the February Board and Committee meetings. Metropolitan will be submitting the final report to the California State Legislature by February 1, 2021.

A handwritten signature in black ink, appearing to read "Jeff Kightlinger".

Jeffrey Kightlinger

Attachment

cc: Member Agencies

WE
CONSERVE
LEARN
INNOVATE
PRESERVE

Achievements in Conservation,

Recycling and Groundwater Recharge

February 2021

Covering fiscal year

July 2019-June 2020

WATER  **TOMORROW**
Annual Report to the California State Legislature

METROPOLITAN'S LOCAL RESOURCES PROGRAM

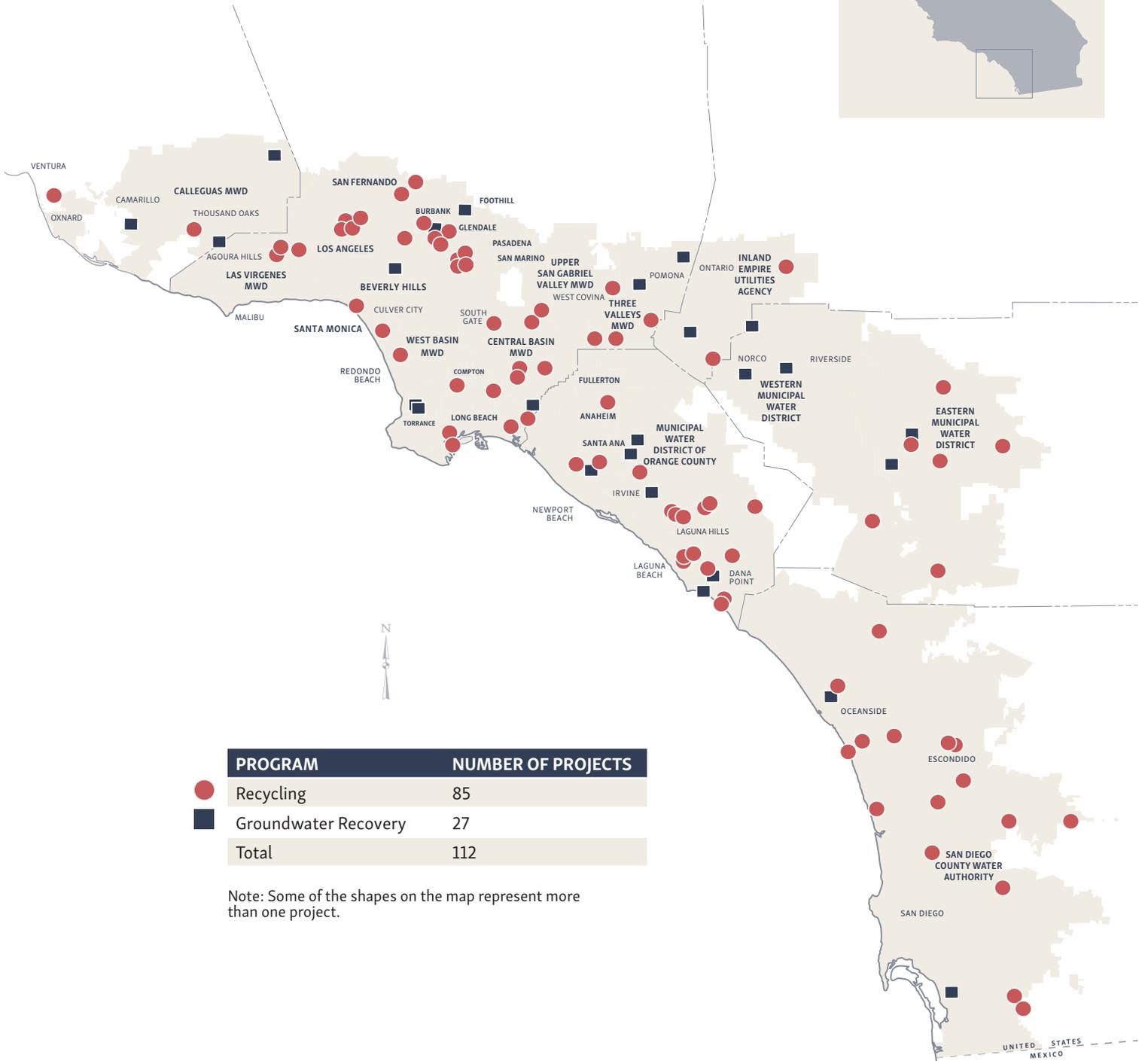


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For more information about this report, contact Metropolitan's
Legislative Office in Sacramento at (916) 650-2600.

ABOUT METROPOLITAN AND 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 our demand for water.

Metropolitan is a public agency and a 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 about 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.

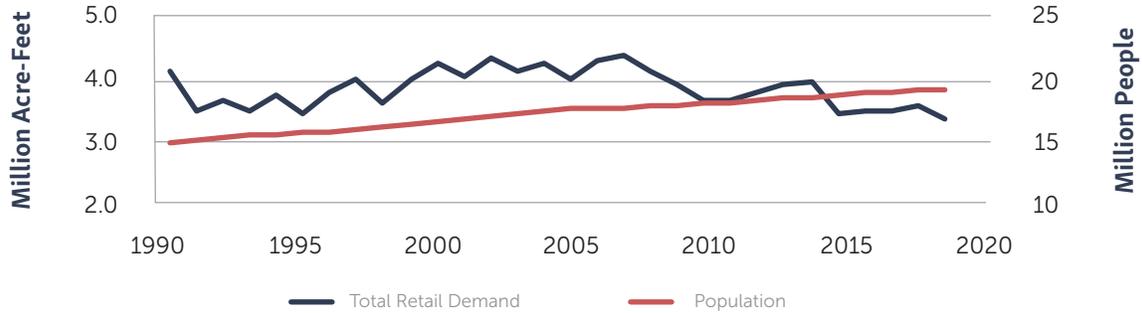
Metropolitan draws on supplies from the Colorado River through the Colorado River Aqueduct, which it owns and operates; from Northern California via its participation in the State Water Project; and from local resource programs and transfer arrangements. An increasing percentage of Southern California's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

Conservation and local resources 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, as detailed in this report.

The cover of this report reflects themes that are vital for the success of Metropolitan, and it all begins with "We." Metropolitan is a single entity, but a collective of voices. Ours is a large service area and we make decisions that are for the good of the entire region and state. We are part of a larger community that demands efficiency and transparency and environmental considerations. Especially this calendar year, when isolation feels more acute, Metropolitan recognizes and appreciates its place in the broader community of Southern California.

Population Growth vs. Total Retail Demand

Metropolitan's Service Area 1990-2019



- Notes about the graph:
1. Calendar year data.
 2. Population based on the Department of Finance.
 3. Total Retail Demand includes municipal, industrial, and agricultural consumptive uses as well as groundwater replenishment and seawater barrier uses.

Our approach to meet the responsibility we have to our region has evolved over time. 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.

The success of this latest vision depends on each of the separate pieces of our system working together. Our imported supplies provide an important 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, and we have helped pay for the clean-up of contaminated groundwater when needed. Groundwater agencies often use our imported

supplies, particularly low salt bearing State Water Project supplies, to replenish their basins when levels are low. 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.

Our systematic program of encouraging reduced water use helps ensure that demand for water remains moderate and complements our supply development initiatives. This approach has been highly successful 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. Our region exemplifies the notion of doing more with less, but it has not happened by chance. This report details the significant steps our region has taken to manage our demand for water.

PLANNING FOR THE UNIMAGINEABLE

The year 2020 will be remembered for many unforeseen challenges and hardships, but also as a testament to our resiliency and innovative solutions. As a member of the greater California community, Metropolitan was right there too – reassuring the public about the safety of drinking water, adjusting to reduced water demands, transforming how employees work, and helping the state offset energy demands during intense heat periods by taking swift action to protect the state’s electrical grid.

