

2023-24

Briefing Book



LADWP.com

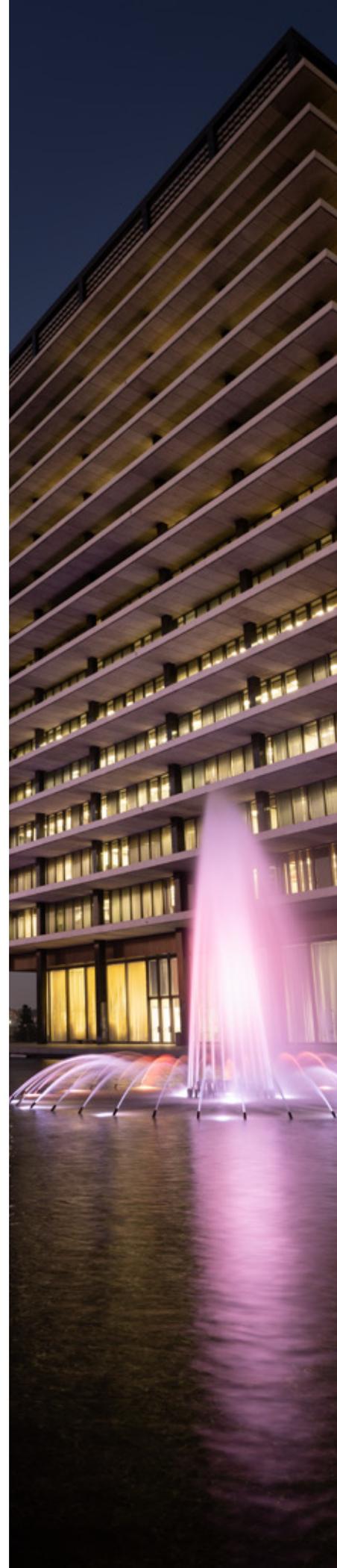
The Los Angeles Department of Water and Power (LADWP) is the nation's largest municipal utility, with 8,007 megawatts (MW) of electric capacity and serving an average of 435 million gallons of water per day to the more than four million residents of Los Angeles, its businesses and visitors. For more than 100 years, LADWP has provided the city with reliable water and power service in a cost-effective and environmentally responsible manner. With a workforce of more than 11,000 employees, LADWP is guided by the five-member Board of Water and Power Commissioners, appointed by the Mayor and confirmed by the City Council.

Mission Statement

The Los Angeles Department of Water and Power exists to support the growth and vitality of the City of Los Angeles, its residents, businesses and the communities we serve, providing safe, reliable and cost-effective water and power in a customer-focused and environmentally responsible manner.

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Board of Water and Power Commissioners



Richard Katz
President



George McGraw
Vice President



Nurit Katz
Commissioner



Mia Lehrer
Commissioner



Wilma Pinder
Commissioner

Our Leadership Team



Janisse Quiñones
CEO and
Chief Engineer



Martin L. Adams
(Retired June 2024)
General Manager and
Chief Engineer



Daniel Aeschleman
Chief Safety Officer



Aram Benyamin
Chief Operating
Officer



Anselmo Collins
Senior Assistant
General Manager -
Water System



Mona Guirguis
Interim Chief
Information
Technology Officer



Joseph M. Ramallo
Senior Assistant
General Manager -
Customer Service,
Communications and
Corporate Strategy



Greg Reed
Senior Assistant
General Manager -
Diversity, Equity and
Inclusion



Julie Riley
General Counsel



Ann M. Santilli
Chief Financial Officer



Simon Zewdu
Senior Assistant
General Manager -
Power System

The LADWP Briefing Book is published by the Communications and Corporate Strategy Division. This edition reflects data for fiscal year 2022-2023 and program updates through the end of the calendar year 2023.



Strategic Initiatives

Leading with Equity

LADWP is creating a clean energy future for Los Angeles while maintaining a reliable and cost-effective power supply for customers, and doing so in a way that leads with equity. The groundbreaking Los Angeles 100 Percent Renewable Energy Study (LA100) provided the roadmap for delivering reliable and sustainable electricity to our customers. The follow-up study—LA100 Equity Strategies—showed how LADWP can achieve our clean energy goals in a way that benefits all Angelenos and leaves no community behind. Two LADWP initiatives announced in 2023 demonstrate how we Lead with Equity.

