

CALIFORNIA

2023

# WATER

LONG BEACH / SOUTH BAY EDITION

## DELTA CONVEYANCE NEARS MILESTONE MOMENT

**WRD: A Great Year  
for Replenishment**

**Long Beach Utilities:  
Plans Resilient Future**

**LADWP: Focus on  
Groundwater**



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# Delta Conveyance: A Promise for a Sustainable Future

In this latest edition of California Water, we explore a pivotal topic crucial to the future of our state: the Delta Conveyance Project.

This groundbreaking initiative is set to modernize California's water transportation, ensuring a brighter and more sustainable future for residents of Los Angeles County and beyond.



Charley Wilson

At the heart of this transformative endeavor lies a vision to upgrade a crucial section of the State Water Project. This project serves as the lifeline for our state's water supply, supporting the needs of nearly 27 million Californians – including water users in Los Angeles County.

The Delta Conveyance Project will construct a state-of-the-art tunnel, a marvel of engineering, to transport water supplies underneath the fragile Sacramento-San Joaquin Delta ecosystem rather than through it.

The significance of this endeavor cannot be overstated. Not only will it ensure the delivery of clean, reliable, and affordable water for generations to come, but it also represents a steadfast commitment to the preservation of our precious natural resources.

The environmental planning process is ongoing and underscores the state's dedication to safeguarding the delicate balance of our ecosystems while addressing our water needs.

As we explore the intricacies of this groundbreaking project and other critical Los Angeles County infrastructure projects in the following pages, we invite you to join us in celebrating this momentous step forward for California's future.

Delta Conveyance is not just an investment; it's a promise – a promise that we will meet the challenges of the future head on and ensure a sustainable and prosperous California for generations to come.

**Charley Wilson**  
Executive Director

*The Southern California Water Coalition, a nonprofit, nonpartisan public education partnership is dedicated to informing Southern Californians about our water needs and our state's water resources.*



## Regional Water Agencies Await Delta Modernization Report

By Elizabeth Smilor  
Special Sections Writer

By the end of the year, the ongoing effort to modernize water conveyance through the Sacramento-San Joaquin Delta for the State Water Project will reach another milestone. The California Department of Water Resources will release the Final Environmental Impact Report (EIR) of the Delta Conveyance Project.

The Final EIR will describe potential environmental impacts, identify mitigation measures that would help avoid or minimize impacts and provide responses to all substantive comments received on the Draft EIR. The draft underwent a 142-day comment period, during which 729 letters and other forms of communications, and 7,300 individual comments were received, according to DWR.

"Metropolitan Water District of Southern California's Board is leading the way on developing a Climate Adaptation Master Plan for Water to respond to climate whiplash and provide resiliency and reliability for all with no one left behind. Southern California's water supplies from the State Water Project play a critical role in our water reliability. As we experience the impacts of a changing climate and weather extremes, we must move and store water when it is available," said Metropolitan General Manager Adel Hagekhalil. "However, stabilizing and

*"As we experience the impacts of a changing climate and weather extremes, we must move and store water when it is available."*

**Adel Hagekhalil**  
Metropolitan  
General Manager

protecting the Bay-Delta is also a critical element in our future. We look forward to reviewing the Department of Water Resources' Final Environmental Impact Report for the Delta Conveyance Project, so that Metropolitan can fully evaluate the project and support our board's decision-making process."

The proposed Delta Conveyance Project (DCP) would move water from the North Delta through two intakes at a maximum capacity of 6,000 cubic feet per second to a single, underground tunnel running east of the Delta to the existing Bethany Reservoir in the South Delta, which is on the California Aqueduct.

"The Delta Conveyance Project is one of California's key climate adaptation projects. The project will secure water for more than 27 million California residents and 750,000 acres of farmland by fortifying and updating the State Water Project infrastructure – the backbone of California's water network," said DWR Director Karla Nemeth. "Reliable water supplies from the Delta are critical to right sizing recycled water projects and making sure that groundwater basins are clean and sustainable into the future."

The State Water Project (SWP) supplies 30% of Southern California's water. The Delta is at the center of the SWP, 50% of California's water supply flows through the Delta and is delivered to three out of five Californians. Southern California water agencies contract either directly with the SWP as State Water Contractors or as members of Metropolitan for SWP allocations.

"Improving the Delta Conveyance is akin to fixing a leaky roof on your house – neglect it, and the damage increases; address it, and protect your home and family. As Californians, we need to safeguard our water future by modernizing this vital Delta infrastructure," said Executive Director Charley Wilson of the Southern California Water Coalition (SCWC), a nonprofit, nonpartisan public education partnership dedicated to informing Southern Californians about water needs and resources.

Every regional water agency has a water portfolio that defines water supply sources and uses. These portfolios might include recycled water, groundwater and imported water in differing percentages. Water managers stress that every piece of a portfolio is important for a resilient water supply.

"The Delta Conveyance Project is not the only project that water agencies need to make investments in," said General Manager Jennifer Pierre of the State Water Contractors (SWC), a non-profit that represents 27 public water agencies. "There is a clear need for local and regional projects, water conservation, storage projects – those things are necessary. However, the volume of water and the cost at which it can be provided by the SWP cannot be replaced by smaller projects. For most of our members, this is the most cost-effective way to protect their water supply portfolio."

Santa Clarita Valley Water (SCV), a state water contractor, serves nearly 300,000 customers and up to 50% of that supply is imported from the SWP. SCV invests in both local and imported supply projects, including conservation, groundwater banking, surface storage and the DCP.

"While no one source or project can meet the full range of water supply needs, and our focus over the years has been on creating a more diverse water supply portfolio, the State Water Project is absolutely critical to ensuring our region has reliable water supplies," said SCV General Manager Matt Stone. "In addition to addressing the challenge of relying on aging infrastructure, the proposed project would protect against



*"Reliable water supplies from the Delta are critical to right sizing recycled water projects and making sure that groundwater basins are clean and sustainable into the future."*

**Karla Nemeth, DWR Director**

At left, the Department of Water Resources (DWR) has begun installing a bioacoustic fish fence at the junction of the Sacramento River and Georgiana Slough in Sacramento County. Once fully installed, the fence will help sensitive fish species, including Chinook salmon, safely traverse through the Delta. Above, a windy stretch of the East Branch California Aqueduct in Palmdale on May 12. The aqueduct brings water from the Sacramento-San Joaquin Delta to Southern California as part of the State Water Project.

*Photos courtesy of the California Department of Water Resources.*

climate-driven threats and natural disasters that could disrupt water delivery throughout the state."