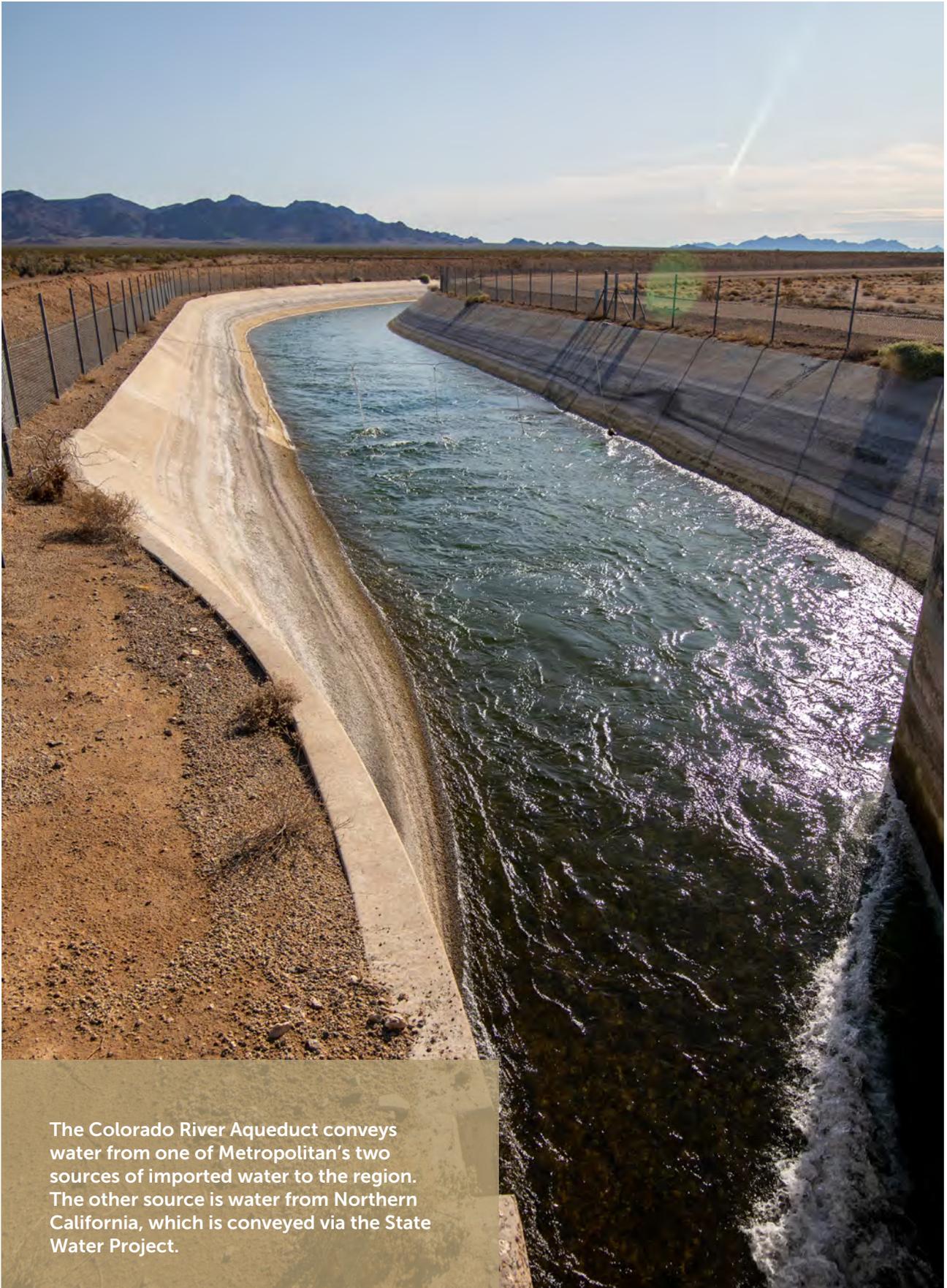
Metropolitan started fiscal year 2019/2020 like most others – with plans and programs to reduce the need for growing imported supplies to meet demand. We did this by funding local resource programs to increase conservation, recycling and groundwater recharge opportunities. The fiscal year ended with a renewed sense of purpose as essential workers and a deeper appreciation for our agency’s legacy of planning and forward thinking. This mindset continues to infuse the preparation of this year’s Integrated Water Resources Plan update that will help strengthen Southern California’s ability to deal with a changing climate and other challenges. The collaborative IRP update planning process, now underway, will examine supply and demand scenarios evaluated against the backdrop of dynamic and evolving conditions. It will help chart a course for Metropolitan to make the best decisions for diversifying the region’s water supply and sound resource management decisions.

Here are some of this year’s key accomplishments in the arena of local resources:

- Metropolitan invested more than \$43 million in conservation, recycling and groundwater recovery programs in fiscal year 2019/20, bringing its total cumulative investment to \$1.5 billion since 1990.

- Metropolitan increased the number of recycling and groundwater recovery projects participating in the Local Resources Program to 112 projects. LRP projects have produced more than 4 million acre-feet* since 1990.
- In fall 2019, Metropolitan began operating the Regional Recycled Water Advanced Purification Center demonstration plant. Together with the Sanitation Districts of Los Angeles County, Metropolitan is using the facility to test purification processes for potable reuse, optimize operations and identify costs and other data needed for a possible full-scale facility and program.
- Education and outreach activities quickly pivoted in response to the pandemic to promote water safety and reliability messaging, as well as highlighting gardening as a wellness activity. Online classes in gardening with California Friendly® and native plants and irrigation techniques were added to a roster of educational resources for students of all ages that included virtual field trips and other self-guided learning activities.

*An acre-foot is approximately 326,000 gallons – enough for about three Southland families for one year



The Colorado River Aqueduct conveys water from one of Metropolitan's two sources of imported water to the region. The other source is water from Northern California, which is conveyed via the State Water Project.

ACHIEVEMENT SCORECARD

Conservation

FY 2019/20 Total Water Saved ¹	1,060,000 acre-feet
New Water Saved From Metropolitan Conservation Credits Program ²	11,300 acre-feet
Water Saved From Existing Metropolitan Conservation Credits Program ³	213,000 acre-feet

FY 2019/20 Investment

Metropolitan Conservation Credits Program Investment ⁴	\$26 million
Member Agency Conservation Investment ⁵	\$10 million
Metropolitan Outreach & Education	\$3 million

Cumulative Savings Since 1990

Water Saved From Metropolitan Conservation Credits Program ⁶	3,270,000 acre-feet
Metropolitan Conservation Investment (excluding funding by member agencies) ⁷	\$824 million

Recycled Water

FY 2019/20 Production⁸	441,000 acre-feet
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Water Produced From Projects Receiving Metropolitan Funding	71,000 acre-feet
Water Produced From Projects Without Metropolitan Funding (incl. Santa Ana River base flow) ⁹	370,000 acre-feet

FY 2019/20 Investment

Metropolitan Funding	\$13 million
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Cumulative Production & Investment Since Inception¹⁰

Production With Metropolitan Funding	2,972,000 acre-feet
Metropolitan Investment	\$510 million

Groundwater Recovery

FY 2019/20 Production	112,000 acre-feet
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Water Produced From Projects Receiving Metropolitan Funding	50,000 acre-feet
Water Produced From Projects Without Metropolitan Funding	62,000 acre-feet

FY 2019/20 Investment

Metropolitan Funding	\$4 million
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Cumulative Production & Investment Since Inception¹¹

Production With Metropolitan Funding	1,052,000 acre-feet
Metropolitan Investment	\$173 million

Conjunctive Use Program¹²

Metropolitan Cumulative Capital Investment	\$27 million
Proposition 13 Grant Funds Administered by Metropolitan	\$45 million
Water Stored Since Program Inception through June 2020	351,000 acre-feet
Water Extracted Since Program Inception through June 2020	288,000 acre-feet

Groundwater Replenishment¹³

FY 2019/2020 Delivery	170,000 acre-feet
Cumulative Replenishment Delivery since 1984	4,133,000 acre-feet

Regional Summary

	FY 2019/20	Cumulative
Metropolitan's Investment in Water Conservation, Recycled Water and Groundwater Recovery ¹⁴	\$43 million	\$1.5 billion
	345,000 AF	7,294,000 AF

The numbers above have been rounded to present a topline view of conservative achievement. More precise numbers are included in the report narrative.