Powered by Equity

With the completion of LA100 Equity Strategies in fall 2023, LADWP announced Powered by Equity, a collection of equity-driven, clean energy policies and programs. The cornerstone of Powered by Equity is a comprehensive plan to build, operate and maintain a City-owned network of electric vehicle (EV) fast-charging hubs across Los Angeles, including the city’s underserved communities.

Project PowerHouse

In response to Mayor Karen Bass’ Executive Directive 1 declaring a state of emergency on homelessness in Los Angeles, LADWP launched Project PowerHouse to prioritize the development of 100 percent affordable housing. LADWP also amended a rule to allow sharing the cost of underground distribution line extensions in the public right-of-way among all customers who benefit. This rule change is already generating cost savings and boosting economic development throughout the city.



Resiliency and Reliability

Water and power support the quality of life and vitality of our customers and communities. We consistently work to upgrade and modernize the city’s water and power infrastructure to ensure our customers receive safe, reliable and affordable service. For both water and power, we rank high in reliability performance metrics, described later in this report.

This past year, we invested \$1.1 billion to significantly improve the reliability of the power system, including the inspection, maintenance, repairs and replacement of electrical equipment, and proactive management of trees that encroach on power lines. We also revamped our online outage map platform and implemented new policies to keep customers informed about outages.

On the water side, we continue to proactively upgrade water distribution through a \$6.3 billion five-year water capital plan that involves installing seismic resilient pipes to protect against earthquakes, and replacing older mainlines and trunk lines to ensure future



reliability. Additionally, we improved overall emergency response by launching a Department Operations Center that brings together the Water System, Power System, cybersecurity, communications and other teams that support the entire Department.

Sustainable Water and Clean Energy Future

An important strategic initiative for LADWP is to help reduce the impacts of climate change through developing sustainable energy and water resources. On the power side we are working to achieve accelerated goals of 80 percent renewable energy by 2030 and 100 percent clean energy by 2035.

Our roadmap to a clean energy future requires expanding large-scale renewable energy resources, energy storage, and transmission capacity to bring clean energy to Los Angeles. At the same time, we are expanding clean energy solutions within the city, such as local solar and batteries, electric vehicle charging, microgrids and other small-scale distributed energy resources.

On the water side, we are expanding L.A.'s local and resilient water supply by maximizing purified recycled water from the Hyperion Water Reclamation Plant

in Playa del Rey, and using advanced purification technology to create a new sustainable water source. Other initiatives include: building new facilities to clean up the groundwater basin; improving our capacity to capture stormwater runoff; and increasing our use of recycled water.

Learn more: [LADWP.com/CleanEnergyFuture](https://www.ladwp.com/CleanEnergyFuture)
[LADWP.com/LocalWaterSupply](https://www.ladwp.com/LocalWaterSupply)





Workforce Diversity and Recruitment

LADWP recognizes the importance of a strong and diverse workforce to continue building a stronger Los Angeles. As a jobs creator and employer, LADWP maintains a workforce of more than 11,000 and promotes economic development in the region by providing secure, well-paying civil service jobs. For example, we partner with the International Brotherhood of Electrical Workers (IBEW) Local 18 on the Utility Pre-Craft Training Program. Since 2011, the program has onboarded 400 new employees into full-time training and permanent positions. In 2024, LADWP and IBEW are launching the Utility Worker and Office Trainee Program, opening new pathways into entry-level positions that can lead to rewarding careers with the City of Los Angeles.

LADWP and IBEW are also partnering on advancing gender equity in the skilled crafts. Known as Women in Trades, this partnership promotes job opportunities in technical, construction, operations, and maintenance services with a focus on motivating women to pursue rewarding careers in the trades. By partnering with non-profit workforce development organizations, we are tailoring our efforts to inspire young girls to pursue skilled-craft and STEM careers and become part of our future utility workforce.

Learn more: [LADWP.com/Jobs](https://www.ladwp.com/jobs)



Affordability for Customers

LADWP is committed to ensuring that every customer has equitable access to water and power, and we are focused on better understanding the needs of the customers, communities and industries that we serve. We accomplish this through continuous customer

feedback and input, and listening to the challenges facing customers when accessing available services and programs. Based on our customers' feedback, we work to address their concerns and make it easier for them to access our programs, apply for rebates, request changes in service, and engage in other interactions with us.

Under the leadership of the Board of Water and Power Commissioners, LADWP has worked to keep rates affordable for those who can least afford to pay, and issued a moratorium on collection-based water and power shutoffs for customers enrolled in our EZ-Save and income-assistance programs.