Geologists at the U.S. Geological Survey estimate there's a 72% chance of a 6.7 or greater magnitude earthquake in San Francisco Bay area in next 20 years. This type of seismic event could cause the Delta levees to fail and lead to a six- to 12-month delivery outage. Climate change is not only altering weather patterns to a "whiplash" of extremes, it's raising the snowline in the Sierra Nevada Mountains where two-thirds of the state's water originates, and it's raising the sea level, making salt water intrusion into the Delta more likely.

Las Virgenes Municipal Water District, a Metropolitan member agency that provides water to 75,000 residents in Agoura Hills, Calabasas, Hidden Hills, Westlake Village, and unincorporated areas of western Los Angeles County, is investing more than \$360 million in a state-of-the-art potable reuse system called the Pure Water Project Las Virgenes-Triunfo to capture the remaining portion of the region's treated wastewater and purify it. Nevertheless, Las Virgenes' region remains reliant on supplies from the SWP to support its recycling.

"The Delta Conveyance Project is the solution and will shore up the reliability of the State Water Project for the 27 million California residents who rely on it," said Los Virgenes General Manager Dave Pedersen. "The project will also enhance the health of the delta ecosystem by improving the flow regime through the delta with a system of dual conveyance. Doing nothing is not an option."

If the Delta Conveyance Project was operational during the high rain events in January, DWR could have moved 228,000 acre-feet of water into the San Luis Reservoir. That's enough for 2.3 million people for one year or nearly 800,000 households for one year.

"The atmospheric river storms of early 2023 made clear the importance of our efforts to modernize our existing water infrastructure for an era of intensified drought and flood," said Nemeth. "What we need to be positioned to do in California is move water when it's available because moving and storing that water is going to help California weather longer and deeper droughts." ○



At left, the Tujunga Spreading Grounds where enhancements completed by LADWP in 2021 doubled the annual stormwater capture capacity. Above, a rendering of the Los Angeles Groundwater Replenishment Project (LAGWR), which will produce purified recycled water to recharge the San Fernando Basin. At right, the North Hollywood Central response action groundwater treatment system. *Photos courtesy of LADWP*



# Maximizing Our Groundwater Supply

## LADWP Projects Focus on the San Fernando Basin

**R**ecognizing the importance of a sustainable and resilient local water supply, the Los Angeles Department of Water and Power (LADWP) is employing innovative solutions to remediate and replenish the San Fernando Groundwater Basin (SFB), a vital local water resource for the City of Los Angeles (City). The SFB has played an important role for the City, as it has long been a resource the City depends upon to store and use water, especially during drought periods.

With the potential to supply up to 1 million Angelenos with water annually, the SFB is a cornerstone of the City's water supply. However, the SFB has faced several challenges in recent years most notably due to groundwater contamination, preventing the City from fully utilizing this important asset. To remedy this, LADWP has taken proactive steps to maximize this important resource, exemplifying the City's commitment to sustainable management, environmental stewardship, and development of new water resource supplies.

**Importance of Groundwater to the City of L.A.**

The City encompasses an area of 472 square miles with a population of nearly 4 million people and an annual average water consumption of approximately 161 billion gallons. Although local groundwater provides approximately 8% of the City's total water supply on average, the City has historically been able to rely on this resource for nearly 23% of the City's total supply in drought years such as in the 1980s and 90s. To restore and ensure long-term health and water quality of the basin to maximize beneficial use, LADWP has invested heavily in groundwater remediation and stormwater

capture, and is now spearheading the Los Angeles Groundwater Replenishment Project (LAGWR), a potable reuse project that will produce purified recycled water to recharge the SFB. "This project is one of the key strategies to help reduce the purchase of imported water and improve our water reliability by developing drought-proof, resilient, local supplies to help meet long-term sustainability goals and address challenges brought on by climate change," said Anselmo Collins, LADWP Senior Assistant General Manager and Head of the Water System.

**Groundwater Contamination and Remediation**

To highlight the impacts of the groundwater contamination in the SFB, over 70% of the LADWP groundwater production wells in the SFB are impacted by legacy contamination. A majority of the groundwater contamination is found in the eastern portion of the San Fernando Valley, likely caused by improper storage, handling, and disposal of hazardous chemicals used in the aircraft manufacturing industry, as well as commercial and heavy industrial activities dating back to the 1940s. This groundwater contamination consists of chlorinated solvents such as trichloroethylene (TCE), tetrachloroethylene (PCE) and 1,4 dioxane.

To address the contamination in the SFB, LADWP has invested over \$700 million in groundwater remediation. By 2024, several groundwater remediation projects will be completed to restore the beneficial use of the SFB. These remediation projects are: North Hollywood West; North Hollywood Central; and Tujunga response action groundwater treatment systems. Together, they

can treat approximately 100,000 acre-feet per year (AFY) utilizing pump and treat systems with technologies such as Ultraviolet Advanced Oxidation Process (UV AOP) treatment and granulated activated carbon.

**Groundwater Replenishment**

In addition to remediating the SFB, LADWP is putting forth a large effort to replenish the basin and ensure basin health. LADWP intends to do this by utilizing both recycled and storm water. One of the major recycled water projects is the LAGWR Project, which will produce up to 21,000 AFY of purified recycled water for percolation into the SFB at the Hansen Spreading Grounds, equivalent to the potable demand of 250,000 residents.

Expected to be placed in service by 2028, the LAGWR Project is one of the largest recycled water projects in the State, and upon completion will provide a new drought resilient water supply for the City of Los Angeles.

Purified recycled water will be produced and supplied by the planned Advanced Water Purification Facility (AWPF) to be constructed at the Donald C. Tillman Water Reclamation Plant, which is a joint effort between LADWP and Los Angeles Sanitation and Environment (LASAN). This collaborative effort between LADWP and LASAN is a great example of city agencies working together to make progress toward the City's water recycling goals.

The state-of-the-art planned treatment process is proven to meet regulatory standards, remove and inactivate pathogens, and remove chemicals of emerging concern using a combination of technologies such as microfiltration, reverse osmosis, UV AOP, and chemical injection. In addition to the treatment, the AWPF will feature an educational center, inviting the public to tour and interact with educational material on potable reuse. When completed, this project will further strengthen LADWP's ability to provide its residents and businesses with a safe, reliable, and high-quality water supply.