METROPOLITAN'S CUMULATIVE INVESTMENT

	Millions Invested	Acre-feet
Conservation	\$824	3,270,000
Recycled Water	\$510	2,972,000
Groundwater Recovery	\$173	1,052,000
	\$1.5b	7,294,000

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.

- 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.
- New water savings achieved through Metropolitan's Conservation Credits Program and from member agency funded programs initiated in fiscal year 2019/20.
- Includes water savings initially achieved through Metropolitan's Conservation Credits Program and subsequently maintained through plumbing codes.
- Active conservation investment includes administrative fees for contracted program vendors. Investment also includes \$1.7 million of outreach that was budgeted through the Conservation Credits Program.
- 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.
- Cumulative water savings since 1990 that include water savings initially achieved through Metropolitan's Conservation Credits Program and subsequently maintained through plumbing codes.
- Metropolitan's cumulative conservation investment for fiscal year 2019/20 reflects a revision in total cumulative expenditures due to a reconciliation audit. This does not include outreach and education expenditures.
- Figures reflect actual and estimated deliveries for all Metropolitan-assisted projects and payments reported for fiscal year 2019/20; cumulative production and investment reflect accounting reconciliation as data become available; annual regional production for recycled water includes an estimated 54,110 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Metropolitan's cumulative conservation investment for 2019/20 reflects a revision in total cumulative expenditures due to a reconciliation audit. Cumulative conservation investment does not include outreach and education expenditures.



**WE
CONSERVE**

Since 1990, Metropolitan has invested \$824 million in conservation rebates.

CONSERVATION

To support continued conservation, Metropolitan has a number of initiatives that include financial incentives, as well as compelling education and outreach programs. Metropolitan also advocates for legislation, codes, and standards that lead to increased water savings. Managing our region's water resources is a collaborative effort that requires partnerships with member agencies, local and diverse communities, schools and businesses.

Over the past 40 years, Metropolitan has delivered conservation programs designed to encourage consumers to use water-efficient devices and adapt 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 the 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, bring 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. Metropolitan saw this with the introduction of high-efficiency clothes washers.

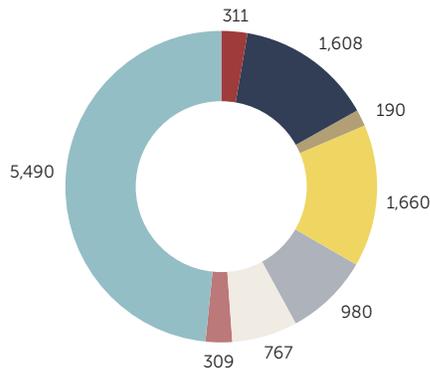
Advocacy for new standards and regulations happens when products become more available. This propels a change in codes that leads to sustained water savings. New standards and codes also encourage research and development of the next generation of technologies, processes, services and design approaches. 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 take over and sustain the change.

During fiscal year 2019/20, Metropolitan's active conservation efforts saved about 213,000 acre-feet of water. Rebates funded through Metropolitan's Conservation Program generated about 11,300 acre-feet of new water savings and will continue to produce more savings in years to come.

Since 1990, Metropolitan has invested \$824 million in conservation rebates, of which approximately \$26 million was spent in fiscal year 2019/20. 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 and cisterns. These programs are aimed at market transformation and calculated differently to provide a greater incentive. When available, Metropolitan supplements its conservation programs using state and federal grant funds.

New Water Savings in Acre-feet



- Commercial Indoor Conservation
- Water Savings Incentive Program
- Residential Turf Replacement
- Commercial Outdoor Irrigation
- Residential Indoor
- Residential Customer Messaging/Leak Detection
- Commercial Turf Replacement
- Residential Outdoor Irrigation/Rain Collection

Fiscal Year 2019/20 Conservation Program Highlights

1. Metropolitan provided about \$26 million in rebates, landscape and irrigation classes, research, and outreach to help consumers reduce water use in their homes and businesses.
2. Metropolitan processed more than 30,400 applications for a total of \$18.9 million in regional rebate funding.
3. The Residential Measured Water Savings conservation category produced the most water savings of all items that Metropolitan rebated on last fiscal year. Items in this category included social media messaging programs and residential leak detection devices, which resulted in a measured reduction in water use of about 5,490 acre-feet. Member agency administered programs measured water use before and after implementation of these programs to determine water savings.
4. Metropolitan completed its successful multi-family regional pre-1994 toilet replacement program last fiscal year. Over 7,900 older toilets were replaced with 1.1 gallons per flush toilets with an estimated annual savings of 155 acre-feet per year. A concerted effort was made to increase water savings within disadvantaged communities in Metropolitan’s service area.

Metropolitan’s Residential Conservation Programs

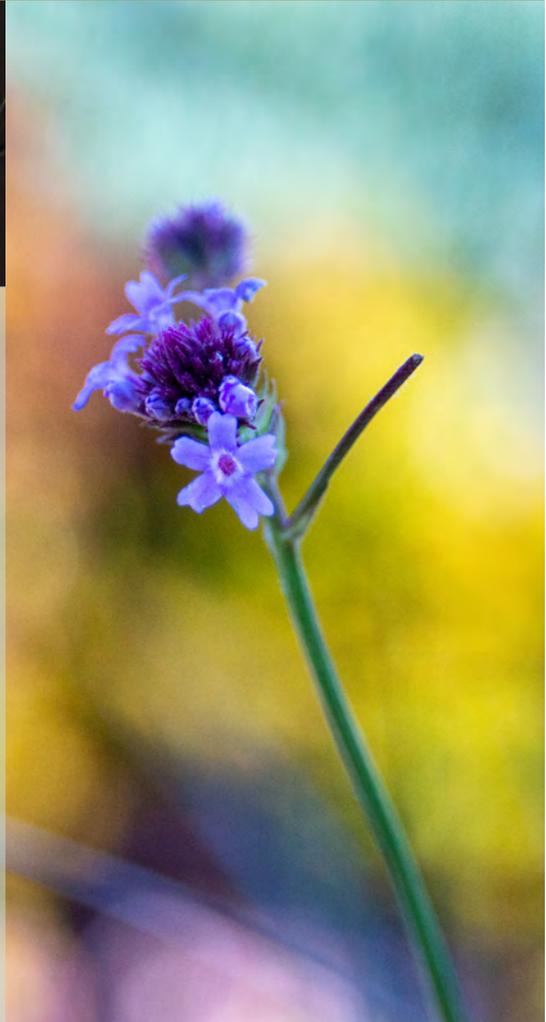
SoCal Water\$mart Residential Program and Member Agency Residential Programs

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 2019/20 included high-efficiency clothes washers, premium high-efficiency toilets, high-efficiency sprinkler nozzles, smart irrigation controllers, rain barrels and cisterns. Metropolitan estimates about 1,660 acre-feet of annual water savings from more than 27,000 residential conservation device rebates were funded by Metropolitan in fiscal year 2019/20.

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 5,890 acre-feet annually from these programs administered in fiscal year 2019/20.



A new pilot study looks at the concentration of water-efficient fixtures in homes, like this high-efficiency washer, to determine their water usage.



Metropolitan is studying long-term commitment to maintain a sustainable landscape.

Popular Conservation Items

Turf Replacement Program

Metropolitan's Regional Turf Replacement Program was reintroduced July 2018, offering both residential and commercial rebates. For applications received after April 2019, Metropolitan increased the program rebate from \$1 to \$2 per-square-foot, expanded the allowable project size, and eased some requirements to make it more accessible for applicants. In its first full year, the Turf Replacement Program provided rebates in fiscal year 2019/20 for the removal of about 4.3 million square-feet of lawn. This resulted in an estimated annual water savings of about 500 acre-feet, an increase of 200 acre-feet from the previous year.