To further assist customers financially, LADWP has secured more than \$85 million in relief funding through the California Arrearage Payment Program (CAPP) and the local City of Los Angeles Solid Resource Fee (SRF) Assistance Program. The funds provided financial assistance to approximately 150,000 residential accounts to pay electric and sanitation bills.

Learn more: [LADWP.com/CARES](https://www.ladwp.com/cares)



Power for L.A.

LADWP is the nation's largest municipal power utility with a net maximum plant capacity of 10,730 megawatts (MW) and net dependable capacity of 8,007 MW. In fiscal year 2022-23, we supplied more than 21,600 gigawatt-hours (GWh) of power for more than 1.6 million electric service customers, including nearly 6,000 in the Owens Valley. We maintain a diverse and vertically integrated power generation, transmission and distribution system that spans five Western states, and we deliver reliable, cost-efficient power to more than four million people in Los Angeles.



LOS ANGELES' POWER GENERATION AND TRANSMISSION

If stretched end to end, LADWP's 15,000 miles of power lines and cable are longer than the distance from Los Angeles to Australia and back.

WINDY POINT Wind
 LINDEN RANCH Wind
 PEBBLE SPRINGS Wind
 WILLOW CREEK Wind
 CELILO AC-DC CONVERTER STATION

PLEASANT VALLEY Wind

NORTHERN NEVADA Geothermal
 DONALD A. CAMPBELL 1&2 Geothermal

INTERMOUNTAIN POWER PROJECT Coal
 MILFORD 1&2 Wind

OWENS GORGE Hydro

APEX GENERATING STATION Natural Gas

ELAND SOLAR & STORAGE (in development) Solar

PINE TREE Wind & Solar

MOAPA Solar

SPRINGBOK Solar

RE CINCO Solar

HOOVER DAM Hydro

NAVAJO Assets
 RED CLOUD Wind - New Mexico

BEACON Solar + Battery

MANZANA Wind

COPPER MTN 3 Solar

ADELANTO Solar

CASTAIC POWER PLANT Hydro/Pumped Storage

POWER PLANT 1 Hydro

SYLMAR AC-DC CONVERTER STATION

LOS ANGELES BASIN

POWER PLANT 2 Hydro

VALLEY GENERATING STATION Natural Gas

ORMESA Geothermal

HEBER-1 Geothermal

PALO VERDE GENERATING STATION Nuclear

FEED-IN-TARIFF
 SOLAR INCENTIVE PROGRAM
 COMMUNITY SOLAR

SCATTERGOOD GENERATING STATION Natural Gas

CITY OF LOS ANGELES IN-BASIN GENERATING STATIONS

HAYNES GENERATING STATION Natural Gas

HARBOR GENERATING STATION Natural Gas

Power Facts*

*Data is current as of June 2023, unless otherwise noted.

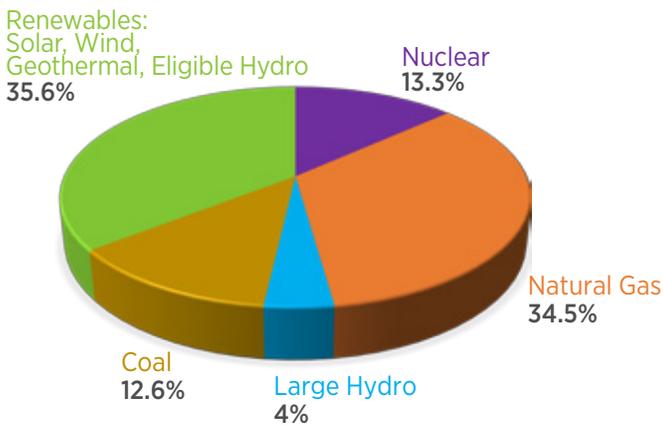
Approved Power Budget (FY 2023-24)

- \$5.5** billion total
- \$1.7** billion operations and maintenance
- \$2.2** billion capital projects
- \$1.6** billion fuel and purchased power

Electric Capacity

8,007 MW Net dependable generation capacity from a diverse mix of energy sources

Power Resources (Calendar Year 2022*)



*CY2022 is the latest available

Power Use (FY 2022-23)

The average electricity consumption per service connection was **449** kilowatt-hours (kWh) per month. The median usage for residential customers was about **320** kWh per month. Business, industry, and government agencies consumed about 60 percent of the electricity in Los Angeles, while residents make up about 90 percent of total customers.