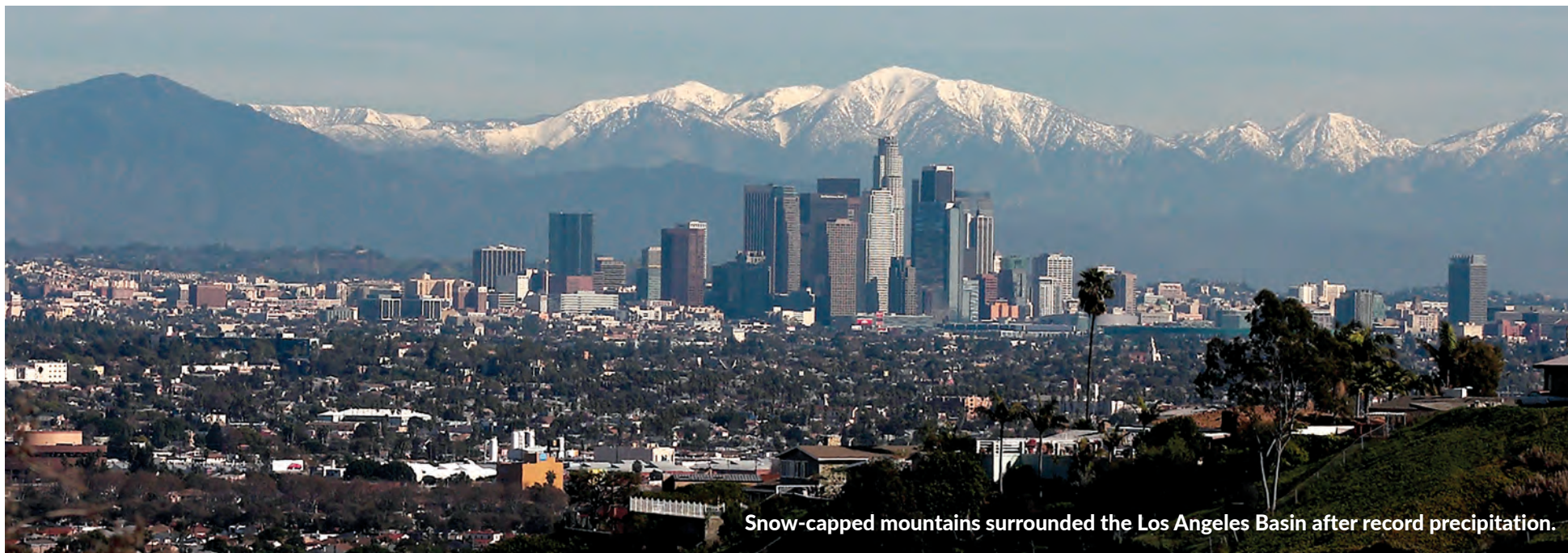
Furthermore, LADWP has been working to comprehensively increase stormwater capture throughout the City, by enhancing infiltration into groundwater basins and by onsite capture and reuse of stormwater for landscape irrigation.

Stormwater runoff from urban areas is an underutilized local water resource. Within the City, a considerable amount of stormwater runoff is directed to storm drains and ultimately channeled into the ocean. As a result of increased urbanization, local groundwater basins that could be replenished by stormwater are receiving less recharge than in previous years.

In Fall 2021, LADWP completed the Tujunga Spreading Grounds Enhancement Project and doubled the annual stormwater capture capacity of the spreading grounds. This expansion has turned out to be an extensive benefit to the City in light of the significant rainfall that was captured earlier this year and resulted in the largest capture of stormwater in the City's history. In 2023, the City captured over 150,000 acre-feet of stormwater, which is enough water for approximately 600,000 single family houses. LADWP will continue to augment stormwater capture to further its mission of providing a safe, reliable, and environmentally responsible water supply for the City of Los Angeles.

As the challenges for dependable water supply continues to evolve – maximizing use of groundwater basins, and especially the SFB, provides LADWP the flexibility to respond to short-term needs and opportunity to develop long-term water management strategies. ○





Snow-capped mountains surrounded the Los Angeles Basin after record precipitation.

# It's a Great Year for Replenishment!

## Record Amounts of Stormwater Captured in the Region

**A**fter some of the driest years on record, California finds itself at the opposite end of the boom-and-bust cycle of a prolonged drought that has come to characterize the State's water resources. While this climate whiplash caused storm damage and fears of spring snowmelt flooding, it also provided one of the best years for groundwater replenishment in WRD's history.

Record-setting rainfall surpassed the yearly average of stormwater capture in the WRD service area with over 76 billion gallons captured. This exceptional year has allowed our groundwater basins to rebound, which creates resiliency in our water supply and can buffer against future dry years.

Through our partnership with Los Angeles County Public Works, we work hard to get as much water into the ground as safely as possible each year. We use stormwater when we can and have recycled water ready to meet the rest of our replenishment needs.

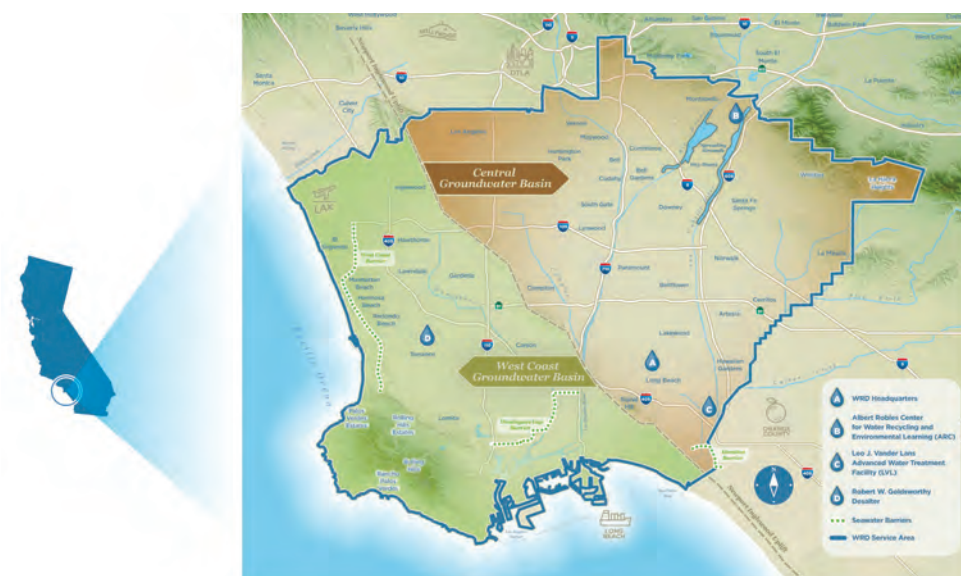
### A Record Year for Precipitation

Locally, the storms of 2022 and 2023 resulted in the L.A. area receiving record-breaking rainfall amounts and an abundance of snow in some of our local mountains.

