

ACHIEVEMENTS IN CONSERVATION, RECYCLING & GROUNDWATER RECHARGE

February 2023
Covering Fiscal Year 2021/22



THE METROPOLITAN WATER DISTRICT
of SOUTHERN CALIFORNIA

Metropolitan's Local Resources Program Projects



Metropolitan's Service Area

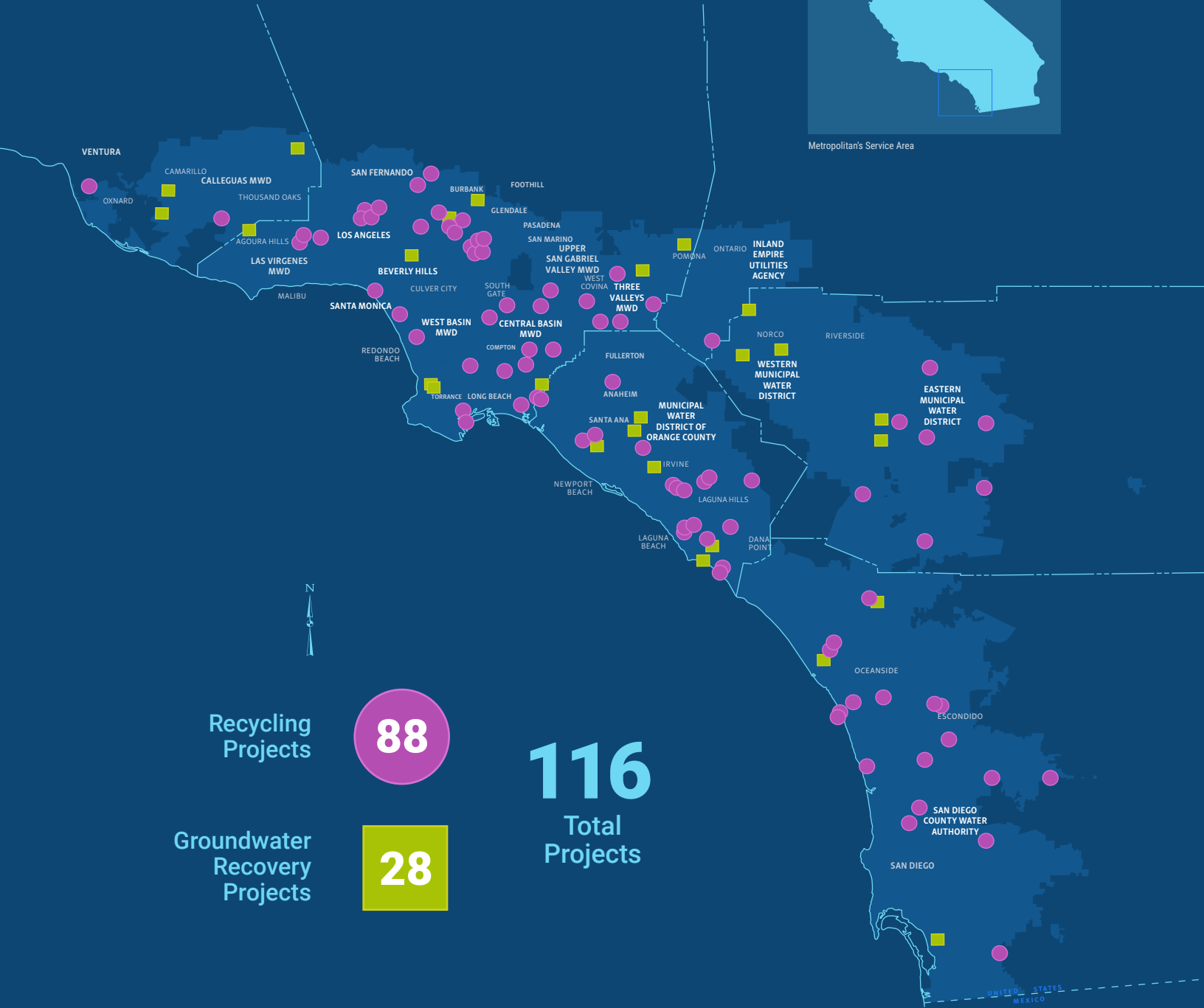


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For more information about this report, contact Metropolitan's Legislative Office in Sacramento at 916.650.2600.

Cover photo: Metropolitan's John Schmelzle (left) and Jose Lozano (right) prepare equipment at the Pure Water Southern California Demonstration Plant for operation and testing.



Mexican sage, a show-stopping, butterfly and hummingbird magnet, is waterwise and perennial.

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.

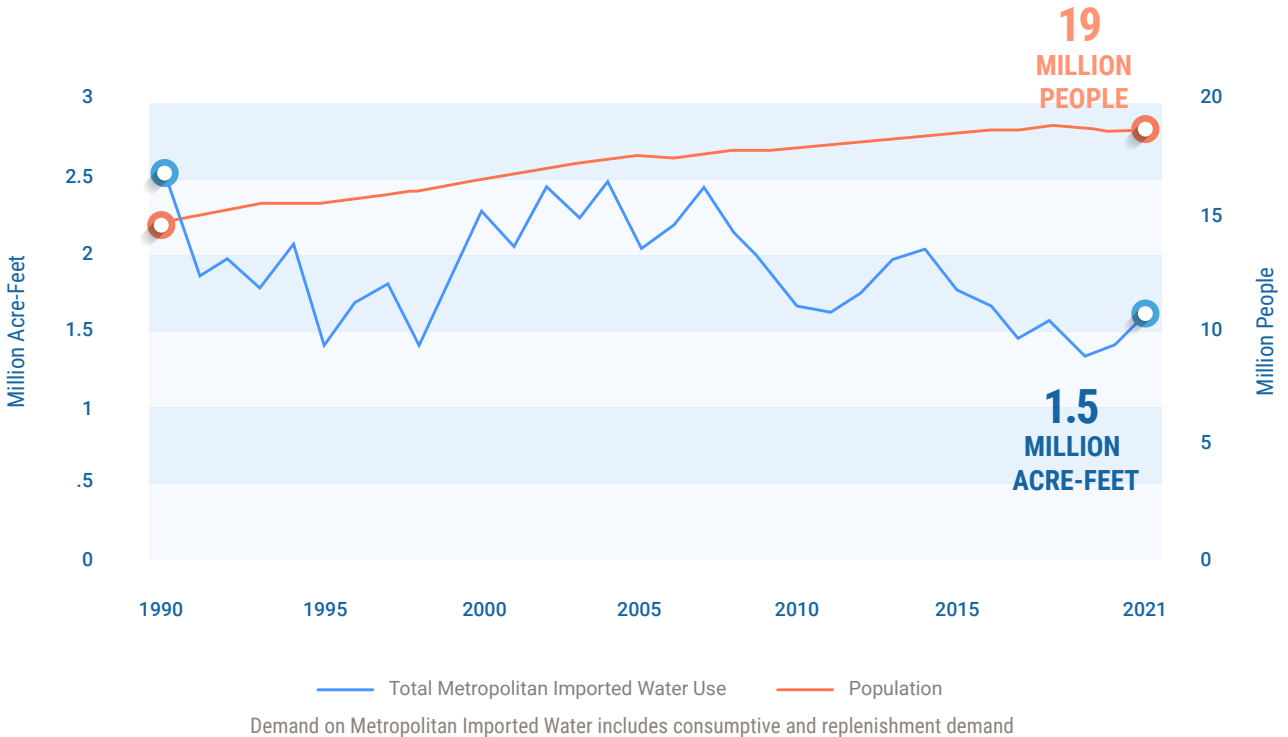
Metropolitan is a public agency and regional water wholesaler. It is a voluntary cooperative of 26 member agencies that purchase some or all their water from Metropolitan. These member agencies directly or indirectly provide water for 19 million people across six Southern California counties. Metropolitan 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 storage agreements, exchanges and transfer arrangements with other agencies both in California and in other western states. Demands on Metropolitan also are 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 and regional levels; regional approaches have proven to be cost-effective and beneficial for all Metropolitan 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. These programs help the region adapt to the impacts of climate change and advance the legislative intent that Metropolitan increase "sustainable, environmentally sound, and cost-effective water conservation, recycling, and groundwater storage and replenishment measures." Local conservation programs may be more limited in scope and target, but can also benefit the region, which is why Metropolitan provides funding to many of its member agencies to implement programs that benefit their respective service areas.

While Metropolitan is involved in many 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 Metropolitan employees featured in our conservation advertising campaign, "This is How We Save Water" which promotes waterwise tips and rebates in seven languages.