Peak Energy Demand

6,502 MW The record instantaneous peak demand is reached on August 31, 2017.

Power Infrastructure

The Power System is responsible for inspecting, maintaining or replacing, and operating the following:

Generation

- 5** thermal plants
- 14** small hydroelectric plants
- 1** large hydroelectric pumped storage plant
- 1** wind plant
- 2** solar photovoltaic plants

Energy Storage

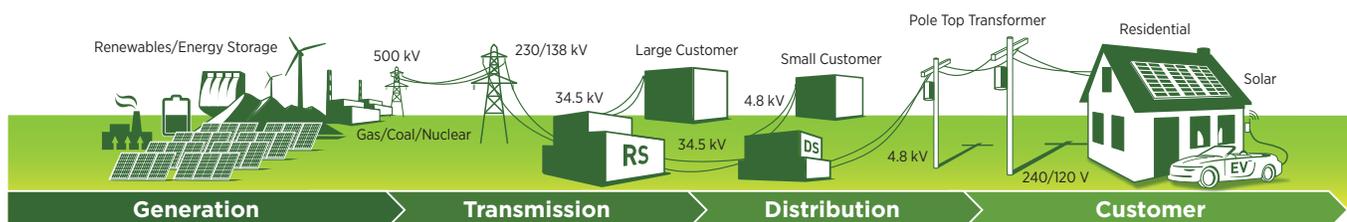
- 1.6** MW of City-owned, behind-the-meter energy storage
- 21.5** MW of utility-scale battery energy storage
- 1,265** MW of pumped hydro storage

Transmission

- 4,040** miles of overhead transmission circuits (AC and DC) spanning five Western states
- 135** miles of underground transmission circuits

Distribution

- 7,262** miles of overhead distribution lines
- 3,842** miles of underground distribution cables
- 311,272** distribution utility poles
- 3,144** pole-mounted capacitor banks
- 131,754** distribution transformers
- 178** distribution substations



Power Reliability and Resiliency

Power Infrastructure Upgrades—At a Glance

Infrastructure Replacements	FY 2022-23 Goals	FY 2022-23 Achievements	FY 2023-24 Goals
Poles	3,500	3,459	3,700
Crossarms	12,000	11,143	12,600
Transformers	1,150	1,614	1,255
Underground Cable (miles)	60	58.8	60
Vaults	22	22	24

Investing in Infrastructure

Planned and sustained infrastructure replacement is a cost-efficient and highly effective approach to maintaining reliability. LADWP has invested significantly in the proactive replacement and upgrade of aging and undersized electrical equipment, with approximately \$1.4 billion budgeted in FY 2023-24.

Through our Power System Reliability Program (PSRP), LADWP proactively inspects power equipment to identify needed repairs related to distribution, substation, transmission and generation infrastructure that is the backbone of L.A.'s power grid.

In the past year, we have expanded and accelerated the PSRP goals to lay the foundation for our transformation to 100 percent clean energy. We are building a clean energy future that will be dominated by variable renewable energy resources, such as wind and solar, more distributed local solar, and more electrification of buildings and transportation.

Investing in modernizing, upgrading and expanding infrastructure is vital to creating an energy future that is clean, reliable and resilient.

Benchmarking

LADWP's power reliability metrics continue to beat national norms. Our power system average interruption frequency and duration indices (SAIFI and SAIDI) ranked in the 1st quartile, and our outage restoration time (CAIDI) ranked in the 2nd quartile

when compared to investor-owned utilities (IOUs) nationwide and in California. The ranking was based on a 2022 benchmarking study performed by First Quartile Consulting and Pandora Consulting using data submitted by participating utilities and from the U.S. Energy Information Administration (EIA).

On average, our customers experienced less than one outage and 214 minutes of power interruption during FY 2023-23.

Distribution Upgrades

In FY 2022-23, our power crews completed repairs on more than 8,046 infrastructure-related jobs. We met or exceeded our distribution equipment replacement targets for transformers and substructures as well as system growth targets for overhead and underground reconductoring and 34.5 kV trunk line circuits. We are on track to meet our FY 2023-24 targets.

Our long-term goals call for expanding capacity of our 34.5kV distribution system to meet increasing demand from the transportation and building sectors, including the expansion of EV charging infrastructure across the city.