This has been excellent news for WRD as we manage the groundwater in the Central and West Coast Basins. The four million people who reside in the WRD service area consume around 72 billion gallons, or 220,000 acre-feet, of groundwater annually, accounting for about 50% of their water demands.

The WRD Precipitation Index reports 25.72 inches of rainfall in the WRD service area for the 2022-23 Water Year, which is 168% of normal.

Regionally, the San Gabriel Watershed dams have also benefited from the record-breaking precipitation. For example, at the end of March 2023, the Cogswell, San Gabriel, and Morris Dams were at 104%, 85%, and 73% capacity, respectively. The steady release of water from these upstream reservoirs continued flowing through June, providing a continued source of recharge to our groundwater basins. Further releases throughout the fall are also expected.



The WRD service area in southern Los Angeles County is 420 square miles and includes 43 cities.

### Getting Water Into the Ground

WRD works with regional partners, including the Los Angeles County Public Works (LACPW, also known as the LAC Flood Control District), to get stormwater into the ground through the San Gabriel and Rio Hondo Coastal Spreading Grounds in the City of Pico Rivera. Together, we have been able to capitalize on the abundant rainfall from this season and recharge large volumes of groundwater. During the rainy season, the spreading grounds allow water to soak in up to 256 million gallons (1,400 acre-feet) per day and 13 billion gallons (42,000 acre-feet) per month.

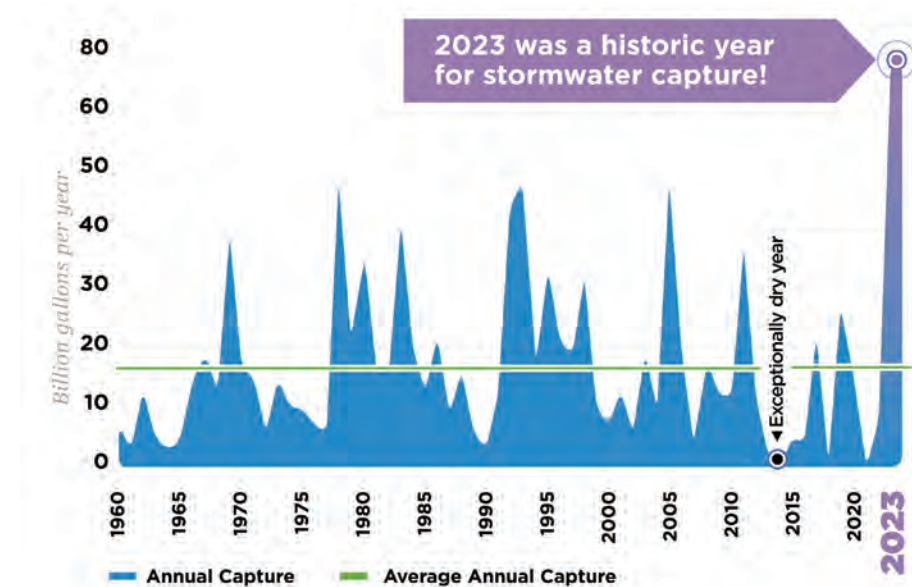
By controlling the releases into the spreading grounds to maximize infiltration, the WRD service area has more than tripled its annual average stormwater replenishment of 18 billion gallons (54,000 acre-feet) with more than 76 billion gallons (234,475 acre-feet). This was only possible with the dedicated work of Los Angeles County Public Works.



Los Angeles County San Gabriel Spreading Grounds - Empty



Los Angeles County San Gabriel Spreading Grounds - Full



2023 was a historic year for stormwater capture!

### Healthy Basins Create Resiliency

Through its robust groundwater monitoring system, WRD assesses the basins' health year-round. This year's increased replenishment with the record-breaking stormwater has allowed the groundwater basins to rebound from previous years' overdrafts and unprecedented recurring drought cycles.

For example, in August 2022, the basin's operating range was at 20%; by August 2023, the basins were at 97% of the operating range. This means we are well positioned to sustain current groundwater pumping rights, leaving room for future storage projects.

By storing this year's bounty of rain in nature's underground reservoirs, those who depend on the Central and West Coast Basins' groundwater

have shored up a local supply that will be available throughout the inevitable next rounds of drought. Still, there is a lot more space for further groundwater storage.

Even with the basins near Optimum Quantity, there remains roughly 145 billion gallons, or 450,000 acre-feet, of storage space within the Central and West Coast Basins. WRD's current projects and programs seek to fill this storage space with as much water as possible for use in future dry years. By leveraging the stormwater we receive in exceptionally wet years and having recycled water at the ready for dry years, we can create a locally sustainable water supply for our service region.



To learn more about the record-breaking stormwater capture, visit us at [www.wrd.org/](http://www.wrd.org/) stormwater or scan the QR code.



Learn how to capture stormwater in your garden at one of our Eco Gardener classes. Sign Up Today! Scan the QR code or visit [www.wrd.org/eco-gardener-program](http://www.wrd.org/eco-gardener-program) to RSVP for the next class.



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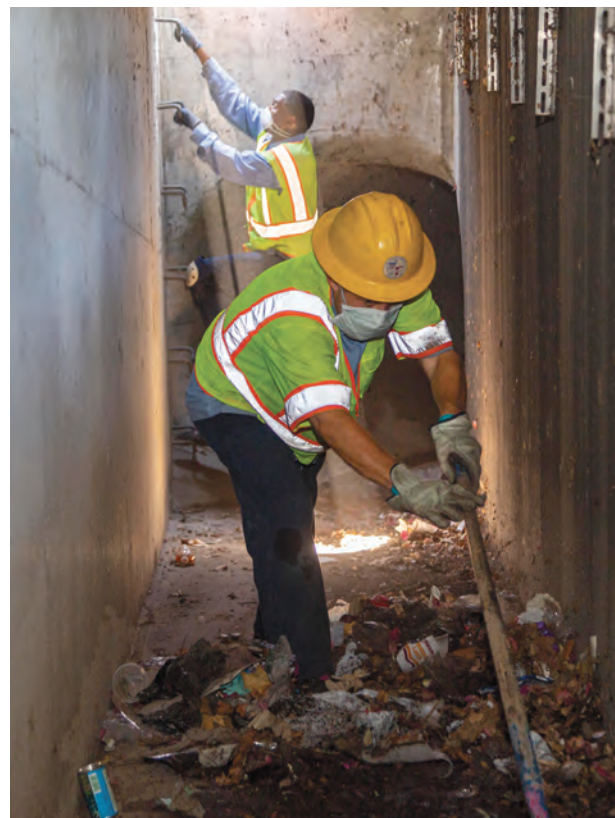
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# Beneath the Surface: LA Sanitation and Environment's Vital Sewer Work

Los Angeles, the City of Angels, is famous for its weather, landmark restaurants, and picturesque coastline. But, did you know that beneath the surface of this iconic metropolis lies an intricate web of sewer systems that plays a crucial role in maintaining the City's quality of life? LA Sanitation and Environment (LASAN) is at the forefront of ensuring that these essential systems work seamlessly, from proactive maintenance and sewer repairs to the daily operation of water reclamation plants. It's mostly funded by the Sewer Service Charge (SSC) you pay on your monthly bill.