Population Growth vs Metropolitan Imported Water Use Metropolitan’s Service Area 1990-2021



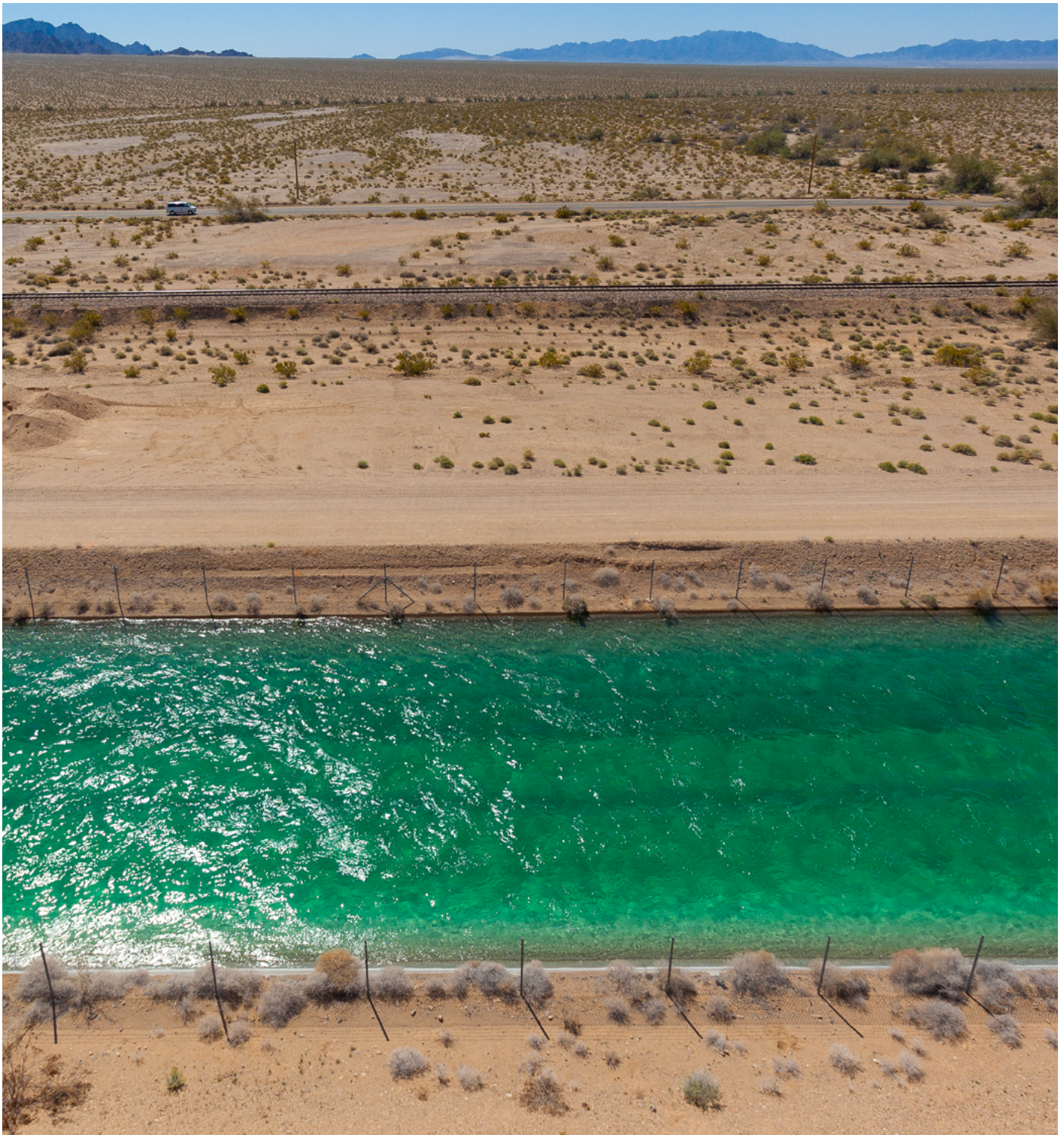
Metropolitan’s approach to meet our responsibilities has evolved over time. The Los Angeles Aqueduct was the forerunner to our own imported supplies. Metropolitan was founded, nearly a century ago, to build and operate the Colorado River Aqueduct. Later, we contracted with the state for a share of the State Water Project. As our region continued to grow, we developed a vast network of distribution lines, state-of-the-art treatment facilities, reservoir storage, and groundwater banking programs to meet and anticipate the needs of our service area.

Today’s vision calls for encouraging sustainable local resource development, water-use efficiency, and innovative storage initiatives that further increase the resilience of our region. We refer to this strategy as building our “fourth aqueduct.”

The success of this 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 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 SWP 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 the continuation of unprecedented drought and in the company of climate change. Our systematic program works in partnership with communities to reduce water use to ensure that demand for water remains moderate. This strategy complements our supply development initiatives and keeps water in storage. We have been very successful in managing demands even in the face of significant population growth within our region. In fact, the graphic on the previous page shows that our region has seen population grow by almost 30 percent since 1990, but that Metropolitan imported water use over this same time period has dropped by almost 40 percent. This exemplifies the region's advances in conservation and local supply development.

Metropolitan's Colorado River Aqueduct.





A third year of drought prompted emergency and shortage declarations across the state. Photo courtesy CA DWR.

One Water in an Era of Climate Change



This past fiscal year was a reminder of the unprecedented challenges that lie ahead for the region. In Northern California, a promising start to the water year was not enough to stave off a third consecutive year of drought that critically limited State Water Project supplies. On the Colorado River, two decades of drought have depleted reservoirs to record low levels, leading to a first ever shortage declaration. The U.S. Bureau of Reclamation's calls for additional large water-use reductions add uncertainty to the future reliability of supplies from the river. Consequently, the region's pathway forward will require Metropolitan to continue to expand its planning methodology to better prepare for different scenarios in an uncertain future.

Continued drought, emergency, and shortage declarations for our two main imported sources of supply are signposts of climate change. We have arrived at what Metropolitan's General Manager Adel Hagekhalil considers a crossroads, our "Mulholland Moment," in reference to the famed engineer who designed the aqueduct systems supplying water to Southern California from the Owens Valley and the Colorado River. This time instead of engineering a solution to fill the gap between water supply needs and available resources, we're engineering a "One Water" solution that looks to local resources, conservation, recycling and innovative partnerships with agriculture and other water agencies, to complement the three major aqueducts that serve the Southland.

There's no doubt that Southern California will always need imported water. But we can do more to build local resource resiliency. This includes a concerted effort to work with our underserved communities to design targeted efficiency programs and other opportunities to save.

Metropolitan is moving forward with big plans for local resource development. We have a major investment in a potential regional water recycling project that will reuse hundreds of millions of gallons of wastewater currently sent to the ocean. Pure Water Southern California could produce up to 150 million gallons of water a day when completed, making it one of the largest advanced water treatment facilities in the world.

Key accomplishments this past fiscal year - July 2021 to June 2022:

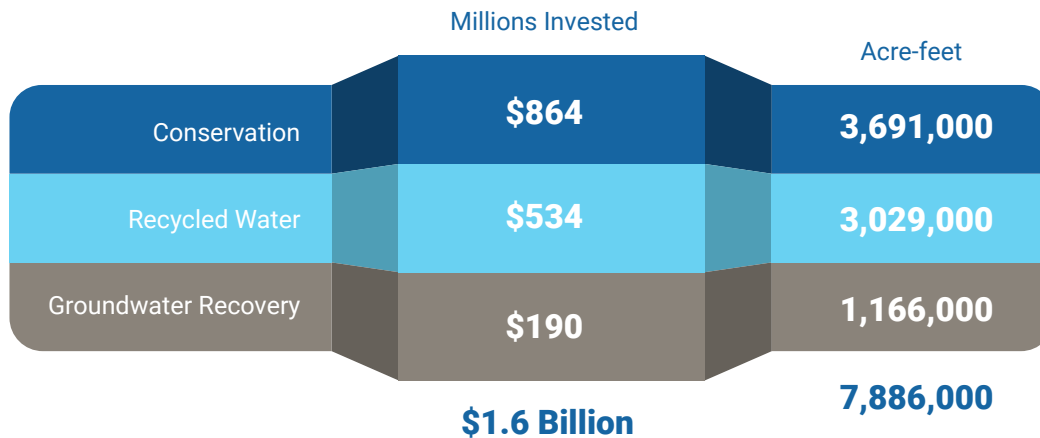
- Metropolitan provided about \$24 million in rebates, landscape and irrigation classes, research, and outreach to help consumers reduce water use in homes and businesses.
- Metropolitan created a municipal leak detection and repair grant funding program to reimburse member agencies and local water agencies in finding and repairing leaks in their distribution systems.
- About \$8 million for production of 56,000 acre-feet of recycled water for non-potable and indirect potable uses was provided by Metropolitan. An additional \$8 million was financed by Metropolitan to support projects that produced about 59,000 acre-feet of recovered groundwater for municipal use.
- Member agency partners and groundwater managers expressed support for Pure Water Southern California in letters of intent.
- Metropolitan continued working with the State Water Contractors to fund and monitor important science studies and habitat projects in the Sacramento-San Joaquin Delta.
- Metropolitan hired a new Chief Sustainability, Resiliency and Innovation Officer to oversee its climate initiatives.