Premium High-Efficiency Toilets

Metropolitan offers rebates for premium high-efficiency toilets that use no more than 1.1 gallons per flush. These devices use about 30 percent less water when compared to older ultra-low-flush toilets which use 1.6 gallons per flush. In fiscal year 2019/20, Metropolitan approved an initiative to increase water savings in disadvantaged communities. The plan includes an 18-month regional pilot program to temporarily boost rebates from \$40 to \$250 to replace toilets in multifamily housing built before 1994 with premium high-efficiency models. Metropolitan estimates that rebates issued for both residential and commercial customers in fiscal year 2019/20 will save about 520 acre-feet of water per year.

High-Efficiency Clothes Washers

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. Metropolitan estimates water savings of about 460 acre-feet annually from clothes washer rebates in fiscal year 2019/20.

Smart Irrigation Controllers

Smart irrigation controller incentives have been available from Metropolitan since 2006. These devices are now more technologically advanced, customer-friendly and have a greater ability to determine optimal landscape water needs. Smart irrigation controllers save water by automatically adjusting watering schedules based on weather, soil conditions, plant material, sun exposure, and slope. Metropolitan estimates water savings of about 1,250 acre-feet annually from smart controller rebates in fiscal year 2019/20.

Metropolitan's Commercial Conservation Programs

Metropolitan's commercial conservation programs provide financial incentives for water-saving devices and projects, including landscape transformation. Examples include rebates on certain commercial food devices, cooling towers and medical and dental equipment. Metropolitan estimates savings of about 3,770 acre-feet annually from commercial conservation programs in fiscal year 2019/20.

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 sub-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 2,850 applications to SoCal Water\$mart in fiscal year 2019/20. An additional 970 acre-feet of water were saved from member agency incentive programs.



Sap flow sensor monitors vine water use in a study by Fruition Sciences, funded in part through Metropolitan's Innovative Conservation Program. Photo courtesy Fruition Sciences.

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 2019/20, Metropolitan estimates savings of about 1,160 acre-feet.

Research and Development

Innovative Conservation Program

Metropolitan's Innovative Conservation Program is a competitive grant program that evaluates water savings and reliability of innovative water-saving devices, technologies and strategies. About \$570,000 of funding has been provided for the 2018 request for proposals by the U.S. Bureau of Reclamation, Southern Nevada Water Authority, Central Arizona Project, Southern California Gas Company, Western Resource Advocates, and Metropolitan for this round's selection of water efficiency studies.

Fifty-five project proposals from diverse groups such as universities, entrepreneurs, commercial laboratories, non-profit organizations and individuals were submitted and evaluated by a selection committee. Twelve projects were selected and received up to \$50,000 each in funding. Half the projects focus on improving landscape water efficiency, while the other projects range from leak detection to innovative financing for graywater systems.

Metropolitan Research Focus

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

- Conducting 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 2021 (which may have to be extended due to the impact of the pandemic)
- Continuing an ongoing study, in two-year snapshots, of past turf removal program participants to determine how many have maintained their sustainable landscaped yards
- Partnering with the Alliance for Water Efficiency for research on:
 - Water affordability
 - Water savings potential of commercial cooling towers
 - Conservation savings model update
- Evaluating the water savings potential of distribution system processes for leak detection with consideration to expand the study to other agencies
- Partnering with a member agency to study the effect of contractor performed irrigation system repairs and modifications on outdoor water savings



This photo was taken prior to the pandemic onset.

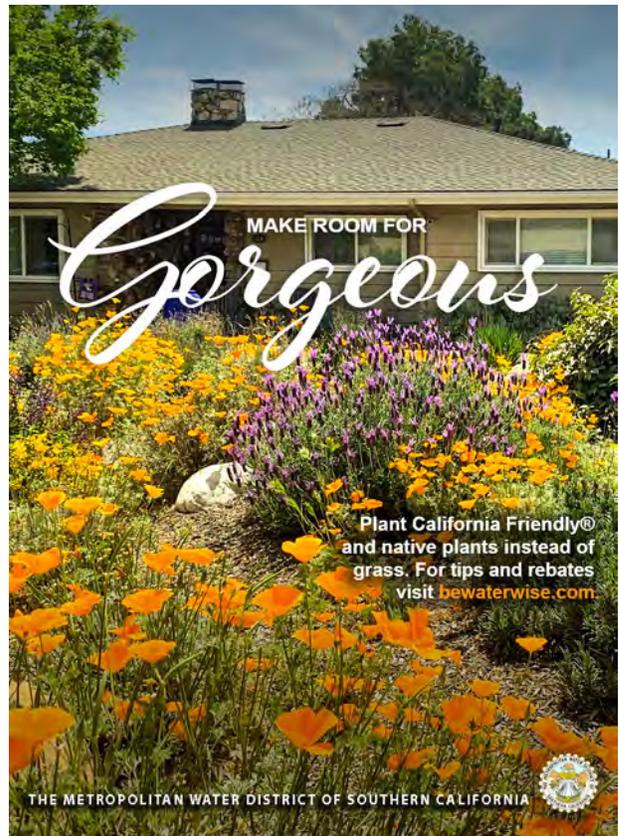
Having an established communication channel to consumers cultivates trust and allows the district to be nimble in its messaging.

COMMUNICATIONS AND OUTREACH

Metropolitan's conservation and education outreach programs focus on conservation as a way of life through everyday water-saving habits and a shift toward sustainable landscaping. Our in-house resources allow us to rapidly adapt and revise messaging and programs to address evolving water supply conditions and consumer interests.

Advertising and Outreach Campaign

Metropolitan is the nation's largest wholesaler of drinking water in the country. With that distinction comes the responsibility to communicate about safety, reliability and environmental considerations, as well as challenges that come with maintaining a secure, high-quality water source. We rely on traditional outreach tools like advertising, but also look to other avenues of communication. We are mindful to produce materials in multiple languages that are culturally relevant to speak to our diverse service area. We create educational curriculum and programs that bring conservation messages home with students. We partner with environmental groups and retailers to get out messages about the value of native plants and landscape designs that can reduce runoff and attract beneficial birds and bugs. We also curate special messaging presented as theater and animation shorts for social media. The shared goal of all these efforts is to provide facts that can be trusted and to engage consumers with elements of humor, whimsy, and nuance that reflect the individuality of our region.



In fiscal year 2019/20, the successful conservation message of the “Save Water 365” campaign targeted the promotion of higher rebate offered under Metropolitan’s revamped Turf Replacement Program. The incentive provides Southern Californians \$2 for every square-foot of grass replaced with more water-efficient sustainable landscaping.

The campaign continued to reach diverse audiences on multi-media platforms, including:

- Digital billboards that encouraged residents to “ditch their grass and claim their rebate”
- Radio spots in English and Spanish on nearly 40 radio stations
- Creative digital display ads that generated nearly 120 million impressions on digital media and nearly 300,000 ad clicks

Local community outreach also played an important role in this campaign through strengthened partnerships between Metropolitan and its member agencies. Turf Replacement Program advertisements in English, Spanish and Chinese ran in 25 publications, and reached 1.7 million readers across the district’s service area. Metropolitan also partnered with Los Angeles- and San Diego-based television news shows to produce water conservation programming in English and Spanish. On-air talent spoke about the benefits of replacing lawn with California Friendly® and native landscaping and promoted Metropolitan’s turf rebate. These efforts have spurred activity in conservation programs this year.

In fall 2019, Metropolitan launched a multilingual digital campaign that continued to promote the turf rebate incentive. Digital display banners on home improvement and lifestyle websites encouraged viewers to save money by converting their lawns to sustainable landscapes.

Together with search advertising, these display ads generated 151 million impressions and thousands of turf rebate applications. The Hispanic market saw a significant increase in online engagement and drove the most landing page visits with 200,000 link clicks.