## Our Water Reclamation Plants

One might not immediately associate Los Angeles with cutting-edge wastewater treatment, but the City boasts some of the most advanced water reclamation plants in the world. These four facilities, managed by LASAN, are responsible for treating and purifying the vast volumes of wastewater generated by the City's residents, industries, and businesses. The reclamation plants include Hyperion, Terminal Island, Donald C. Tillman, and Los Angeles-Glendale.

At the heart of the operation is the Hyperion Water Reclamation Plant, a true engineering marvel. Hyperion processes 260 million gallons of wastewater daily, transforming it into a valuable resource. The commitment to sustainability now takes center stage, with plans underway to implement innovative technologies for advanced treatment. This technology will produce highly treated purified water to supplement our water supply and help provide a reliable and sustainable local water resource.

Hyperion and the other water reclamation plants protect the City's precious water resources, reduce pollution, and contribute to a more sustainable future. By recycling and reusing wastewater, LASAN helps

alleviate the growing concerns about water scarcity, especially in a region often plagued by drought.

## Proactive Maintenance: The Key to Sewer System Health

While water reclamation plants are vital, they represent just one part of the complex puzzle that is LA's sewer system. Beneath the streets, 6,700-plus miles of pipeline transport the wastewater, and it is LASAN's responsibility to ensure that this intricate network operates efficiently. This is where proactive maintenance comes into play.

Proactive maintenance involves regular inspections, cleaning, closed-circuit camera reviews, and repair work on sewer lines to prevent potential issues before they become costly and disruptive problems. LASAN deploys skilled teams and state-of-the-art equipment to inspect sewer lines, removing blockages and ensuring that they remain in optimal condition.

By investing in proactive maintenance, LASAN not only keeps the City's sewer system running smoothly, but also reduces the risk of sewage spills and backups that could harm the environment and public health. This commitment to proactive maintenance reflects LASAN's dedication to environmental stewardship and the well-being of Los Angeles residents.

## Sewer Repairs: Responding to the Unexpected

Despite proactive efforts, sewer systems can sometimes still face unexpected challenges. Sewer line breaks, pipe failures, and other emergencies can disrupt the flow of wastewater and pose significant risks. In such situations, LASAN's rapid response teams, on-call 24/7, come to the rescue.

These dedicated and well-trained teams are well-equipped to handle emergencies from minor repairs to major sewer line replacements. Their quick and efficient response not only minimizes environmental impacts but

also ensures that essential services like wastewater treatment continue without major disruptions.

**The Importance of LASAN's Work**

In the day-to-day life of a bustling City, it's easy to take the sewer system for granted. However, the work performed by LASAN is nothing short of vital to the City's well-being.

First and foremost, LASAN's efforts protect public health. By safely managing and treating wastewater, they prevent the spread of disease and maintain a clean and healthy environment for Los Angeles residents.



Furthermore, their work safeguards the City's natural resources. The water reclamation process not only conserves water but also helps restore ecosystems by returning treated water to local waterways.

Beyond these immediate benefits, LASAN's work contributes to the sustainability and resilience of Los Angeles. The proactive maintenance and rapid response teams ensure that the sewer system remains functional, reducing the risk of catastrophic failures that could disrupt daily life and harm the environment.

## Everyday Reliability

The tireless efforts of LASAN's teams, from water reclamation to proactive maintenance and sewer repairs, is indispensable to the City's health, environmental stewardship, and future sustainability.

The next time you turn on the tap, flush the toilet, or enjoy the benefits of a functioning sewer system, remember the unsung heroes at LASAN who make it all possible. Their commitment to the well-being of the City and its residents ensures that Los Angeles remains a shining example of urban development that respects both nature and the people it serves. ○

LA Sanitation and Environment offers 24-hour Customer Service by calling 800-773-2489 or using the City's MyLA311 app. Learn more on their website at [www.lacitysan.org/cleanwater](http://www.lacitysan.org/cleanwater).





At left, a rendering of one of the Ballona Creek TMDL Project facilities (Low Flow Treatment Facility #1). Above, a view of LA's historic MacArthur Park Lake, which is slated for revitalization. Below, this rendering is an example of a drywell system paired with new native plants and trees to capture water to improve water quality, increase shade, and green an urban environment for community benefit.

## Stormwater Capture and Water Quality Initiatives in Los Angeles

The City of Los Angeles experiences frequent droughts and unpredictable rainfall patterns, leading to water scarcity concerns. To address these issues, LA has embarked on an ambitious journey towards sustainable water management through the Safe, Clean Water Program (SCWP) administered by LA Sanitation and Environment (LASAN). This initiative focuses on stormwater capture, water quality enhancement, community greening, and innovative projects like the revitalization of MacArthur Park Lake, the Sun Valley Green Neighborhood Infrastructure Project, and the Ballona Creek TMDL (Total Maximum Daily Load) Project.

### Stormwater Capture and Its Importance

Stormwater runoff in urban areas often carries pollutants like debris, oil, and chemicals into rivers and oceans, posing a significant threat to water quality and ecosystems. The Safe, Clean Water Program in Los Angeles recognizes the need to capture and treat this runoff to mitigate these adverse effects.

The City's Green New Deal aims to source 70% of its water supply locally by 2035, as such City leadership has placed an emphasis on multi-benefit stormwater capture projects. These projects aim to improve water quality using nature-based solutions that replenish LA's groundwater basins and increase recreational benefits, especially for those neighborhoods where residents already have historically faced economic, health, and environmental hardships.

### Revitalization of MacArthur Park Lake

MacArthur Park Lake's revitalization is part of the Safe, Clean Water Program's mission to improve water quality and create vibrant community spaces, especially in underserved communities. By enhancing the lake's water quality and using stormwater capture techniques, LA Sanitation and Environment aims to create a healthier ecosystem for both wildlife and the community. The MacArthur Lake Stormwater Capture Project diverts and treats portions of wet weather stormwater flows as well as dry weather flows from an existing underground storm drain system. This water is then discharged into MacArthur Lake for storage or returned to the storm drain system.