Achievement Scorecard

Conservation		
FY 2021/22 Total Water Saved ¹	1,070,000 acre-feet	
New Water Saved From Metropolitan Conservation Credits Program ²	6,000 acre-feet	
Water Saved From Existing Metropolitan Conservation Credits Program ³	210,000 acre-feet	
FY 2021/22 Investment		
Metropolitan Conservation Credits Program Investment ⁴	\$24 million	
Member Agency Conservation Investment ⁵	\$6 million	
Metropolitan Outreach & Education	\$7 million	
Cumulative Savings Since 1990		
Water Saved From Metropolitan Conservation Credits Program Only ⁶	3,691,000 acre-feet	
Metropolitan Conservation Investment (excluding funding by member agencies) ⁷	\$864 million	
Recycled Water		
FY 2021/22 Production ⁸	449,000 acre-feet	
Water Produced From Projects Receiving Metropolitan Funding	56,000 acre-feet	
Water Produced From Projects Without Metropolitan Funding (incl. Santa Ana River base flow) ⁹	393,000 acre-feet	
FY 2021/22 Investment		
Metropolitan Funding	\$8 million	
Cumulative Production & Investment Since Inception ¹⁰		
Production With Metropolitan Funding	3,029,000 acre-feet	
Metropolitan Investment	\$534 million	
Groundwater Recovery		
FY 2021/22 Production	119,000 acre-feet	
Water Produced From Projects Receiving Metropolitan Funding	59,000 acre-feet	
Water Produced From Projects Without Metropolitan Funding	60,000 acre-feet	
FY 2021/22 Investment		
Metropolitan Funding	\$8 million	
Cumulative Production & Investment Since Inception ¹¹		
Production With Metropolitan Funding	1,166,000 acre-feet	
Metropolitan Investment	\$190 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 2022	351,000 acre-feet	
Water Extracted Since Program Inception through June 2022	343,000 acre-feet	
Groundwater Replenishment ¹³		
FY 2021/2022 Delivery	24,000 acre-feet	
Cumulative Replenishment Delivery since 1984 through 2022	4,205,000 acre-feet	
Regional Summary		
	FY 2021/22	Cumulative
Metropolitan's Investment in Water Conservation, Recycled Water and Groundwater Recovery ¹⁴	\$39 million	\$1.6 billion
	331,000 AF	7,886,000 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



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. All cumulative investment figures are in nominal dollars.

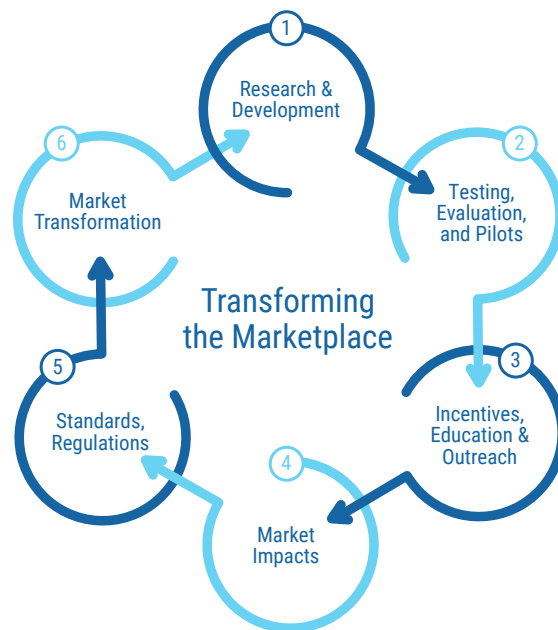
- Annual total savings include Metropolitan's Conservation Credits Program, code-based conservation achieved through Metropolitan-sponsored legislation; building plumbing codes and ordinances; reduced consumption resulting from changes in water pricing; and pre-1990 device retrofits.
- New water savings achieved through Metropolitan's Conservation Credits Program and from member-agency-funded programs initiated in fiscal year 2021/22.
- 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. The investment also includes \$7.36 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 2021/22 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 2021/22; cumulative production and investment reflect accounting reconciliation as data become available; annual regional production for recycled water includes an estimated 72,363 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 fiscal year 2021/22 reflects a revision in total cumulative expenditures due to a reconciliation audit. Cumulative conservation investment does not include outreach and education expenditures.



Metropolitan provides rebates for smart irrigation controllers that take the guesswork out of watering schedules.

Conservation

Conservation is critical to water supply reliability. It reduces the demand on imported supplies which are currently facing unprecedented shortage conditions and constraints. But to be successful, conservation needs to be less a reaction and more a habit.



To encourage efficient water-use behavior, Metropolitan has several initiatives that include financial incentives, as well as educational, advertising and outreach programs. We also support legislation, smart building codes and device and appliance standards that ensure continued water savings over time. There is no area in resource management where the success of a program depends more on collaboration than water conservation. Our achievements are directly tied to support from our member agencies, local and diverse communities, schools, businesses, and elected officials. Reaching underserved communities with targeted and accessible conservation programs has been a shared priority.

Metropolitan embraces a six-pronged approach to transform markets in support of our conservation goals as shown in the figure above. We work to drive innovation, evolve market products, 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.

The first step towards transforming markets is to learn through research and development (1). 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 (2). Once these technologies are in the hands of consumers, we continue to track water savings and gauge consumer satisfaction.

Catalysts like incentive programs, education and outreach bring new technologies to the attention of consumers (3). Rebates are offered to incentivize the use of water-efficient technologies and processes. Education and outreach calls attention to their availability. Targeted advertising, in multiple languages and across diverse platforms, bring the conservation message to a broader community. Impacts on the market are accelerated by these catalysts (4). 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 in the marketplace and can drive change that support sustained water savings (5). New device standards and building and municipal 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 with 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 (6).

During fiscal year 2021/22, Metropolitan's conservation efforts saved about 130,000 acre-feet of water. Rebates funded through Metropolitan's conservation program generated about 6,364 acre-feet of new water savings and will continue to produce more savings in years to come.

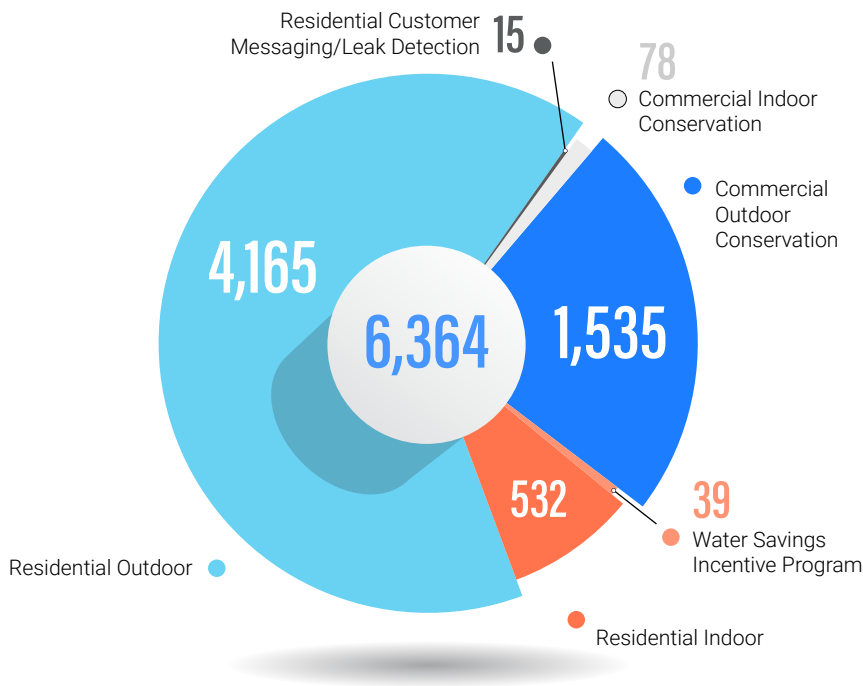
Since 1990, Metropolitan has invested \$864 million in conservation rebates and programs, of which approximately \$24 million was spent in fiscal year 2021/22. Metropolitan typically calculates rebates based on \$195 per acre-foot of water savings over the life of a device or program. Exceptions include the turf replacement program, rain barrels, cisterns, and multi-family housing toilet replacements. These programs are intended to spur market transformation and are calculated differently to provide a greater incentive. When available, Metropolitan supplements its conservation programs using state and federal grant funds.

Fiscal Year 2021/22 Conservation Program Highlights

- Metropolitan provided about \$24 million in rebates, landscape and irrigation classes, research, and outreach to help consumers reduce water use in their homes and businesses.
- Metropolitan processed over 24,600 applications for approximately \$10 million in regional rebate funding.
- Metropolitan created a municipal leak detection and repair grant funding program to reimburse member agencies and local water agencies in finding and repairing leaks in their distribution systems.

A slice of beauty in a waterwise El Sereno garden.

New Water Savings in Acre-feet Fiscal Year 2021/22



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 2021/22 included high-efficiency clothes washers, premium high-efficiency toilets, high-efficiency sprinkler nozzles, smart irrigation controllers, rain barrels and cisterns. Metropolitan estimates about 1,000 acre-feet of annual water savings from more than 55,900 residential conservation device rebates funded by Metropolitan in fiscal year 2021/22, which includes 19,200 water-saving high efficiency sprinkler nozzles.

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 4,800 acre-feet annually from these programs administered in fiscal year 2021/22.