Substation Automation

Plans are underway to automate 178 LADWP substations at a rate of 10 to 12 substations per year to improve operational capabilities and communications while reducing operations and maintenance costs. As of 2023, we have automated 100 substations including 17 receiving stations, 69 distributing stations, seven

switching stations, and seven generating station switchyards. This accounts for 59 percent of all substations when excluding converter stations, large customer stations, and pole-top distributing stations.

Wildfire Mitigation Plan

Wildfires have posed a significant threat to public safety. We have a Wildfire Mitigation Plan to keep our customers safe, and our power service reliable and resilient. Updated annually as mandated by the state, the plan describes how we continually mitigate the threat of wildfires posed by electrical lines and equipment. Our plan includes preventative strategies and programs, such as system hardening through design and construction, vegetation management, operating protocols, and inspection and maintenance programs. In 2023, we completed a comprehensive update to the plan, which was reviewed by an independent evaluator who determined it to be comprehensive and in compliance with all statutory requirements.

Learn more: [LADWP.com/WildfirePlan](https://ladwp.com/WildfirePlan)

Transmission Upgrades

LADWP has developed a Strategic Transmission Plan to identify specific transmission needs to ensure the reliability and resilience of our power system, meet the anticipated load growth from transportation and building electrification, and achieve our clean energy goals. The Strategic Transmission Plan provides a roadmap of the specific transmission projects LADWP will need to embark on over the next 20 years.

Haskell-Sylmar Line 2

The scope of the Haskell-Sylmar Transmission Line Project includes the demolition of two existing 115 kV double circuits and approximately 70 structures, and the construction of two new 230 kV Haskell-Sylmar Line 2 circuits (one energized and one spare) about 13 miles long, and about 74 new structures. At both ends of the line, the substation installation consists of new 230 kV power circuit breakers, and their associated relay protection, controls and monitoring devices.



The new transmission line will provide additional capacity to carry renewable power from the Tehachapi Mountains and Mojave Desert to the Los Angeles Basin. This project will improve power reliability while being an integral part of achieving LADWP's long-term clean energy goals.

Scattergood Pershing Olympic Transmission Line Project

The Scattergood Pershing Olympic project consists of decommissioning the existing Scattergood-Olympic Line 2 and installing 11.5 miles of new 230 kV underground transmission cables using existing infrastructure. Located within the city, this project will enhance reliability of electric service to the western Los Angeles area and Los Angeles International Airport, improve flexibility and reliability of the transmission system, comply with federally mandated standards, and reduce the need for emergency system repair.



Barren Ridge-Haskell Line 1 Upgrade

Our crews are upgrading the transmission capacity between the Barren Ridge and Haskell Canyon Switching Stations, which includes replacing 51 miles of existing conductor with higher capacity wire. Upgraded steel lattice structures and concrete foundations will need to be installed to accommodate the new wire. Once the project is completed, the additional transmission capacity will allow us to increase renewable generation capabilities while simultaneously improving overall reliability.

L.A.'S CLEAN ENERGY FUTURE FUTURO DE ENERGÍA LIMPIA EN L.A. POWERED BY IMPULSADO POR LA EQUITY EQUIDAD

Our commitment to ensuring we include all Angelenos as we create a clean energy future is rooted in the LA100 Equity Strategies. As detailed in the Strategic Initiatives section of this report, we are translating our policy design work to new or expanded programs that leave no community behind, collectively referred to as “Powered by Equity.”

LA100 Equity Strategies

A two-year unprecedented research and community engagement effort, LA100 Equity Strategies wrapped up in 2023, offering in-depth analysis of energy-related inequities that have impacted underserved communities of Los Angeles. Under the leadership of the Board of Water and Power Commissioners, we worked with the U.S. Department of Energy’s National Renewable Energy Laboratory (NREL), which also authored LA100, and UCLA to conduct LA100 Equity Strategies. The goal was to determine intentionally-designed programs and policies that would ensure that L.A.’s underserved communities are not further burdened and receive equitable benefits as we make significant investments to transition to 100 percent clean energy.

Key priorities were identified by frontline communities that were represented by a Steering Committee and participated through surveys, meetings and in-person “listening sessions.” These priorities included:

- Affordability and burdens
- Access to and use of energy technologies, programs, and infrastructure
- Health, safety, and community resilience
- Jobs and workforce development
- Inclusive community involvement

The report cited a history of disparity in terms of clean energy programs—particularly the distribution of solar incentives and electric vehicle charging infrastructure—benefitting more affluent communities compared to disadvantaged communities. In addition, an estimated 230,000 low-income households in Los Angeles lack

access to cooling and are projected to experience the equivalent of more than two months of exposure to dangerous indoor temperatures by 2035. Multifamily building residents are at much higher risk of dangerous heat exposure. The report recommended about 50 equity strategies to address the disparities.