The project reduces the volume of stormwater and dry weather flows and their associated pollutant loads, that enters Ballona Creek and ultimately Santa Monica Bay. Additionally, the project enhances the park by creating treatment wetlands and provides educational opportunities, such as interpretive signage about stormwater management and park wetlands.

### Sun Valley Green Neighborhood Infrastructure Project

Located in the Upper LA River watershed, Sun Valley sits over a large underground aquifer where the City stores a portion of its drinking



water. Stormwater runoff has historically caused flooding and pollution, affecting the local environment and public health. LASAN has secured funding for the project from the SCWP to install permeable surfaces, bioswales, and dry wells (underground structures that allow water to soak into the ground) to capture and treat stormwater, reduce pollution and minimize the risk of flooding. The Sun Valley Watershed project exemplifies the program's commitment to enhancing water quality, mitigating the impacts of urbanization, and providing nature-based solutions in an area that has been underserved.

### Ballona Creek TMDL Project

The Ballona Creek TMDL (Total Maximum Daily Load) Project is being constructed to improve water quality in Ballona Creek and downstream wetlands, to protect the health of people who enjoy beaches downstream, and to assist the City in meeting its water quality limits and supply goals. TMDLs are important water quality regulations that require pollution reduction under the Clean Water Act. As part of this project, the City is constructing two innovative facilities that collect and treat polluted runoff that flows in the creek during dry weather. The smaller of the two facilities uses ozonation processes to treat polluted water from the Sepulveda Channel, a tributary of Ballona Creek, and return the clean water to the creek. The larger facility, sited along the main stem of Ballona Creek, will not only treat and return up to six million gallons per day of clean water to Ballona Creek, but it will also divert up to 23 million gallons per day to the Hyperion Water Reclamation Plant to supplement flows and allow for the runoff to be treated for reuse as local water supply in the future.

### Comprehensive Solutions for a Complex Future

Los Angeles faces complex challenges related to water management, but the Safe, Clean Water Program provides comprehensive solutions. Through the revitalization of MacArthur Park Lake, the Sun Valley Green Neighborhood Infrastructure Project, and the Ballona Creek TMDL Project, the program is actively working to capture and treat stormwater, enhance water quality, and create more sustainable urban environments. As Los Angeles continues to adapt and innovate, it serves as a model for other cities looking to address water resource challenges in an environmentally responsible and community-oriented manner. ○

**LA Sanitation and Environment hosts virtual meetings to educate residents and accept feedback regarding proposed and funded projects. Learn more on their website at [www.lacitysan.org/watershedprotection](http://www.lacitysan.org/watershedprotection)**



CBMWD, which serves 1.6 million people, is expanding its Recycled Water Distribution System with more connections to irrigate additional public spaces especially in disadvantaged communities. Currently, CBMWD has four pump stations, a pressure reducing station, and approximately 80 miles of distribution pipeline. Recycled water is used to irrigate parks, schools, golf courses, street medians, cemeteries, and more.

## Reusing More CBMWD Expanding Recycled Water System

Central Basin Municipal Water District (the District) serves 1.6 million people in southeast Los Angeles. As a water wholesaler, the District provides imported water to its purveyors, 40 retail water providers, and one water wholesaler including cities, mutual water companies, investor-owned utilities, and private companies.

The District was established in 1952 to help mitigate the over-pumping of underground water resources and joined the Metropolitan Water District in 1954 as a member agency. To curtail the use of inexpensive but limited local groundwater supplies, the District provides recycled water and high-quality imported water.

*"Our recycled water projects will help to preserve drinking water and keep rates stable for the communities in our service area."*

Dr. Alejandro Rojas, General Manager

### Recycled Water

One of the District's current initiatives is the expansion of recycled water to drought-proof the area. The District has aggressively marketed and connected irrigation and industrial users to the recycled water system. Current irrigation uses include schools, golf courses, freeway landscaping, parks, cemeteries, nurseries, and street medians. Whereas, current industrial uses include concrete mixing, carpet dyeing, and cooling towers.

The District operates and maintains approximately 90 miles of recycled water pipeline within its service area through the County Sanitation Districts of Los Angeles County. The District's Recycled Water Distribution System consists of three pump stations, a pressure-reducing station, and approximately 80 miles of distribution pipeline. The pump stations include the Rio Hondo Pump Station, the Cerritos Pump Station, and the Hollydale Pump Station.

The District's Capital Improvement Plan (CIP) seeks to expand the existing recycled water distribution system. The three main CIP projects are the rehabilitation of the

Rio Hondo Pump Station which was originally built 30 years ago, the building of the Montebello Hills Pump Station to support residential development, and the use of Proposition 1 funds to switch public sites within disadvantaged communities to recycled water irrigation which will save over 110-acre feet of water per year.

The District is strategically adding recycled water connections and for FY 2023/24, 11 pending additions will produce ~2,300 AF of recycled water.

### Projects

The District has continued collaborating with its purveyors to invest in infrastructure and develop projects supporting the region's resiliency needs. Turf replacement projects are one of the most common – cities work with the District to switch from turf to California-friendly, drought-tolerant landscaping in areas where communities come together like libraries, City Halls, and community centers. The District also has multiple retrofitting projects to upgrade water fountains, sinks, toilets, and irrigation systems in public places. Lastly, the District has partnered with a few of its purveyors and Olea Edge Analytics for a pilot project. The pilot consists of installing Olea's 'Meter Health Analytics' technology on the purveyors' largest meters to help reduce apparent water losses by identifying large commercial, industrial, and institutional (CII) water meter inaccuracies through continuous performance monitoring using state-of-the-art sensors, edge computing, and AI/ML. This is a proactive approach that identifies inaccurate/underperforming water meters and diagnoses the root cause of the inaccuracy.

The goal of the water-efficiency projects is to inspire residents when they see that their cities and schools are making water-efficient upgrades and educate them about the rebates available for their projects. ○





Investments in centralized groundwater treatment allows Long Beach Utilities to ensure reliable, high-quality drinking water meets current and future regulations. The current groundwater treatment facility treats local groundwater to a high standard and then blends it with imported Metropolitan water before sending the water to the Alamitos Reservoir for distribution to over 60% of the city. This model has been effective in Long Beach for over 100 years.