To supplement digital outreach to large and diverse audiences, Metropolitan partnered with Southern California’s professional sports teams including the Angels, Dodgers, Rams, Chargers, Lakers, Clippers, and Kings to promote water use efficiency. Ads appeared in game-day programs and annual yearbooks, reaching millions of fans across Southern California. These creative assets also received more than half a million impressions on Metropolitan’s social media channels.

Additionally, Metropolitan initiated in-house design and advertising campaigns to reach new online demographics. With zero outside production costs, staff designed an award-winning social media campaign called Patch Match in the format of a dating app that ‘matches’ consumers with the perfect California Friendly® plants and promotes water conservation. The social media campaign was significantly more efficient than other digital and online advertising, reaching more than 200,000 people with nearly 400,000 impressions, resulting in nearly 3,000-page views to bewaterwise.com. The National Association of Government Communicators honored Patch Match with a first-place award in the social media category.

In late 2019, staff once again brought their creative concepts to fruition with the “Wasting Water Is...” campaign. This three-part digital commercial series was produced entirely in-house and featured scenarios where water wasters learn how scary, tragic and offensive wasting water really is. Production costs for all three commercials totaled less than \$50,000, compared to typical advertising agency costs of \$300,000 to \$500,000 per video. Movie posters and animated GIFs promoted on Metropolitan

social media channels resulted in more than 5.5 million impressions with more than 79,000 link clicks. Staff also advertised the videos on YouTube and connected TV devices such as Apple TV, Chromecast and Roku. These ads targeted entertainment, lifestyle and sports themed content that outperformed goals at an average 44 percent view through rate.

Throughout the fiscal year, Metropolitan officials conducted hundreds of interviews with news reporters from major TV and print media outlets, ethnic media, radio, 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, the need to modernize the state's water infrastructure, water supply reliability, conservation and stewardship. As part of this public outreach, Metropolitan's General Manager Jeffrey Kightlinger blogged on the district's homepage and wrote guest blogs and op-eds encouraging conservation in fiscal year 2019/20.

Response to COVID-19

Metropolitan's outreach messaging pivoted in the midst of the pandemic to providing immediate reassurance to the public about the safety and reliability of the region's water supply in English, Spanish and Chinese language materials. Projects included a video message from the General Manager, a statement from the Chairwoman of the Board Gloria D. Gray, media relations, fact sheets, FAQs and the creation of a new webpage dedicated to COVID-19 updates. A multilingual ad campaign ran in 35 newspapers, reaching about 2.5 million readers throughout Metropolitan's service area. Several creative campaigns on social media reinforced safety and reliability messaging, while "METitations" videos drew on existing footage to convey reassuring messages and to showcase the district's facilities during the pandemic. An employee-focused series on social media highlighted Metropolitan field staff as essential workers.

Metropolitan's COVID-19 response materials were shared widely with member agencies and downloaded by other agencies and organizations nearly 1,500 times, while social media posts received more than 2 million impressions on all platforms combined. Internal communications kept employees updated on district plans, policies and safety procedures for managing through a pandemic.

Metropolitan is an active member in many business organizations and provides regular updates on water policy issues and programs. This year, outreach expanded to identify opportunities and financial assistance to small businesses experiencing severe economic consequences from COVID-19 and stay-at-home orders. In addition, Metropolitan typically hosts hundreds of community and business leaders on inspection trips of the State Water Project and Colorado River Aqueduct to help the public better understand the challenges of providing reliable water to Southern California. Some of these programs are being shifted to web-based and online formats to maintain strong outreach.

Community Outreach

Metropolitan's Community Partnering Program provides funding to local groups that bring important water issues to the attention of the communities we both serve. Metropolitan responded quickly to the sudden changes in opportunities for student and public engagements resulting from COVID-19. Many of the CPP's 70 district-sponsored projects and programs shifted to virtual formats, allowing for greater reach and new audience demographics.

These events and initiatives engaged an audience of about 115,000 attendees for fiscal year 2019/20 and included water quality testing kits, water conferences, ever-popular Earth Day events, community gardens and signage, and a variety of educational publications that promote core conservation and water-use efficiency issues.



Metropolitan partnered with the California Native Plant Society and several local water agencies to help identify and increase the availability of California native plants in retail nurseries with the goal of “restoring nature one garden at a time.”

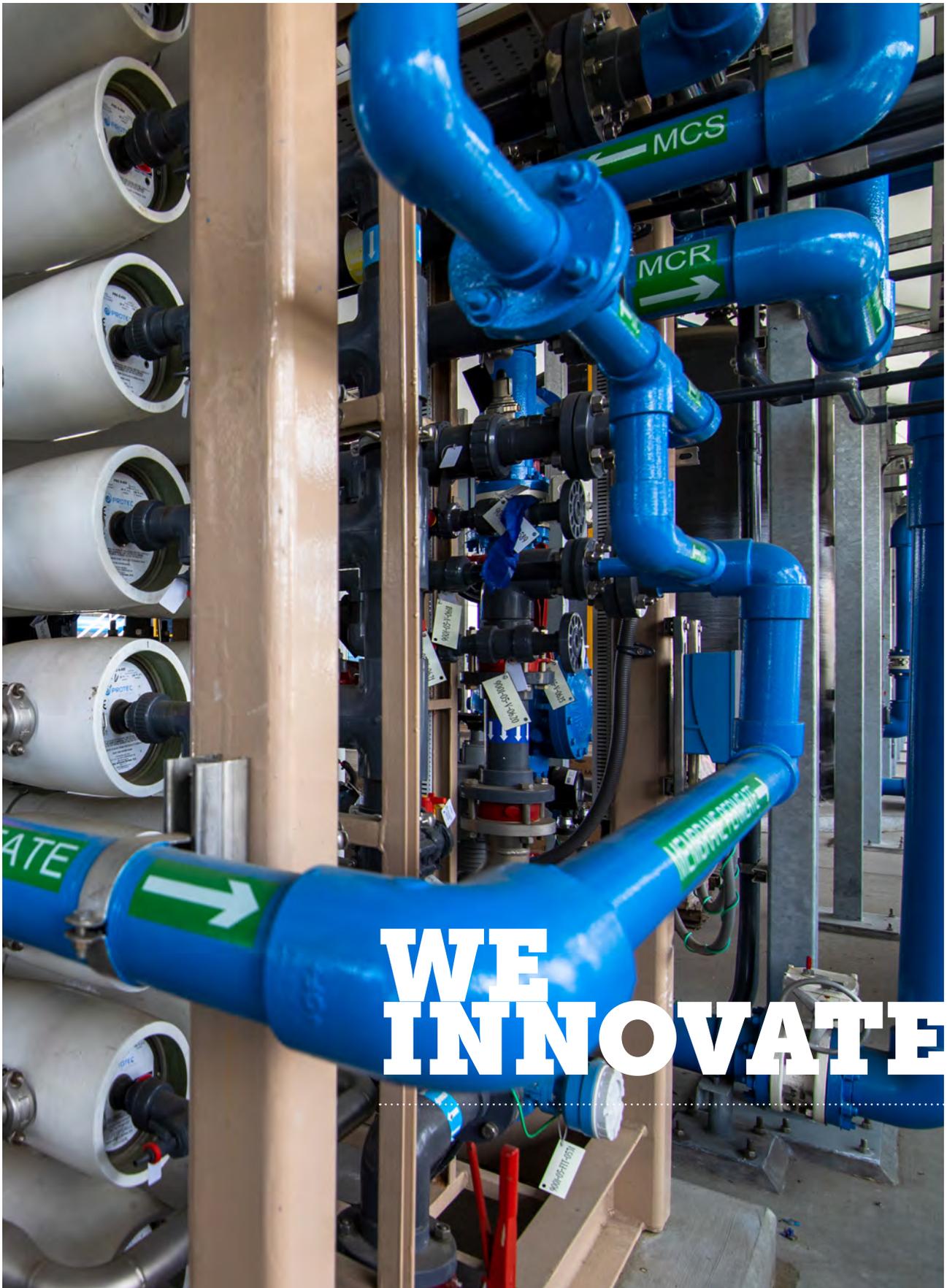
Here are some community engagement highlights:

- The Santa Rosa Plateau Nature Education Foundation supported a pre-pandemic teach-the-teacher “Nature Education Resources Forum” for 100 educators, forestry and park representatives and college students. They established a Nature Education Resource Forum Network to support all forms of nature and science education.
- Among the virtual events that experienced greater engagement was Roundhouse Aquarium’s “Earth Day @ Home Edition,” an online interactive day-long festival designed to educate people of all ages about water conservation techniques, marine sciences and fresh water sources. Over 10,000 people participated on social and digital platforms.
- Theodore Payne Foundation’s “Poppy Hour” also was a direct response to the pandemic’s stay-at-home order. The virtual interview and garden tour series, sponsored in part by Metropolitan, explored the diversity of people and ideas that connect to Southern California plants and landscapes. The online format and fresh content led to a shift in audience demographics and was an opportunity for Metropolitan to reach newer and younger millennial audiences.
- The LA County Science & Engineering Fair showcased inspired youth scientists with a virtual platform that supported 465 student submissions of videos, research papers and display boards.