Learn more: LADWP.com/LA100ES

Electric Transportation for All

To ensure LADWP has the necessary capacity to support future load growth due to electrification of the transportation section, we are developing a comprehensive plan to build, operate and maintain a City-owned network of electric vehicle (EV) ‘fast-charging’ hubs across Los Angeles, including the city’s underserved communities.

To support the transition to EVs, we increased our Used EV Rebate by an additional \$2,500—raising the total rebate to \$4,000—for customers participating in the Lifeline or EZ-SAVE discount rate programs. LA100 Equity Strategies found that increasing the rebate could boost used EV adoption, adding up to 50,000 vehicles by 2035 for low-income households in Los Angeles.

We plan to add or expand equity components to a variety of other clean energy programs, including community solar, energy efficiency, job creation and training, utility distribution upgrades to support increased electrification, point-of-sale rebates for home cooling, and resiliency hubs integrated with solar, battery power and electric vehicle charging stations.



Project PowerHouse



LADWP's Project PowerHouse was launched to address the city's homeless crisis in response to Mayor Karen Bass' Executive Directive 1, declaring a state of emergency on homelessness in Los Angeles. The program prioritizes the development of 100 percent affordable housing by fast-tracking and reducing the review and approval time by 65 percent. This policy also alleviates cost burdens by waiving fees for upgrading electric service infrastructure in the public right-of-way that are necessary to power 100 percent affordable housing developments. The relief created by this policy has incentivized developers to enter into the marketplace and invest in more affordable housing. Since it was launched, the program has connected nearly 40 affordable housing developments to the city's power grid.

Learn more: LADWP.com/ProjectPowerhouse

Fair Share Power Line Extension Program

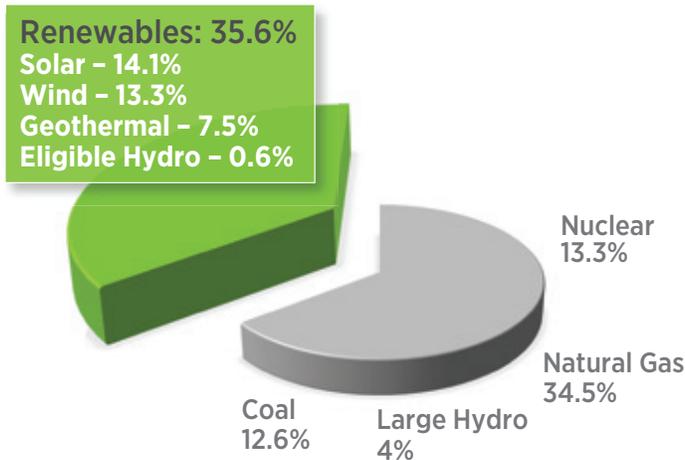


In a related program, we are helping businesses and property owners save costs for the extension of underground distribution lines in public property. Under the Fair Share Power Line Extension Program, the cost for conduits and substructures will be shared among all identified customers, not just the first customer to request the extension. This rule change is already generating cost savings and boosting economic development in communities.

Our Clean Energy Progress

Renewable Energy Highlights

In 2022, 35.6% of Los Angeles' power generation was supplied by renewable energy.



Guiding Policies

California Senate Bill 100 (SB 100) requires that all retail electricity sold in California is supplied by renewable and zero-carbon resources by the year 2045. SB 100 allows zero-carbon resources such as large hydroelectric and nuclear power along with renewable energy resources, which include wind, solar, geothermal and small hydroelectric technologies. Combustion resources fueled by renewably derived biofuels or renewably derived hydrogen are also considered zero-carbon resources.

California Senate Bill 1020 (SB 1020), passed into law in September 2022, adds interim goals to the SB 100 mandates. SB 1020 requires that at least 90 percent of retail energy sales come from renewable energy and zero-carbon electricity by the end of 2035 and 95 percent by the end of 2040 as milestones to an eventual target of 100 percent by 2045. Additionally, all electricity procured to serve California state agencies must be supplied by renewable or clean energy resources by the end of 2035.