These potable water tanks at J. Will Johnson Reservoir provide imported Metropolitan water to approximately 25% of the city. Long Beach's two drinking water reservoirs, J. Will Johnson Reservoir and Alamitos Reservoir, sit at the same elevation, working in tandem to optimize water quality management and maximize energy efficiency – using gravity to distribute water to the entire City of Long Beach.



# Infrastructure: Long Beach Plans for a Drought-Resilient Future

**W**ater conservation is a lifestyle in Long Beach. Droughts have always been a part of life in Southern California, and the city is proud to say residents and businesses are leaders in conservation. The Long Beach community consistently exceeds statewide conservation goals every year.

While Long Beach has grown accustomed to navigating between the wet and dry years, climate change is testing their abilities beyond how much water can be saved. Storms are becoming more severe and occurring less frequently. These strong fluctuations in weather patterns, from record-breaking droughts to heavy rainfall, have forced every jurisdiction in the region to reevaluate decade-long strategies when it comes to water resources, systems and infrastructure. Long Beach is truly trying to save and efficiently use every drop possible.

As residents and businesses continue to do their part with water conservation, the Long Beach Utilities Department, which manages the city's water infrastructure and provides safe and reliable water service to a population of over 460,000, has been actively working towards securing reliable water supplies for the future.

Long Beach has traditionally relied on imported water from Northern California and Colorado River – both resources depend highly on annual rainfall and snowpack conditions. From 2019 to 2022, these traditional water resources experienced some of the most severe drought conditions ever recorded, which put an incredible strain on the city's water supply.

With climate change making heat waves more common, the city decided to heat things up with a more positive outlook. Long Beach's access to groundwater supplies in the Central and West Coast Basins present a tremendous opportunity. The Utilities Department is looking at ways to expand use of this existing underground resource. Currently, groundwater accounts for roughly 60% of water needs.

In 2023, the Utilities Department identified potential infrastructure improvements that could help expand groundwater use – but before discussing the details of their potential future, it's important to understand how water currently moves within the city.

Long Beach's distribution system relies on gravity and two tank farms at Alamitos and J. Will Johnson Reservoirs to deliver water to the entire city. The Alamitos Reservoir is connected to the city's centralized groundwater treatment plant and distributes water to east Long Beach and the Bixby Knoll area. The J. Will Johnson Reservoir, which supplies water to North and West Long Beach, is not connected to the city's treated groundwater. Unfortunately, due to the physical location of the existing groundwater treatment plant, groundwater supplies cannot physically reach the entire city; instead, North and West Long Beach rely entirely on imported supplies that are more susceptible to drought conditions.

Recognizing challenges and opportunities, the Utilities Department has developed a Groundwater Resilience Program.

Their Groundwater Resilience Program proposes infrastructure improvements to increase groundwater use and promote



sustainability. Made up of several interconnected projects, all which take place upstream of their distribution system, this Groundwater Resilience Program could improve water supply resiliency and equity across the entire City of Long Beach.

The cornerstone of Long Beach's Groundwater Resilience Program could be a new groundwater treatment plant at J. Will Johnson Reservoir. The potential new groundwater treatment facility could be connected to and supply drinking water to the existing tank farm to feed North and West Long Beach. Additionally, a pipeline could connect the proposed treatment plant to new groundwater production wells located west of the Los Angeles River, drawing groundwater up from the West Coast Basin.

By operating together, the proposed treatment plant and production wells could create a separate groundwater system on the western front of the city, delivering a resilient water supply to the underserved communities within the North and West Long Beach areas.

On the eastern side of the Los Angeles River, a pipeline interconnecting two branches of the city's existing groundwater system could allow for increased well production and additional system redundancy. And finally, a pipeline linking Long Beach's existing groundwater system east of the Los Angeles River to the proposed western system, could provide the full capability to move groundwater across the entire city. This capability to move groundwater brings resilience to the entire City of Long Beach and decreases reliance for imported water supplies.

Planning level costs for the Groundwater Resilience Program are estimated to be approximately \$157 million, which is a significant capital investment relative to the Utilities Department's \$40 million annual Capital Improvement Program.

There is still much work to be done; staff will perform thorough analyses of potential capital investment plans prior to presenting them to the Board for approval. The Department is committed to sustainable practices in both water resources management and fiscal responsibility.

Droughts don't just impact Long Beach; they affect all of Southern California. As the region continues to adapt to the consequences of climate change, opportunities open for strategic partnerships.

Increased groundwater use from the Central and West Coast Basins requires sustainable pumping practices to avoid wells from going dry or allowing seawater to encroach into drinking water aquifers. Long Beach is partnering with the Water Replenishment District, which manages the Central and West Coast Basins, to conduct a Groundwater Augmentation Study and evaluate ways to contribute to a sustainable groundwater future. This study will identify replenishment areas and injection infrastructure for the drinking water aquifers that Long Beach relies on. Utilizing new recycled water resources like Metropolitan Water District of Southern California's Pure Water Program for groundwater replenishment also allows Long Beach to become more sustainable.

Long Beach Utilities' efforts today, strive to balance a need for new infrastructure to serve current and future generations, while also maintaining existing infrastructure built by their predecessors. ○



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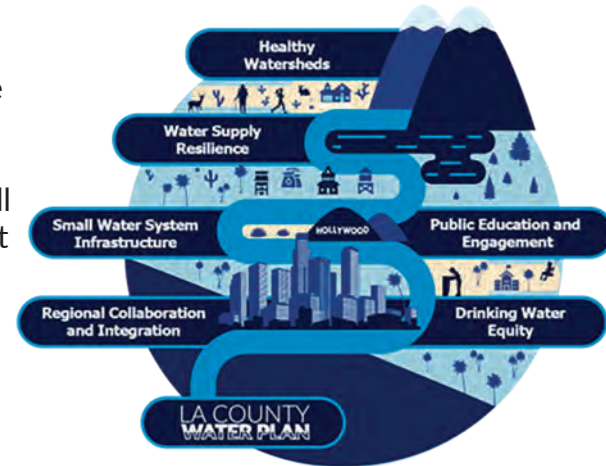


Los Angeles County Public Works developed the Los Angeles County Water Plan (CWP) to work collaboratively with stakeholders to ensure a resilient water supply. Some regional water resources and infrastructure include: Morris Dam, at left, and San Gabriel Dam, above left, on the San Gabriel River; and the Santa Fe Spreading Grounds where water is filtered into the groundwater basin, above right. Below, representatives from Los Angeles County regional water agencies participating in the CWP.