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**HOW
WE SAVE
WATER.**



Carlos, Echo Park

WE'RE IN A DROUGHT

**OUR EXTREME
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MEANS WE
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COUNT.**

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Regional Incentives

Turf Replacement Program

Metropolitan's Turf Replacement Program provided rebates for the removal of about 4.9 million square-feet of lawn in fiscal year 2021/22, resulting in an estimated annual water savings of about 660 acre-feet. These savings represent an increase of 140 acre-feet over the previous fiscal year.

Premium High-Efficiency Toilets

Metropolitan continued its premium high-efficiency toilet rebates for underserved communities. The regional initiative 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 2021/22 will save about 130 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 430 acre-feet annually from clothes washer rebates in fiscal year 2021/22. 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 can 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 from both regional and member agency incentive programs of about 782 acre-feet annually from smart controller rebates in fiscal year 2021/22.

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 1,880 acre-feet annually from commercial conservation programs in fiscal year 2021/22. Qualifying commercial projects included turf removal and direct installation of high-efficiency toilets and high-efficiency sprinkler nozzles. Metropolitan estimates water savings of about 745 acre-feet from more than 400 applications to SoCal WaterSmart in fiscal year 2021/22. Metropolitan's member agencies and their agencies also implemented water conservation programs for commercial sectors using Metropolitan incentives. An additional 1,135 acre-feet of water were saved from member agency incentive programs.

Rebates on flow-monitoring devices help to put real-time leak information in consumer hands.

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 2021/22, Metropolitan estimates savings of about 280 acre-feet.

Research & Development

Innovative Conservation Program

Metropolitan’s Innovative Conservation Program provides funding for research that will document the water savings and reliability of innovative water savings devices, technologies, and strategies. About \$275,000 was provided as part of a joint 2020 program with SoCalGas.

The focus for the 2020 ICP was innovation in the commercial, institutional, and industrial sector. Twenty-eight project proposals from diverse entities such as universities, entrepreneurs, municipalities, non-profit organizations, and individuals were received and evaluated by a selection committee. Six projects were selected and received up to \$50,000 each in funding. Project topics included leak detection, commercial kitchen water use, and irrigation efficiency. Four projects have been completed with the remaining two scheduled to be completed in late fall 2022.

Long-Term Studies

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

- A completed pilot residential household fixture study in the City of Fullerton this past year that determined the concentration of water-efficient fixtures in homes and the associated amount of water used. Residential water use in this study was found to be lower on average than the proposed indoor state standard that will go into effect in 2025.
- An ongoing study, in two-year snapshots, of past turf removal program participants helps determine how many have maintained their sustainable landscaped yards, combined with a pilot study to provide unique GIS dashboards to Metropolitan’s member agencies to help them identify areas of turf that may not provide any functional benefits to the community.
- 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.



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**I BOUGHT
A FLOW
MONITORING
DEVICE THAT
DETECTS LEAKS
24/7 ON MY
PHONE**

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The Pure Water Oceanside groundwater recharge project, an LRP funding recipient, will purify recycled water and recharge local groundwater basins, ultimately providing for nearly a third of the City of Oceanside's water needs. The city is a member of the San Diego County Water Authority and provided this photo.

Since 1990, estimated potable per capita water use across Southern California has declined by nearly 40 percent.

New high-efficiency toilets were provided at no cost to income-qualified homeowners through a joint program of Metropolitan and SoCalGas.



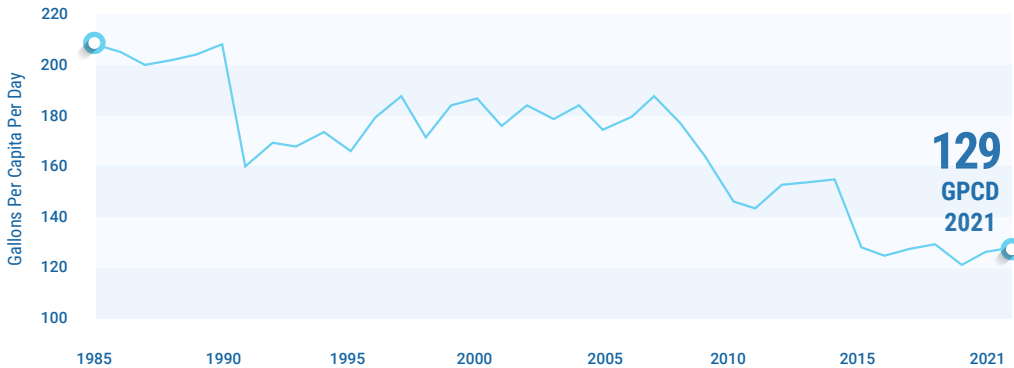
Expanded Collaboration with Southern California Gas Company

Metropolitan has collaborated with SoCalGas since the execution of a Memorandum of Understanding in 2014 that provided a vehicle to develop and implement joint water and energy efficiency incentive programs. The most recent collaborative effort resulted in an expansion of a direct install program that originally provided new high-efficiency clothes washers to income-qualified residents in Metropolitan and SoCalGas services areas at no cost. The program expansion now allows income-qualified homeowners and residents of disadvantaged communities to have new high-efficiency toilets, smart irrigation controllers, and low-flow showerheads and aerators installed by SoCalGas contractors free of charge. As of September 2022, approximately 3,075 homes have benefitted from this program since its inception in December 2021. There have been 4,278 high-efficiency toilets installed, 989 “smart” or weather-based irrigation controllers, and 23,660 low-flow showerheads and faucet aerators.

Water-Use Efficiency

Increasing regional water-use efficiency is a key component of Metropolitan’s water reliability strategy. Since 1990, Metropolitan’s estimated regional potable water-use declined from 209 gallons per capita daily or GPCD, to 129 GPCD in 2021. This 38 percent reduction and continued decline is attributed to regional investments in conservation programs, legislation, and long-term conservation program investments by Metropolitan. Further advances in water-use efficiency will be driven by regional investments in conservation programs, legislation and education and outreach campaigns that promote a strong water-use efficiency ethic.

Potable Per Capita Water Use Metropolitan's Service Area Calendar Year



Notes about the graph:

1. Calendar year data.
2. 2021 GPCD based on best available data (as of June 2022) and is subject to reconciliation. Data is received in 2022 for the previous calendar year.

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Royetta, Hawthorne

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Resource Specialist Krista Guerrero briefs news media on ways to care for trees and landscape in drought conditions.

Communications & Outreach

Our water supply system is being tested like never before. While climate change continues to threaten our supply resiliency, what remains certain is the need to conserve, reuse, and recycle as much as we can. Engaging Southern California's many diverse communities is not a one-size-fits-all approach, which is why Metropolitan fostered a strong presence on multimedia platforms as well as community-based outreach to nonprofit organizations, educators, elected officials and the news media.

Advertising & Outreach Campaign

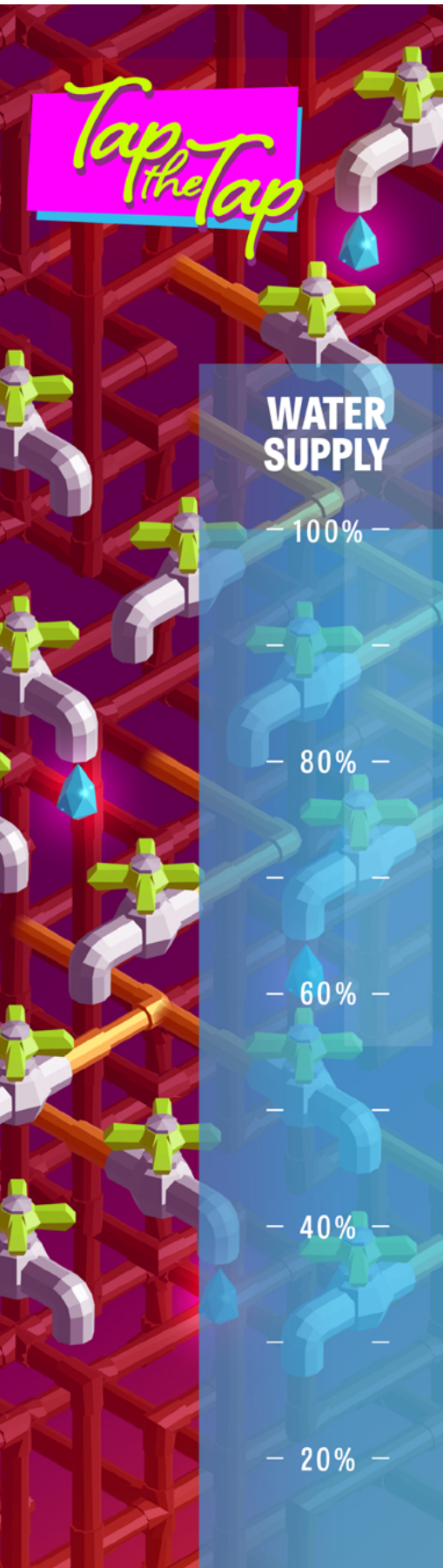
With three years of record-breaking drought conditions, Southern California's water supply resiliency is being tested like never before. In response, Metropolitan expanded its water conservation outreach efforts and advertising to call on residents, businesses, and communities to conserve even more.