Education Programs

Metropolitan’s education staff worked with member agencies to hold more than 200 events and engaged nearly 200,000 students, teachers, parents and participants through activities, social media and curriculum materials. Staff continued using emerging educational technologies, including virtual reality tours of the Colorado River Aqueduct and augmented reality watershed exhibits, to encourage critical thinking about regional water issues. In 2019, more than 12,000 public visitors and students toured the Diamond Valley Lake Visitor Center to learn more about Metropolitan’s water systems and programs.

For the first time, Metropolitan’s World Water Forum College Grant Program solicited proposals for a larger grant amount of \$20,000 to conduct research and development on improving water quality, environmental science of watersheds and the implementation of water-use efficiency technologies. Solar Cup™, the nation’s largest high school solar boat race, engaged 40 teams and more than 750 high school students in the STEAM (science, technology, engineering, art and math) topics of water stewardship and renewable energy. The program completed the school year with a new online format in response to school closures resulting from COVID-19. Metropolitan’s “Water is Life” Student Art Exhibit and Calendar annually showcases more than 12,000 pieces of art generated by K-12 students throughout Metropolitan’s service area and was converted to a digital experience.



**WE
INNOVATE**

For close to 40 years, Metropolitan has invested in more than 100 local supply projects throughout the service area.

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, 2019/20 Metropolitan has invested \$680 million to fund 85 recycled water projects and 27 groundwater recovery projects that have produced about 4 million acre-feet.

Water Recycling and Groundwater Recovery

In fiscal year 2019/20, Metropolitan provided about \$13 million for production of 71,000 acre-feet of recycled water for non-potable and indirect potable uses. Metropolitan provided about \$4 million to support projects that produced about 50,000 acre-feet of recovered groundwater for municipal use. Metropolitan’s board approved five new projects for participation in the LRP. Additionally, 370,000 acre-feet of recycled water (including wastewater discharged to the Santa Ana River that percolates into downstream groundwater basins) and 62,000 acre-feet of recovered groundwater were produced by local agencies through other funding sources. Figures 1 and 2 show total recycled water and groundwater recovery production in Metropolitan’s service area, including local agency funded projects.

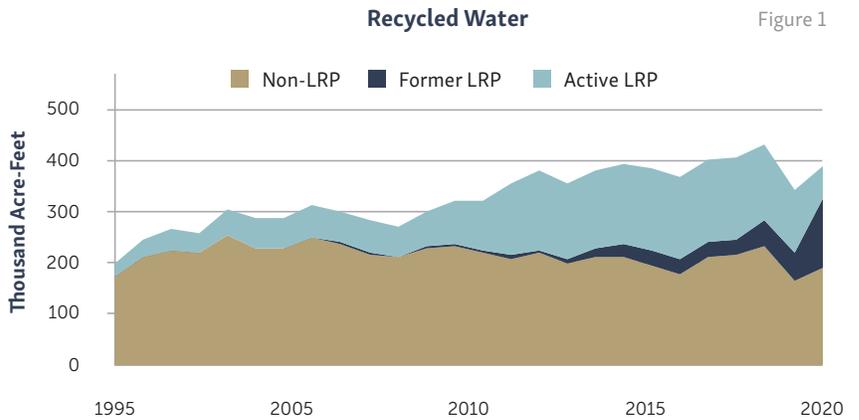


Figure 1

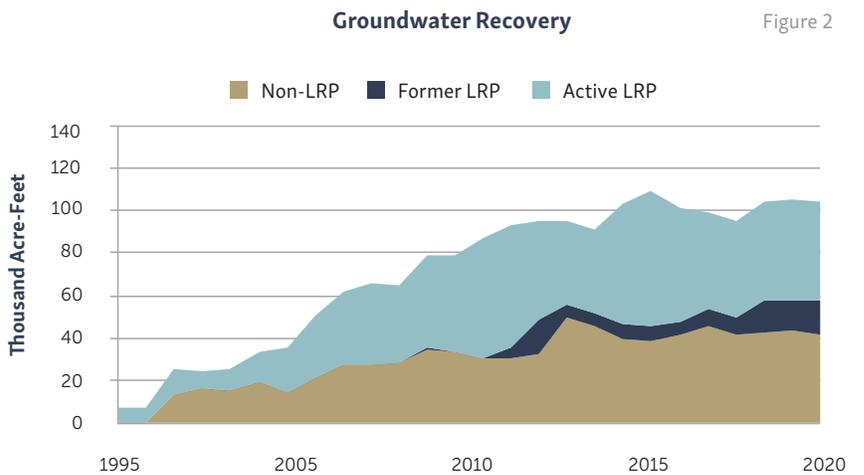


Figure 2

Non-LRP: Projects developed without LRP agreements with Metropolitan. Former LRP: Projects developed under LRP whose agreements have expired and no longer receive Metropolitan financial incentives. Active LRP: Projects developed under LRP and currently receive Metropolitan financial incentives for eligible production.

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 on demonstration facility begins

On-site Retrofit Program

Metropolitan's board approved the On-site Retrofit Program with an annual budget of \$3 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 WaterReuse, to promote and gather feedback that ultimately reshapes the program. Metropolitan maintains a program website (www.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 2019/20, the On-site Retrofit Program has provided funding to 440 sites, replacing about 12,691 acre-feet per year of potable water with recycled water.

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. With improved hydrologic conditions, Metropolitan called upon agencies to store water in the conjunctive-use accounts. In fiscal year 2019/20, Metropolitan stored about 24,000 acre-feet for future drought mitigation and extracted about 17,000 acre-feet.

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 460,000 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. The Cost-Offset Program helped manage about 19,000 acre-feet in fiscal year 2019/20.

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 Sanitation Districts of Los Angeles County. 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.

2019	Conceptual Studies Report completed
2019	Operation of demonstration facility begins
2021-2024	Environmental planning
2024-2031	Design and construction, if approved
2032	Program start-up and operations, if approved

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. Water from the program would be used for indirect potable reuse, and, as regulations are developed in the future to facilitate this, potentially for direct potable reuse at two Metropolitan water treatment plants. The program would reuse the largest untapped source of treated wastewater 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. The facility 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 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 LADWP, the city of Torrance, the

city of Long Beach, 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 Project 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.

Recently, Metropolitan’s Board of Directors approved moving forward with the environmental planning phase of the program, a significant milestone. This is 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 is 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

Metropolitan supports the development of local supplies through its Future Supply Actions Funding Program. These studies are low-cost, low-risk investments Metropolitan can take now to remove barriers to new supplies so that they can be accelerated in the future when needed. The FSA Program is Metropolitan’s primary vehicle for promoting innovative approaches to local supply development. Under the FSA Program, Metropolitan funds member agency studies addressing development challenges for groundwater, recycled water, stormwater and seawater desalination supplies. Goals for the FSA Program are to:

- Reduce barriers to future resource production
- Provide results that are unique, yet transferable to other areas in the region
- Advance the field of knowledge
- Represent a critical path to water resource implementation

Metropolitan implemented an initial round of FSA Program funding in 2013 and launched a second round in 2018. Both rounds have funded a mix of white papers, pilot tests and demonstration studies. The 14 studies approved in 2018 are currently underway and expected to be completed in 2021.