# Comprehensive Vision for LA County's Water Future

Climate change is establishing a “new normal” of more frequent and intense droughts, coupled with less frequent but more torrential rains. Recognizing this new climate reality and the need to be thoughtful stewards of future water supplies, Los Angeles County envisioned the development of a countywide water plan focused on collaborative management of LA County's water resources.

Los Angeles County Public Works (Public Works) developed the Los Angeles County Water Plan (CWP), together with water resources organizations and an array of diverse stakeholders, to ensure a water resilient future for the region and achieve a collective vision of equitable and sustainable water resources. The CWP will target the enhancement of water infrastructure, healthy watersheds, and water resource optimization through actionable targets and strategies.



Water resources in Los Angeles County are increasingly stressed. Climate change has introduced a weather whiplash of intense droughts and torrential rainfall contrasted by years on ongoing drought. Despite the historic rainfall amounts received during the

2022-23 water year, many of the county's groundwater basins are still over-drafted or stressed, and some of the region's most vulnerable communities lack access to safe, reliable water supplies.

## SHARED OPPORTUNITIES FOR WATER RESILIENCE

The CWP outlines a path to achieve a resilient water future for all Los Angeles County residents. It is a living document intended to build upon and complement the many existing local and regional water planning efforts. The CWP aims for sound stewardship of all watersheds and groundwater basins that uplifts all communities by focusing on four key focal areas where new or additional regional collaboration can add value.

### Regional Water Supply Reliability

Improving regional water supply reliability by better leveraging our collective local and imported water resources and infrastructure.

### Groundwater Management and Quality

Realizing our shared groundwater management opportunities by sharing expertise and resources to maintain water quality and availability.

### Small, At-Risk System Resilience and Drinking Water Equity

Ensuring a consistently high standard of water service for everyone in Los Angeles County by providing regional support for small systems, with focused attention to underserved communities.

### Regional Strategies, Regional Benefits

Ensuring that the region has a dependable and consistent water supply to meet its needs, particularly during times of scarcity or crisis.

## ACHIEVING REGIONAL WATER RESILIENCE THROUGH COLLABORATIVE STRATEGIES

With over 200 water supply agencies and numerous other wastewater treatment, flood control, and land management agencies within the county, collaboration on a regional scale is crucial. The County Water Plan will leverage existing efforts like Los Angeles County's “OurCounty” Sustainability Plan, the Integrated Regional Water Management (IRWM) Plan, the L.A. River Master Plan, and Metropolitan Water District's Integrated Water Resources Plan to facilitate the development and implementation of integrated solutions to key water management issues through collaboration with water agencies, stakeholders, and members of the public.



At the onset of CWP development, Public Works proactively reached out to a diverse group of stakeholders to understand the varying water needs of the region's communities. We identified several broad, overarching values for the CWP through these conversations. Some of these values provided core tenets to our overall process of development, while others guided us in establishing targets, strategies, and actions. Other values not directly addressed through the actions in the CWP, will continue to inform and guide on how water resource management across the region is approached.

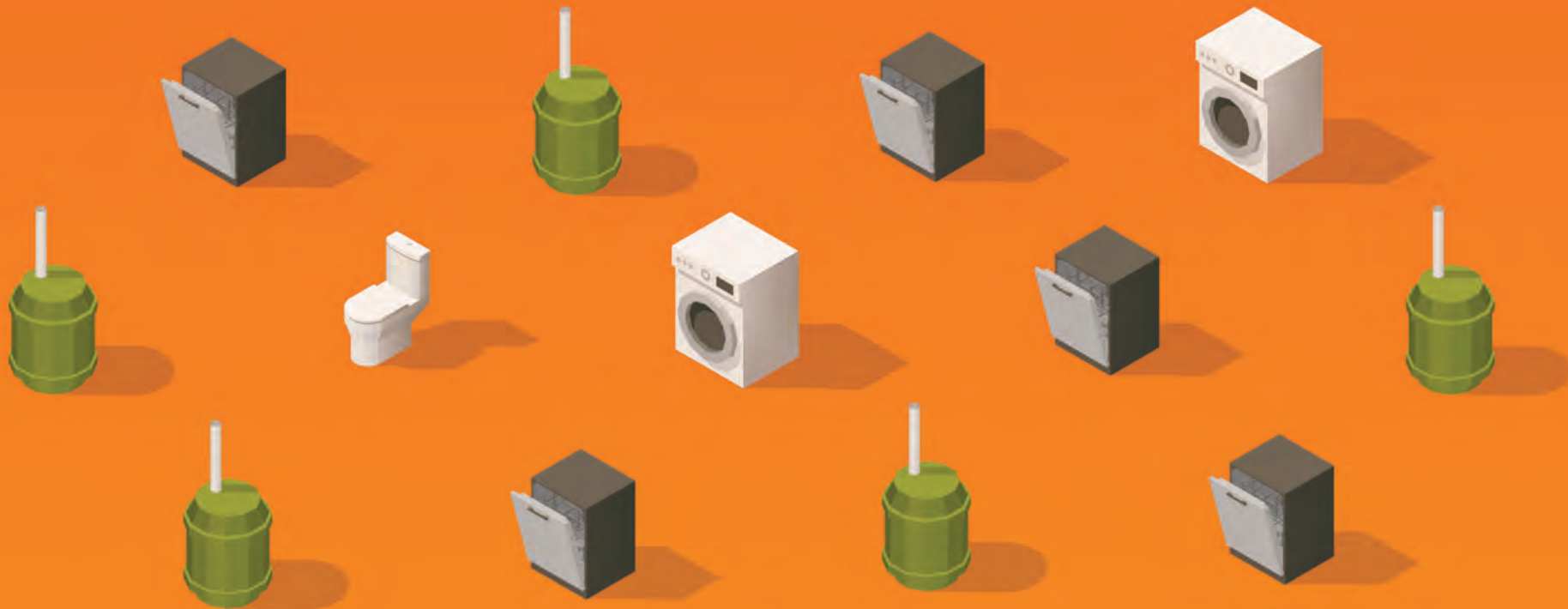
## OUR ROUTE TO RESILIENCE, TOGETHER

As LA County confronts the challenges posed by climate change and the uncertain future of its water supply, the CWP aims at actionable solutions while articulating a shared, inclusive, regional path towards sustainably achieving safe, clean, and reliable water resources for all county residents. Underscoring the importance of a coordinated effort to achieve water resiliency and sustainability in the region plays a significant role in the program's success.

The CWP is scheduled to be presented to the Los Angeles County Board of Supervisors for adoption in late 2023. ○

For more information on this and other LA County water-related projects, please visit [WaterForLA.com](http://WaterForLA.com).





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