August 2021 marked some major milestones. Gov. Newsom called for all Californians to voluntarily cut their water use 15 percent. The U.S. Bureau of Reclamation declared the first-ever shortage on the Colorado River for 2022, and Metropolitan's board issued a Water Supply Alert – the third in a four-tier framework. That indicates the level of urgency needed to save water in the region.

To communicate the urgency of this confluence of dire news, Metropolitan designed and executed in-house the multilingual outreach campaign that thanked the public for past conservation commitments and reengaged consumers in the conservation conversation. Metropolitan launched a multimedia advertising campaign to focus on drought and conservation.

The campaign ran on multiple platforms including social, digital, radio and out-of-home (billboards, transit shelters, in stores) and generated a total of 42 million impressions through the fall of 2021. Impressions measure the number of times a piece of content or advertisement is seen.

As historically dry conditions persisted through the fall and winter 2021 months, with a glimmer of hope from a wet December that soon faded, staff shifted to more direct messaging emphasizing the seriousness of the drought and urging residents, businesses, and communities to conserve even more. In October 2021, staff developed and produced two commercial spots titled, "Water Zombies" which urged residents not to be complacent about their water use and was promoted on digital platforms, generating nearly 200,000 views on YouTube. Starting in November 2021, a new phase of media buys on social, digital and radio directed viewers to a suite of water-saving resources and rebates on Metropolitan's conservation portal [bewaterwise.com](https://www.bewaterwise.com), as well as a toolkit.



Media platforms included several regional and national news outlets as well as ethnic radio stations throughout Southern California. Grassroots and community-based approaches were also part of the media plan, including Spanish-language advertisements in popular Latino grocery stores within the district’s service area. This phase of the campaign ran through April 2022 and resulted in 40 million impressions – and heightened awareness about the drought.

As dry conditions persisted towards the spring, the Governor in March 2022 issued an executive order calling on Californians to conserve by 20-30 percent. At this time, Metropolitan entered into a \$10.5 million three-year agreement with media agency GP Generate to leverage the district’s investment with highly visible multimedia buys. Polling research showed that Californians were willing to do more but wanted help and rebates to save more water. Staff used this research as a foundation for a new spring and summer campaign titled, “This Is How We Save Water” where single water-saving tips are presented by a diverse group of real people featured on advertisements. From switching to a California Friendly® landscape with the help of a rebate or using a flow monitoring device to detect leaks in real time, the tips highlight relatable water-efficient techniques.

With deteriorating hydrologic conditions and low storage available on the State Water Project system, it became clear that there was insufficient SWP water supply for Metropolitan to meet the demands of a portion of our service area. In late April 2022, Metropolitan’s Board declared a Water Shortage Emergency for the State Water Project Dependent Area, which consists of communities totaling roughly 6 million residents, and executed an Emergency Water Conservation Program. As part of the EWCP’s framework, Metropolitan provided financial assistance to member agencies within the SWP-dependent areas to aid them with water restriction compliance and amplify local messaging campaigns.

To help convey the urgency of this situation to affected consumers, Metropolitan developed a separate SWP-dependent areas outreach campaign that diverged from the regional conservation campaign. Both were launched in late April 2022 with unique messages and art, geo-targeting and media placement strategies.

Designed in-house to reach a different audience, this mobile game encouraged gaming app users to turn off the tap and learn ways to save water.

Metropolitan's 2022 spring and summer media plan totaled \$3.5 million and consisted of traditional platforms like radio, television and outdoor, to digital platforms like social, digital, and paid Google search. Staff scripted several television integrations on major networks to highlight the historically dry conditions while providing viewers with water-saving techniques to help reduce demands throughout the summer months. Staff also created new campaign landing webpages with downloadable toolkits in English, Spanish and Chinese featuring a variety of water-saving tips and rebate information, as well as all the multi-media assets. This in-house capacity provided cost efficiency by absorbing all creative design costs and allowing the full \$3.5 million budgeted to be directed to media buys. It also allowed staff to pivot and shift messaging quickly in response to evolving drought and supply conditions. Creative assets were translated to Spanish, Chinese, Korean, Vietnamese, Tagalog and Armenian for special placement in ethnic media outlets and locations. This phase of the media plan resulted in nearly 500 million impressions with over 200,000 visits to bewaterwise.com.

A new in-house produced commercial, which was translated to multiple languages, streamlines water-saving tips and rebate information in a quick and engaging 30-second spot for CTV, or connected television, which streams media content through smart devices and apps like mobile phones, tablets, ROKU, Chromecast, and YouTube. The spot generated 18 million views on YouTube alone.

The current media plan includes new media approaches like advertisements on screens at electric vehicle charging stations and gas station monitors as well as a gaming app advertisement featuring an interactive water-saving game on mobile devices, designed in-house, and titled, "Tap the Tap." A social media influencer campaign was included in the fiscal year 2021/22 outreach budget as a means of utilizing a diverse network of spokespeople and artists to carry the conservation message to different audiences. The influencer campaign launched in August 2022 with the popular Los-Angeles based all-girls punk rock band the Linda Lindas, comprised of artists ages 12 - 18. The first in a series of four videos created by Metropolitan staff posted to the band's Instagram account and generated 50,000 views in the first 48 hours. The influencer campaign is budgeted to continue into fiscal year 2022/23.

In addition to advertising, coordination with nursery industry partners is a key component of the district's communications strategy amid watering restrictions and intensifying drought. Staff continues to develop several outreach efforts with organizations like Armstrong Gardens, TreePeople, Altman Plants and Home Depot to provide residents with resources needed to maintain healthy gardens, lawns, and trees. Supplemental materials for commercial, hospitality and restaurant industries have also been developed. Metropolitan's public-facing drought microsite was launched May 2021 and continues to host the latest drought-related news coverage, media releases, presentations, and outreach materials available to member water agencies, media outlets and the public.

To complement our paid advertising campaign, we have the benefit of international, national, and local news attention on the west's dire water situation. In just two months of tracking – from July to August 2022 – we estimate our media team and management shared our conservation/drought messaging with 380 million views. The value of this news coverage is estimated at \$4.3 million, which is more than our budget for our entire year in paid advertising, generated in just two months.

This is
**HOW
WE SAVE
WATER.**



Monika, Torrance

WE'RE IN A DROUGHT

**WE'LL BE SHORT
OF WATER
WITHOUT
CONSERVATION.
I'M DOING MY
PART TO SAVE
NOW.**

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Media

As the severity of the drought in Southern California and across the Southwest has increased, so has media interest. Metropolitan has worked closely with reporters, producers and editors from local, regional, national and international media outlets to inform hundreds of articles and radio and TV news reports on the dire situation the region faces due to historic dry conditions and to remind audiences of the need to conserve.

Through our earned media efforts, including nearly 100 interviews with our staff experts, Metropolitan has reached a total audience of more than 600 million with our conservation message. This impressive coverage was garnered in part through several press conferences held over the last year to inform the public on critical actions taken by Metropolitan in response to drought, including declaring a Regional Drought Emergency, moving to a Water Supply Alert, and enacting an Emergency Conservation Program to preserve extremely limited State Water Project supplies. In addition, Metropolitan has partnered with the state and California Natural Resources Agency to further emphasize the vital importance of everyone doing their part to reduce water use.

Most of Metropolitan's press conferences have drawn reporters and photographers from all major local Spanish and English-language television and radio networks, as well as coverage from major newspapers such as The Washington Post, New York Times and Los Angeles Times.

Our media team has leveraged each of these opportunities to not only stress the need for immediate conservation, but also remind Southern Californians about the need to implement lasting water-efficiencies in their homes and businesses in response to climate change. In particular, the press office has pitched stories and emphasized in interviews the increasing popularity, success and impacts of our Turf Replacement Program and other available water-saving device and program rebates.

Metropolitan's Press Office has also ensured Southern California is part of the media discussion when major water-related announcements are made by the state and federal governments, ensuring local audiences are aware of regional impacts in broader issues, such as snowpack conditions and the state's conservation efforts. Staff has also drafted op-eds in local newspapers and distributed blogs on water supply conditions and calls for conservation.

Community Outreach

Being connected to the communities we serve is important to Metropolitan. We interact in a variety of ways through participation on workgroups, boards, research projects and educational efforts. We support the work of organizations in our six-county service area with sponsorships and opportunities to showcase water use efficiency programs. Being involved in the communities we serve allows Metropolitan to share our messages and listen to concerns about water quality, reliability, and equitable service. Our Community Partnering Program sponsored 24 conservation events and programs throughout Southern California, including Earth Day 2022 at Niguel Botanical Preserve. The event drew over 120 volunteers of all ages who gathered to plant drought tolerant and California native plants and learn about sustainable landscaping techniques. The Enrich LA Garden

Press conference at Theodore Payne Foundation brought together state Secretary for Natural Resources Wade Crowfoot and leaders from Metropolitan and the Los Angeles Department of Water and Power to discuss the severity of the drought.