In 2018, Metropolitan also co-funded with the Water Research Foundation six potable reuse projects and one agricultural reuse study 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. Table 1 summarizes Metropolitan’s FSA investments.

Table 1

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	\$955,000	3	\$661,000		
Recycled Water	5	\$772,000	5	\$1,265,000	7	\$975,000
Stormwater	2	\$814,000	4	\$865,000		
Seawater Desalination	2	\$307,000	2	\$365,000		
Total Funding	13	\$2,848,000	14	\$3,156,000	7	\$975,000



A study on slant wells that draw water through a sand and gravel aquifer below the ocean was conducted by the Municipal Water District of Orange County. Funded in part by Metropolitan's Future Supply Actions Program, the study looks at the development of this type of seawater intake technology that has the advantage of not impacting marine life. Photo courtesy MWDOC.

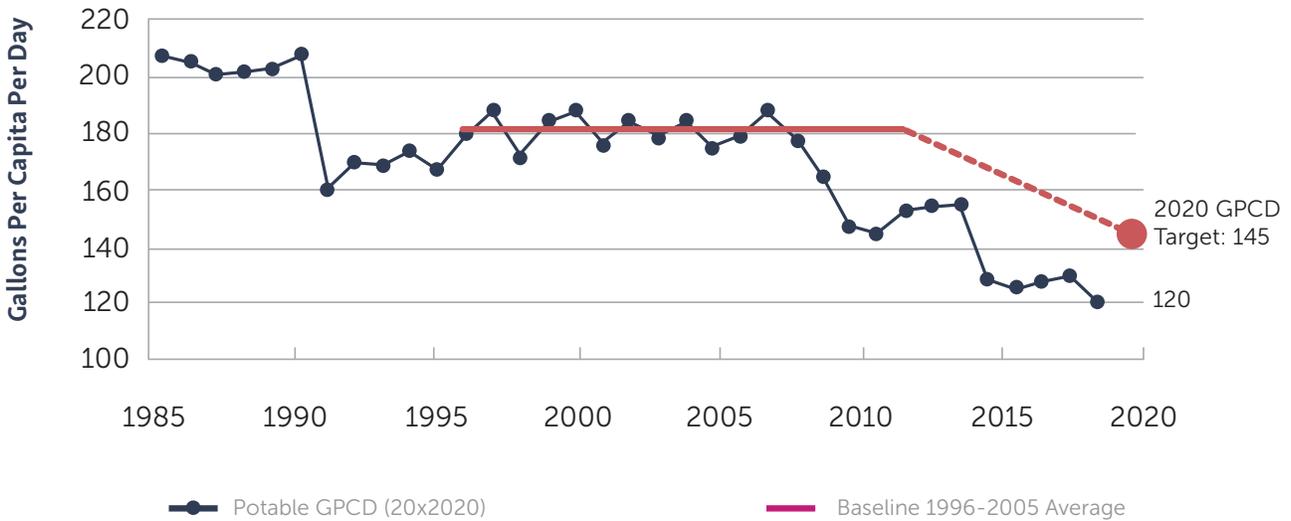
Stormwater Pilot Programs

Metropolitan authorized both the Stormwater for Direct Use Pilot Program and a Stormwater for Recharge Pilot Program in 2019 to better understand stormwater in Southern California. These pilot programs are intended to encourage the development, monitoring, and study of new and existing stormwater projects by providing financial incentives for their construction/retrofit and monitoring/reporting costs. These pilot programs will 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).

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 181 gallons per capita per day (GPCD), and the 2020 reduction target is 145 GPCD. Between 2011 and 2014, there was a slight increase in per capita water use explained in part by economic recovery from the recession and drier weather as compared with previous years. After 2015, the GPCD numbers fell significantly as the region responded to Gov. Jerry Brown’s Executive Order B-29-15 that mandated a 25 percent emergency reduction in urban residential water use. GPCD has remained low due in part to consumers continuing outdoor conservation practices and local outdoor water use ordinances remaining in effect after the state-wide mandatory restrictions were lifted.

Target: 20% Reduction by 2020
Metropolitan’s Service Area Calendar Year



Notes about the graph:
 1. Calendar year data.
 2. 2019 GPCD based on best available data (as of June 2020) and is subject to reconciliation. Data is received in 2020 for the previous calendar year.
 3. Baseline per capita water use based on 1996-2005 average (181 GPCD).
 4. Target GPCD for 2020 based on 20% reduction from baseline (145 GPCD).

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 California Department of Water Resources' collaborative process to support the implementation of urban water use efficiency standards and establish reporting requirements.

The Advanced Purification Center demonstration plant began operations in fall 2019.





Consideration for environmental values is the motivation for Metropolitan's watershed initiatives.

WATERSHED INITIATIVES

Our challenge is not just to ensure water supply reliability and quality, but to do so in an environmentally responsible, interconnected, comprehensive and thoughtful manner. We focus on a range of issues, including watershed health, stormwater collection, salinity management, and habitat restoration and preservation.

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 Stormwater Task Force

Metropolitan remains actively involved in the Southern California Water Coalition Stormwater Task Force. In 2019, the task force developed a white paper that discussed innovative project implementation and enhanced operation and maintenance strategies.

Metropolitan staff gave a presentation on the stormwater pilot program at the task force's annual workshop on September 27, 2019. The workshop brought together more than 200 participants, including local agencies, regional planners and non-government agencies for a discussion on regional stormwater issues.

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, 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 disadvantaged 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

As of fiscal year 2019/20, the council has embarked on Phase 2 of the agreement. They plan 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 are to:

1. Coordinate and connect school greening stakeholders in the LA Basin to cultivate relationships and disseminate resources and educational material
2. Provide technical assistance to "hot" schools to assess and interactively map their campuses for water conservation and greening needs and opportunities, and connect them to partners and resources

3. Utilize Geographic Story Map formats to create a Greening Practices Summary/Guide for Schools in the LA Basin by highlighting specific project case studies

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.

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 2019/20 include:

- Co-funding a Water Research Foundation study for \$75,000 to assess the benefits of blending low-salinity seawater desalination supplies into existing distribution systems in San Diego County
- Supporting a desalination needs workshop during the Multi-State Salinity Coalition's Salinity Summit with a \$10,000 investment
- Funding a scholarship for a student at UC Riverside researching recycled water irrigation optimization
- Revamping the SCSC website
- Developing updated project selection criteria for funding new projects



The coastal California gnatcatcher is a tiny songbird that lives in and around coastal sage scrub.

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:

1. *Southwestern Riverside County Multi-Species Reserve*

Protection for habitat and many wildlife species is provided by the 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.

2. *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.

3. *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.

4. *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

The Lower Colorado River Multi-Species Conservation 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. Creation of more than 8,000 acres of new habitat comprised of conservation areas provides other benefits, including water quality improvements and greenhouse gas reduction. 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 2019/20, about 6,500 acres of habitat have been 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. The forum’s salinity control measures removed about 1.33 million tons of salt from the Colorado River annually. This translates to a salinity reduction of more than 100 milligrams per liter from the Colorado River’s lower basin and Metropolitan’s Colorado River Aqueduct supplies.

In fiscal year 2019/20, the forum participated in the development of environmental documentation 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 plans to release final environmental documentation for a PVU replacement in fall 2020. Although the PVU was not operating for the majority of fiscal year 2019/20 due to a seismic event that halted the injection well’s operations in March 2019, Reclamation is finalizing its review of a plan to restart the existing well at reduced capacity so that brine injection can continue with a lower risk of seismic activity.