City of Los Angeles Targets: Under the direction of the Mayor and City Council, the City of Los Angeles has set accelerated goals to supply 100 percent clean energy for Los Angeles by 2035, and 80 percent renewable energy by 2030. These goals were based on the findings of the LA100 Study, completed in 2021, which offered several scenarios for achieving 100 percent

clean energy by 2045, meeting the state target, and by 2035 in the fastest scenario.

Learn more: LADWP.com/LA100

Determining a Path

The Strategic Long-Term Resource Plan (SLTRP) is our roadmap for achieving a clean energy future based on the core principles and key considerations of environmental benefits and equity, reliability and resiliency, and affordability and rate impacts.

Completed and approved in July 2023, the 2022 SLTRP incorporates community and stakeholder input and builds upon the LA100 Study findings. Using the same methodology and modeling as LA100, the 2022 SLTRP recommended a path that would achieve the interim goal of 80 percent renewables by 2030, rather than 90 percent by 2030, and was the least expensive of three options analyzed. The recommended path most closely adhered to the City Council motion to achieve 100 percent carbon-free energy by 2035 in a way that is equitable and has minimal adverse impact on ratepayers.

This year, LADWP will begin work on the 2024 SLTRP, which will incorporate the findings of the LA100 Equity Strategies study, making equity a focus of our clean energy future. The 2024 SLTRP will also analyze real-world constraints, such as the workforce required to build out the resources necessary as well as additional assumptions regarding the availability of technology such as green hydrogen turbines. The study will further investigate supply chain disruptions that have arisen during and after the pandemic, impacting the availability of renewable and energy storage resources. The next SLTRP will also look more in-depth at the impact our clean energy transition on rate affordability.

Learn more: LADWP.com/SLTRP

Carbon Reduction Achievements

In 2016, LADWP achieved the target set by California Senate Bill 32 to reduce greenhouse gas (GHG) emissions to 40 percent below the 1990 baseline level by 2030. LADWP met and exceeded this target 14 years ahead of the deadline. By the end of 2022, L.A.'s power portfolio was 52 percent carbon-free and our GHG emissions level was estimated to be 7 million metric tons (MMT)—approximately 60 percent below our 1990 emissions baseline of 17.9 MMT.



Green Hydrogen Pathways

Intermountain Power Project

The Intermountain Power Project (IPP), which is the last remaining coal power plant in L.A.'s energy portfolio, is slated to stop using coal fuel in mid-2025. Working with our partners in the Intermountain Power Agency (IPA), which owns IPP, we are developing a new state-of-the-art 840 MW combined cycle generating system that will be capable of using up to 30 percent green hydrogen as a fuel source beginning the first day of operation, and be capable of using up to 100 percent by 2045. As of October 2023, overall construction of the new generating units was 35 percent complete.

The new IPP will also feature a seasonal energy storage system, located in nearby caverns built within a giant salt dome, that will hold up to 300,000 MWh of renewable hydrogen for months at a time. Construction of the new generating facility, including the technology to convert renewable energy into green hydrogen, is underway. The IPA has also established an initial contract to secure a portion of the underground salt cavern storage capacity. When completed in mid-2025, IPP will lead the way to making green hydrogen an economically viable carbon-free power supply.

Scattergood Green Hydrogen Modernization Project

LADWP plans to implement a green hydrogen-ready generating system to replace the generation currently provided by Scattergood Generating Station Units 1 and 2. This initiative enables LADWP to enhance carbon-free generation, decrease greenhouse gas emissions, and discontinue the use of ocean water cooling, a process known as once-through cooling (OTC). The new units will have the capability to utilize 30 percent green hydrogen blended with natural gas from the first day of operation. Our aim is to escalate the utilization of green hydrogen as turbine technology and infrastructure advances, with the ultimate goal of achieving 100 percent green hydrogen fuel as soon as it becomes technically and practically feasible. Moreover, this project will ensure Scattergood's compliance with the State Water Resources Control Board's OTC Policy by the December 31, 2029 deadline. Additionally, it will contribute to environmental justice by granting the flexibility necessary to curtail emissions throughout the region.

Federal Funds Boost L.A.'s Hydrogen Hub

LADWP's efforts to achieve 100 percent clean and reliable power received a significant boost from a U.S. Department of Energy Hydrogen Hub grant announced by Mayor Karen Bass in October 2023 to build a greener Los Angeles. The funding for Los Angeles, part of a statewide \$1.2 billion Hydrogen Hub grant, will support zero-emissions projects at the Port of Los Angeles and contribute toward LADWP's first green hydrogen power plant in the Los Angeles basin. The grant will help transition the natural gas-powered Scattergood Generating Station in Playa del Rey to operate with green hydrogen power.