Rangers Program designs, builds and maintains new garden spaces throughout the Los Angeles area. And as a proud sponsor, Metropolitan provided waterwise gardening content and other water-saving information to support conservation gardens and outreach efforts at various school campuses. Metropolitan also supported new Watershed Learning Exhibits at Agua Hedionda Lagoon Foundation which attracts over 25,000 visitors at their Discovery Center and has over 10,000 students enrolled in their Academy of Environmental Stewardship School Program as well as 60 preschool aged students weekly.

Education Programs

This year, Metropolitan worked with more than 50 partner agencies, school districts, county offices of education, non-profits, parents, as well as formal and informal educators to provide water-focused STEAM (Science, Technology, Engineering, Art, and Math) curriculum, grants, and outreach programs. Partners included the California Department of Water Resources, California Environmental Education Foundation, Southern California Edison, South Coast Air Quality Management District, Water Education Foundation, Los Angeles County Sanitation Districts, Association for Environmental and Outdoor Education, UCLA, USC, CSU-Los Angeles, CSU-Northridge, University of La Verne, and Occidental College.

Staff regularly met with Metropolitan member agencies to hold more than 100 events and engaged with nearly 14,600 students, teachers, parents and other participants through virtual activities, social media, and curriculum materials. Solar Cup™, the nation's largest high school solar boat race, completed its 20th year by virtually hosting 15 teams with more than 400 high school students. Teams completed seven challenges: Electrical/Circuits, Solar Panels, Water Conservation Public Outreach Campaign, and Robot-Powered Conservation Device. Students also attended a webinar on Green Careers. Metropolitan participated in and sponsored several teaching workshops including the Sustainable Enterprise teacher training which explored the concept of creating sustainable enterprises and 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 young people to embrace conservation behaviors through critical thinking and understanding of water issues affecting the Southwest. For example, the closing of Metropolitan's Diamond Valley Lake Visitor Center created an opportunity for staff to redevelop a field trip program. The new program, Discover DVL, includes a classroom visit, a visit to two DVL sites, hands-on water quality experiments, and two virtual games that include augmented reality questions. Staff also worked with the California Department of Water Resources to provide a presentation on DEIA (diversity, equity, inclusion, and access), Drought and Community Engagement to DWR's Water Education Committee, which is comprised of water educators from throughout California.

Finally, the distribution of 5,000 "Water is Life" student art calendars showcased creative work from K-12 students to help promote the value of using water wisely.

Metropolitan continued to help grow 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 also continued to proactively engage education partners through online classes, webinars, and virtual reality tours of the Colorado River Aqueduct. Finally, staff was interviewed by the Los Angeles Times for an article titled, "Kids Can Help California Save Water in the Drought. Try Making a Game of it."

This is
**HOW
WE SAVE
WATER.**



Joe & Victor, Alhambra

WE'RE IN A DROUGHT

**WE TEACH
OUR CHILDREN
THAT WATER
IS PRECIOUS
BY PLANTING
CALIFORNIA
FRIENDLY®
FLOWERS**

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The Fallbrook Groundwater Desalter Project received LRP funding and produces 3,100 acre-feet/year of treated groundwater with a newly constructed groundwater treatment plant, pipeline and upgrades to a pumping station.

Local Resources

Since 1982, Metropolitan has invested in local projects, which contribute to regional water supply reliability. Local resources are climate-resilient and lessen the region's dependence on imported supplies tied to snowpack conditions. The value of regional reliability is all the more elevated today in the face of critical shortage conditions on the two main sources of imported water supplies for Southern California.

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 2021/22, Metropolitan has invested \$724 million to fund 88 recycled water projects and 28 groundwater recovery projects that have produced about 4 million acre-feet of water. Additionally, Metropolitan is moving into the environmental review phase for a facility that may become the largest water recycling program in the country with Pure Water Southern California.

Water Recycling & Groundwater Recovery

In fiscal year 2021/22, Metropolitan provided about \$8 million for production of 56,000 acre-feet of recycled water for non-potable and indirect potable uses. Metropolitan financed another \$8 million to support projects that produced about 59,000 acre-feet of recovered groundwater for municipal use. Metropolitan's Board of Directors approved two new projects for participation in the Local Resources Program. Additionally, local agencies, through other funding sources, produced 393,000 acre-feet of recycled water that included wastewater discharged to the Santa Ana River that percolates into downstream groundwater basins, as well as 60,000 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.

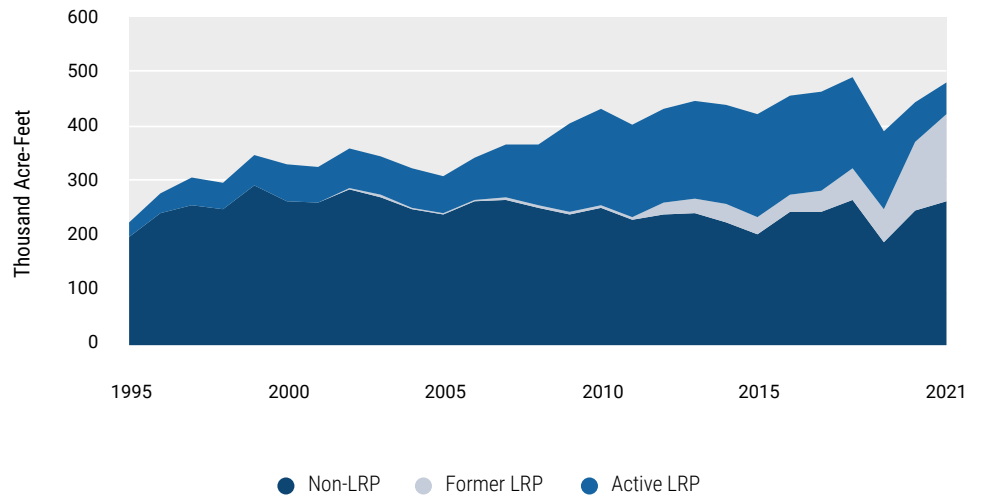
On-site Retrofit Program

Metropolitan's On-site Retrofit Program has an annual budget of \$3 million and 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 (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 2021/22, the On-site Retrofit Program has provided funding to 463 sites, replacing about 12,869 acre-feet per year of potable water with recycled water.



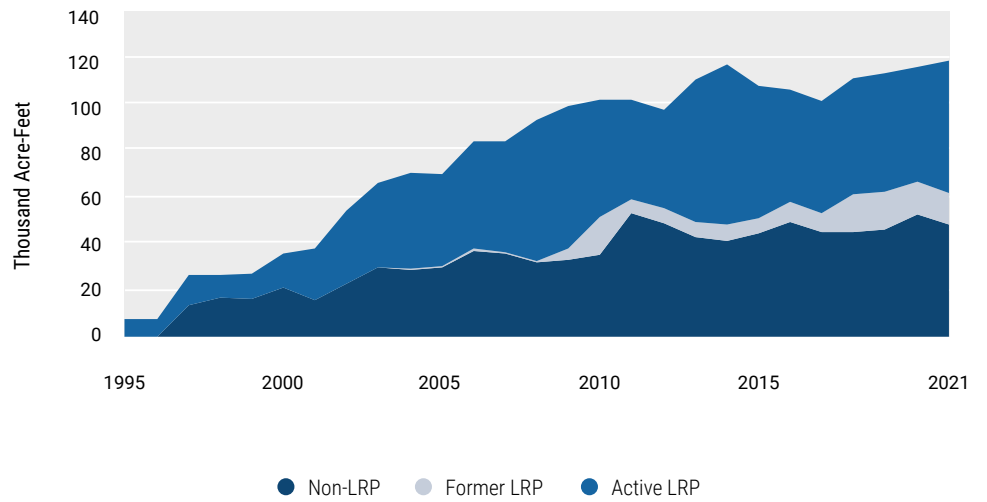
Recycled Water

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 2021/22, Metropolitan extracted about 18,500 acre-feet of previously stored water to support the ongoing drought effort.

Santa Margarita Water District's Las Flores Recycled Water Expansion Project extends their recycled water distribution system with 12,000 feet of new pipelines to serve the irrigation needs of 5,200 residents and was eligible for LRP funding. Photo courtesy SMWD.

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 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.

Pure Water Southern California

For nearly four decades, Metropolitan has encouraged development of local water supplies through the Local Resources Program that provides funding to member agencies. Pure Water Southern California 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.

Should a full-scale project move forward, Pure Water Southern California will produce and deliver up to 150 million gallons per day, or up to 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, starting with extensive research followed by operation of a pilot demonstration facility.

In fall 2019, Metropolitan began operation of the Advanced Purification Center, a 500,000 gallon-per-day demonstration facility. The facility was 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 also provides 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, Metropolitan's Board of Directors approved moving forward with the environmental planning phase of the program, a significant milestone. The notice of preparation for the environmental work is currently scheduled for release in September 2022. Metropolitan staff are investigating opportunities to accelerate the program to bring some portions of the project on early to align with federal and state funding opportunities and local partner needs.

The current schedule is for the environmental planning phase to be completed in early 2024 with the first phase of construction completed by early 2032. To accelerate the project, Metropolitan's board of directors supported legislation that would allow Metropolitan to utilize alternative project delivery, which could shave some time off the overall schedule. This legislation was signed by the Governor in September 2022.