Additionally, in fiscal year 2019/20, the forum completed a draft of 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. The forum plans to submit the final 2020 review to U.S. EPA before the end of 2020.

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. A founding member, Metropolitan serves on the MSSC's Board of Directors. Metropolitan sponsored MSSC's Annual Salinity Summit held in Las Vegas in February 2020. The summit discussed a range of topics, including salinity concentrate and management, watershed management, international projects, revenue stability, potable reuse and innovative salinity management strategies. The MSSC also awards scholarships for research related to salinity management issues.

Sacramento-San Joaquin Delta

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. In fiscal year 2019/20, Metropolitan continued to work with the lead agencies (DWR and Reclamation) and local stakeholders to review and provide input to the Final Environmental Impact Report/Environmental Impact Statement. The Notice of Determination (pursuant to CEQA) was signed by DWR in July 2019, and the Record of Decision (pursuant to NEPA) was signed by Reclamation in September 2019. The project is currently at the 35 percent design stage, and environmental permit applications have been submitted to various state and federal agencies. Construction is scheduled to commence in 2021 and may take one to two years to complete, depending on findings from geological testing.

Metropolitan continued working with the State and Federal Contractors Water Agency and DWR to implement the Tule Red Tidal Restoration Project. In October 2019, staff attended the breach ceremony for the project to open more than 400 acres of wetlands to daily tides in the southern Suisun Marsh to benefit native fish species. The State Water Contractors provided \$7.7 million in funding for the project through SFCWA (Metropolitan is a State Water Contractor and provides close to half of their funding). Once the project is completed, the site will be turned over to the California Department of Fish and Wildlife, who will take responsibility for monitoring and managing the site with State Water Project funding. The SWC Science Program is also funding a study to monitor and evaluate the effectiveness of the restoration. In June 2020, monitoring crews reported finding dozens of the state-listed juvenile longfin smelt inside and outside the Tule Red tidal wetland restoration site, which is a promising start for the project.

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 2019/20, 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 began sampling for constituents of emerging concern along the Delta Mendota Canal, due to concerns with treated wastewater input flows. Other new projects include 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.

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. One activity Metropolitan currently participates in is the Delta Regional Monitoring Program. In fiscal year 2019/20, the Delta RMP conducted water quality monitoring studies for pesticides and aquatic toxicity, nutrients, mercury and contaminants of emerging concern.

Battle Creek Salmon and Steelhead Restoration Project

The Battle Creek Salmon and Steelhead Restoration Project is one of the largest cold-water fish restoration efforts in North America. It is a partnership project between Pacific Gas and Electric Company, Reclamation, USFWS, National Marine Fisheries Service and California DFW. Metropolitan has supported and provided financial assistance towards the restoration project.

Once completed, the project will have restored almost 50 miles of habitat in Battle Creek and Battle Creek tributaries within the Sacramento River watershed for threatened and endangered winter-and spring-run Chinook salmon and steelhead, while maintaining the continued production of hydroelectric power at the Battle Creek Hydroelectric Project. The restoration efforts to date have made it possible for USFWS to begin the process of reintroducing winter run Chinook salmon to Battle Creek.

Butte Creek Bypass Project

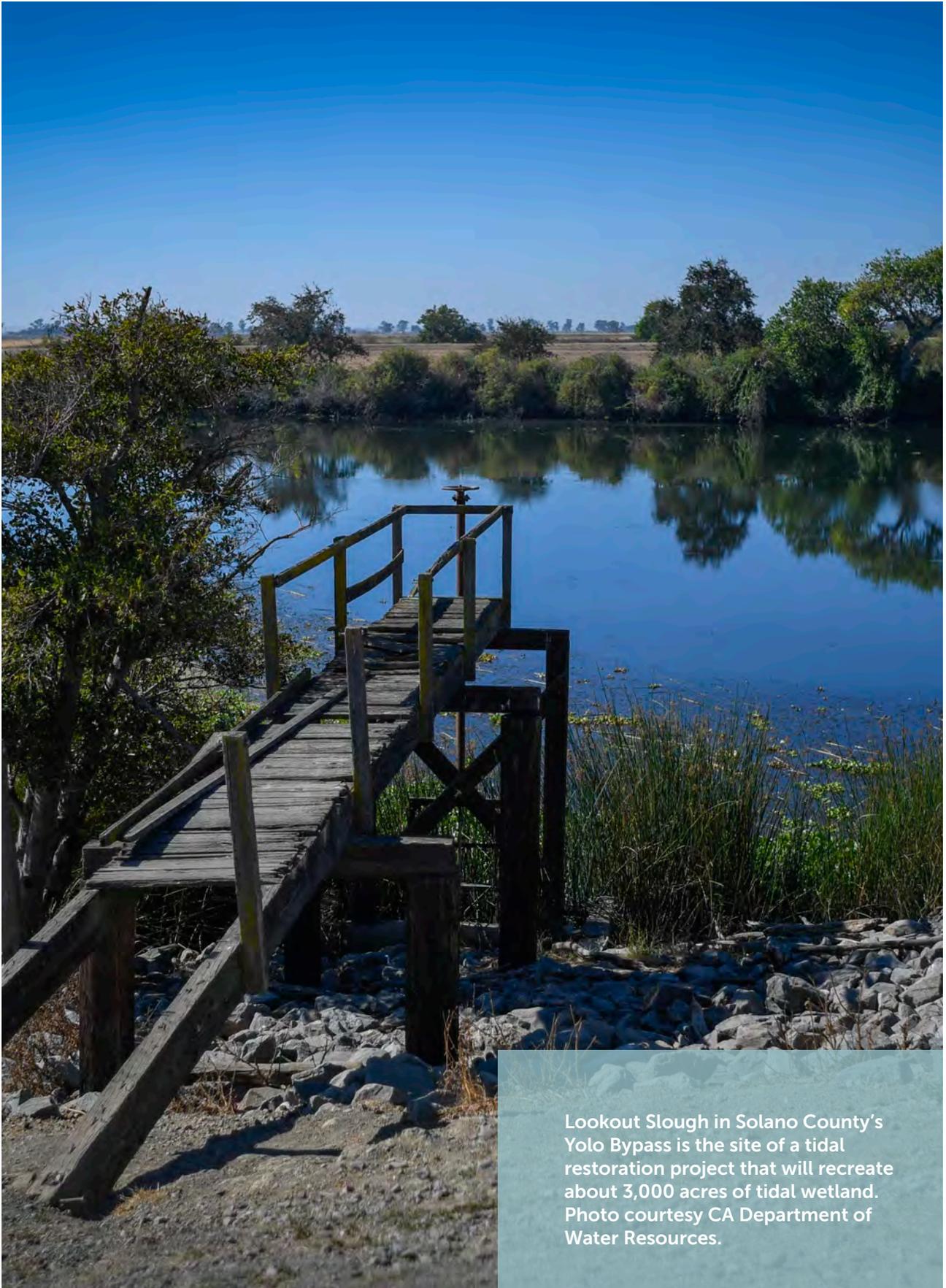
In fiscal year 2019/20, Metropolitan staff continued to meet with the Centerville Schoolhouse Workgroup, a diverse group of stakeholders committed to ensuring the future of Butte Creek's population of spring-run Chinook salmon. The workgroup discussed potential science studies and habitat restoration projects in the lower river and provided suggestions to local water users on how to move habitat restoration projects forward.

Butte Sink and Sutter Bypass Project

Metropolitan is a funding partner on the Butte Sink and Sutter Bypass Project. During fiscal year 2019/20, 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. We are using the strategically located islands – Webb Tract, 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 are also studying climate change risks, managing peat soils to reduce carbon emissions, and monitoring and strengthening levees to improve water quality and supply reliability.



Lookout Slough in Solano County's Yolo Bypass is the site of a tidal restoration project that will recreate about 3,000 acres of tidal wetland. Photo courtesy CA Department of Water Resources.

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 (with the next update due in July 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 7, 2020 to receive public and stakeholder input. Comments received at the hearing are on file at Metropolitan and are available upon request.



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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