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Teresa, West Hollywood

WE'RE IN A DROUGHT

**IT'S CLEAR THE
DROUGHT IS
VERY REAL. THE
TIME IS NOW TO
SAVE WATER.**

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Pure Water Southern California Demonstration Plant is open for virtual and in-person tours in English and Spanish.

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. Ultimately, 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.

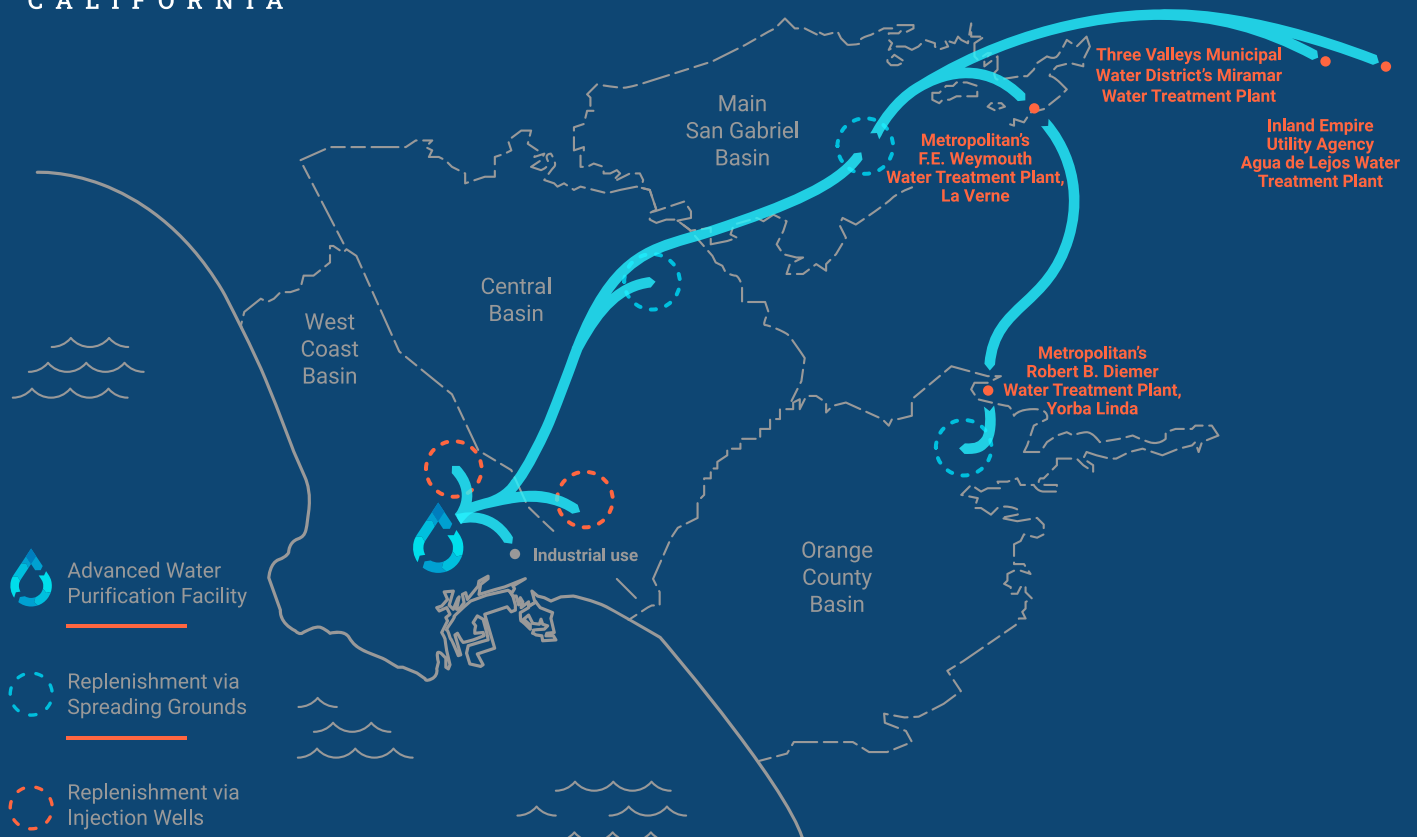
In 2020, member agency partners and groundwater basin managers expressed their support for the program through executed letters of intent. Metropolitan has executed letters of intent with the Los Angeles Department of Water and Power, the city of Torrance, the city of Long Beach, Central Basin Municipal 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.

In December 2020, Metropolitan and Southern Nevada Water Authority executed a funding agreement for the environmental planning phase of the program. In 2021, Central Arizona Project and the Arizona Department of Water Resources executed a similar agreement. In 2022, Metropolitan and the San Gabriel Valley Municipal Water District, a State Water Project contractor, entered a letter of intent. Metropolitan is collaborating with them to discuss mutual use of facilities, potential transfers or exchanges, and improved reliability for both agencies. Through these unique partnerships, the program is enabling diverse groups of agencies to work together to solve the Southwest's water challenges.



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Metropolitan's Investments in Future Supply Actions Funding Program

	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

Future Supply Actions

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 Funding Program is one of Metropolitan's vehicles for promoting sustainable approaches to One Water local supply development. Under the program, Metropolitan co-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 2019, Metropolitan has co-funded 34 pilot tests, demonstration studies, and white papers. All but one of the 14 studies approved in 2019 have been completed. FSA Funding Program study reports, presentations and webinars are available here:

<https://www.mwdh2o.com/funding-opportunities>.

In 2018, Metropolitan also co-funded six potable reuse projects and one agricultural reuse study with the Water Research Foundation under the FSA Funding Program. Metropolitan's nearly \$1 million in co-funding supports WRF's \$8 million Advancing Potable Reuse Initiative and matched \$3.5 million in State Water Resources Control Board grant funding. WRF completed two of the studies in fiscal year 2021/22. The table above summarizes Metropolitan's FSA Funding Program investments.

The El Toro Water District Phase II recycled water expansion received LRP funds to add to the existing distribution system.

Stormwater

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, monitoring, and 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 Direct Use Pilot and \$7.5 million for the Recharge Pilot). Projects were selected via an online application process, which opened January 1, 2020, and closed to new applications on December 31, 2021. During the application period, Metropolitan received 12 pilot program applications for a total of \$8.8 million (\$1.3 million for the Direct Use Pilot and \$7.5 million for the Recharge Pilot). These projects will begin to collect stormwater data in the 2022/23 rainy season.

In addition to the pilot programs, Metropolitan has participated in other technical studies to advance the understanding of stormwater in the service area. Metropolitan has participated in a study led by Los Angeles County Public Works and the U.S. Bureau of Reclamation to evaluate the water supply benefits of low impact development projects such as green streets, vegetative swales, and dry wells. In addition, Metropolitan has partnered with Accelerate Resilience Los Angeles in a study to evaluate the multiple benefits of stormwater.



A feasibility study looking at cost-effective disinfection treatment to meet advanced water treatment regulations was undertaken by the San Diego County Water Authority and subagency Padre Dam Municipal Water District, receiving nearly half its \$170,000 study cost from Metropolitan's FSA Funding Program.

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WATER.**



Socorro, Irvine

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**NOW IS THE
BEST TIME
TO APPLY
FOR A TURF
REPLACEMENT
REBATE TO SAVE
WATER FOR A
LESS THIRSTY
LANDSCAPE
LATER.**

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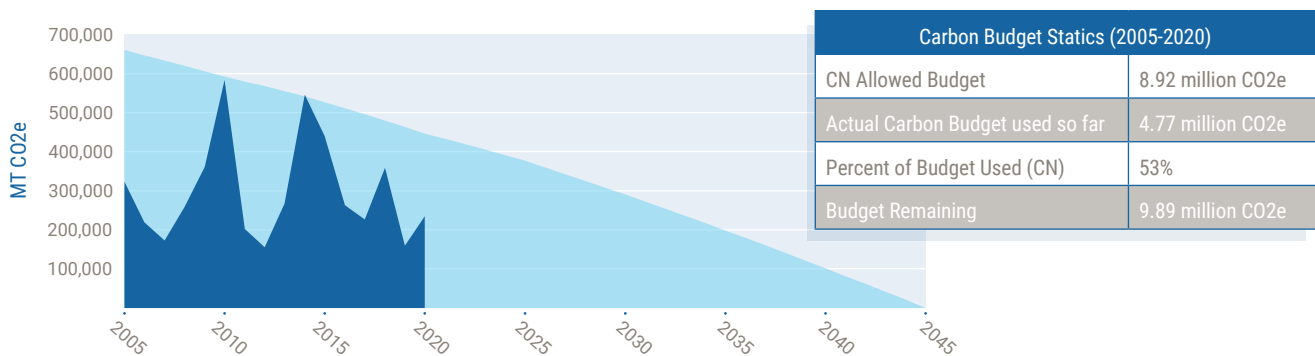


Metropolitan's Diamond Valley
Lake in springtime.

Climate & Watershed Initiatives

Metropolitan’s responsibility is not just to ensure water supply reliability and quality, but to do so in an environmentally responsible way. We focus on a range of issues that include watershed health, stormwater collection, salinity management, and habitat restoration and preservation – all impacted by climate change. Water quality protection at the source for our imported supplies is also a priority and one made especially difficult in drought conditions that have consequences for ecosystems and human communities alike.

Metropolitan GHG Emissions 2005 - 2020 Compared to the Carbon Budget



Climate Action Plan

We embrace the leadership role we have within California by establishing greenhouse gas reduction goals that exceed those set by the state. The goals include reducing emissions by 40% by 2030 and achieving carbon neutrality by 2045. Metropolitan’s Climate Action Plan sets tangible targets for reducing GHG emissions. This program is executed in two implementation phases, each with nine strategies, focusing on, but not limited to:

- Renewable Energy and Energy Efficiency
- Zero Emission Fleet
- Emission from Operations and Construction
- Carbon Sequestration

The CAP complements Metropolitan’s existing long-range planning efforts, including the Integrated Water Resources Plan, Energy Sustainability Plan, and Capital Investment Plan.

Climate Initiatives

To oversee its climate initiatives, Metropolitan recently hired a new Chief Sustainability, Resiliency, and Innovation Officer. Metropolitan’s investments in renewable energy resources include the purchase and generation of hydroelectric power, the installation of photovoltaic arrays at our Jensen, Skinner and Weymouth Water Treatment Plants, as well as battery energy storage systems.

GHG Tracking Protocol

Metropolitan’s GHG emissions vary due to the amount of water pumped from the Colorado River to meet the demands of Southern California. Higher Colorado River pumping generally correlates to dry years with low SWP allocations. Metropolitan has a Carbon Budget of 9.89 million CO2e in 2020 to achieve carbon neutrality by 2045 by offsetting all carbon emissions. An online carbon dashboard will track progress in our commitment to transparency.



Panoramic view of Southwestern Riverside County Multi-Species Reserve.

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.

Southern California Water Coalition

Metropolitan remains actively involved in the Southern California Water Coalition Stormwater Task Force. 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 has provided updates on the Pure Water Southern California project. In 2022, the task force supported a steering committee led by Las Virgenes Municipal Water District for the development of a stormwater white paper and pilot study to implement smart meters in the Los Angeles area to evaluate real-time dry weather and wet weather diversions.

Southern California Salinity Coalition

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 currently holds the chair position on the SCSC's board. SCSC accomplishments in fiscal year 2021/22 include:

- Continuing a study on the salinity benefits of desalinated seawater in San Diego County
- Funding the Orange County Water District's pilot study of Flow-Reversal Reverse Osmosis for potable reuse.
- Funding the Los Angeles County Sanitation District's investigation of Ocean Discharge Requirements.
- Granting a graduate fellowship to a UC Riverside student investigating an innovative treatment train for inland brackish water reverse osmosis desalination brine.
- Presenting on salinity management to Southern California stakeholders
- Supporting salinity management on the Colorado River through letters of support for urging U.S. Bureau of Reclamation 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 13,500 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.

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 allowed.

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.



Biking trails are part of the recreational joys of Diamond Valley Lake.

Colorado River

The Lower Colorado River Multi-Species Conservation Program

This program is a comprehensive restoration effort along the Colorado River including the states of Arizona, Nevada, and California. It 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. With 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 2021/22, about 6,840 acres of habitat have been created or restored, and approximately 200,100 native fish have been stocked and reintroduced into the Colorado River.

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 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 most of fiscal year 2021/22 due to ongoing concern over a March 2019 seismic event that halted normal injection well operations, in June 2022 U.S. Bureau of Reclamation did initiate a six-month test of the well at two-thirds capacity, conditional on wellhead pressures and nearby seismic activity remaining within acceptable limits. If the test concludes successfully in November, Reclamation will examine test data and data from ongoing seismic hazard and risk studies to evaluate whether the well can safely be restarted at full capacity soon thereafter, so that brine injection can continue until a well replacement alternative is implemented.

Additionally, in fiscal year 2021/22, the Forum initiated work on the 2023 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. 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 2021/22, this program conducted routine water quality monitoring for drinking water quality constituents throughout the Delta, operated five real-time water quality monitoring stations, completed 3-week water quality forecasts, and continued a monitoring study to evaluate the degradation of an herbicide used to treat aquatic weeds in Clifton Court Forebay and O'Neill Forebay. The program also continued sampling for constituents of emerging concern along the Delta Mendota Canal, due to concerns with treated wastewater input flows. Due to the CEC data collected by MWQI and submitted to the regulatory agencies, the wastewater agencies are now required to conduct CEC monitoring in the future. Work also started on a new project to create a water quality database for turn-ins to the California Aqueduct.

Two MWQI reports were also completed: the 2021 State Water Project Watershed Sanitary Survey and a User Guide to Estimate Salinity Constituents in the Delta. The user guide presents a simplified, "user friendly" modeling approach for estimating ionic concentrations such as bromide and chloride from specific electrical conductance and total dissolved solids data in the Sacramento-San Joaquin Delta and San Francisco Estuary. Both reports are posted on the Real Time Data and Forecasting info website (rtdf.info).

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 2021/22, the Delta RMP conducted water quality monitoring studies for pesticides and aquatic toxicity, mercury, cyanotoxins and constituents of emerging concern.

California EcoRestore

Metropolitan continues to participate 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. This year, the California EcoRestore partners kicked off construction of the Big Notch Project located in the Fremont Weir State Wildlife Area in Yolo County. The Big Notch Project will create a new path for salmon and sturgeon to access the Yolo Bypass floodplain.

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Metropolitan's Bouldin Island in the Delta.

When the project is finished in late 2023, the gated passage, or notch, will be opened when the Sacramento River is high enough to flow into the Yolo Bypass floodplain. The water will create shallow-water habitat for fish to easily migrate through the area. Juvenile salmon will be able to feed in a food-rich area for a longer time, allowing them to grow more rapidly in size, improving their chances of survival as they travel to the Pacific Ocean. Adult salmon and sturgeon will benefit from improvements that will reduce stranding and migratory delays due to passage barriers. Metropolitan will continue to work with the Technical Team to develop adaptive management strategies that will enhance the success of the project and ensure the project is meeting the goals of the Biological Opinion.

Reorienting to Recovery Salmon Project

The Reorienting to Recovery Project was initiated in 2020 by members of the Collaborative Science and Adaptive Management Program, a consortium of State of California and federal resource management agencies, Public Water Agencies, and Non-Governmental Organizations. The Project's purpose is to develop an effective and implementable strategy for recovering listed and non-listed salmon in California's Central Valley watershed while considering other social, ecological, and economic interests in the region. In fiscal year 2021/22, Phase 1 of the Project was completed which included engaging with scientists to develop a salmon recovery definition framework, and Phase 2 was initiated to solicit input from the broader community on current and planned salmon recovery projects.

Butte Sink and Sutter Bypass Project

Metropolitan is a funding partner on the Butte Sink and Sutter Bypass Project. During fiscal year 2021/22, 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. In fiscal year 2021/22, Metropolitan collaborated with state and federal agencies and researchers from UC Davis and U.S. Geological Survey to initiate studies on the suitability of using ponds on the islands to support Delta smelt supplementation efforts. Metropolitan also completed Phase 1 of the Delta Island Adaptations project, funded by a Proposition 1 planning grant. The planning project includes the evaluation of opportunities for island-wide improvements that include subsidence reversal, sustainable agricultural practices, carbon sequestration, water quality improvements, and habitat restoration. The objective of this effort is to provide science-based planning for potential land uses on an entire island owned by Metropolitan that meets the Delta Plan co-equal goals using creative and innovative solutions for subsided Delta islands.



Mule deer at Shipley Reserve.

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 Dec. 12, 2022 to receive public and stakeholder input. Comments received at the hearing are on file at Metropolitan and are available upon request.

Glossary of Terms

CAP	Climate Action Plan
CEC	Constituents of Emerging Concern
CO2e	Carbon Dioxide equivalent
CRA	Colorado River Aqueduct
DVL	Diamond Valley Lake
Delta RMP	Delta Regional Monitoring Program
DWR	Department of Water Resources
EWCP	Emergency Water Conservation Program
FSA	Future Supply Actions
FEIS	Final Environmental Impact Statement
GHG	Greenhouse Gas
GIS	Geographic Information System
GPCD	Gallons Per Capita Daily
ICP	Innovative Conservation Program
IRP	Integrated Water Resources Plan
LRP	Local Resources Program
MSSC	Multi-State Salinity Coalition
MWQIP	Municipal Water Quality Investigation Program
RTDF	Real Time Data and Transfer
Sanitation Districts	Los Angeles County Sanitation Districts
SCSC	Southern California Salinity Coalition
SoCalGas	Southern California Gas Company
SWP	State Water Project
The Forum	Colorado River Basin Salinity Control Forum
WSIP	Water Saving Incentive Program



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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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About Metropolitan

The Metropolitan Water District of Southern California is a state-established cooperative of 26 member agencies - cities, municipal water districts and one county water authority - that directly or indirectly serve 19 million people in six counties. Metropolitan imports water from the Colorado River and Northern California to supplement local supplies and helps its members develop increased water conservation, recycling, storage and other resource management programs.

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