Transitioning to green hydrogen from fossil fuel power generation is a key pillar of LADWP's strategy to ensure our future power grid is clean, equitable and reliable. As federal incentives and other market and technology drivers become available, LADWP anticipates advancing in-basin projects that will safely and reliably achieve deep decarbonization of the power sector, while instituting best practices for community outreach and engagement.



Expanding Local Solar

We continue to ramp up our distributed energy resources (DER) equitably to support the transition to 100 percent clean power. DERs are small-scale energy resources connected to the local distribution system. They include local solar projects on rooftops in Los Angeles as well as battery storage, microgrids, and demand management programs employed by customers.

As LADWP designs new programs to attract customers, we will continue to prioritize underserved communities and low-income customers to foster energy equity. To that end, we offer our Shared Solar Program (SSP) to residential customers living in multifamily dwellings, who typically would not be able to access their own solar energy. SSP subscribers may purchase a fixed amount of energy supplied by solar power plants constructed in or near Los Angeles. In addition, LADWP has resumed the Solar Rooftops Program (SRP) through which we will install solar panel systems on participants' rooftops with no upfront costs. LADWP receives the energy from these systems and provides participants with monthly payments for lease of their rooftops. Through SRP, customers can help our city meet our renewable energy goals.

Local Solar – By the Numbers

As of fiscal year 2022-23

Over 76,000 customer-installed solar systems are connected to the grid. We have a total of 678 MW of customer and utility-built local solar.

Net Energy Metering

- \$338.9 million in solar incentives for 34,601 systems since the program launch in 1999*
- \$288 million in incentives for 279.5 MW under state legislated program SB1*
- Total net-metered solar (including projects funded through the Solar Incentive Program): 576.6 MW from 75,874 systems, generating approximately 949,591 MWh per year, equivalent to serving energy to 166,595 homes for one year.

*Includes incentives processed after the SIP program closed on December 31, 2018

Feed-in Tariff (FiT) Program

- 138 renewable local solar projects in service, totaling 94.2 MW
- 2 additional projects in the Owens Valley totaling 4 MW of capacity and 2 renewable landfill gas projects with a capacity of 4 MW
- Total installed FiT program capacity: 102.2 MW
- The amount of energy generated from these projects is approximately 168,311 MWh per year, equivalent to serving power to 29,528 homes for one year.

Virtual Net Energy Metering Pilot (VNEM) Program

- 2 projects are active and under development with a total capacity of 0.28 MW.

Solar Rooftops Program

- 33 installations completed
- 112.2 kW of solar power being delivered
- 9 projects totaling 37.2 kW in the queue for construction

Shared Solar Program

- 3,070 customers enrolled
- 271,500 kWh per month supplied

Utility Built Solar

- 46 in-basin solar projects totaling 7.3 MW
- 49 installations in-service totaling 26.3 MW. The largest installations are 8.5 MW at Pine Tree and 10 MW at Adelanto.
- 26 MW worth of projects are being prioritized and are in queue to be built across LADWP, Recreation and Parks, and General Service Division owned facilities.
- Upcoming and current facilities will likely include Battery Energy Storage Systems and EV chargers along with solar photovoltaic

Learn more: [LADWP.com/Solar](https://www.ladwp.com/Solar)

Expanding Energy Storage and Demand Response

Energy Storage

Building over 1,000 MW of energy storage in-basin and out-of-basin by 2030, is critical to L.A. clean energy future, as called for by the LA100 study. We are evaluating proposals for new energy storage projects at the Beacon Energy Storage Center, situated near several of our renewable facilities in the Mojave Desert. Additionally, we have completed the demolition of Haynes Units 3 through 6 to make room for future energy storage systems. In partnership with the Electric Power Research Institute (EPRI) and other utilities, LADWP is applying for both federal and state funding to develop new energy storage projects. This funding will decrease overall project costs to minimize the impact to customer rates.

We expect to increase the use of our Castaic Pumped Hydropower Plant to provide more pumped storage as we integrate additional renewable energy into our system. All future large solar power agreements will incorporate energy storage. We are encouraging the development of customer “behind-the-meter” energy

storage systems which are tied to the local distribution system. As of fall 2023, 34 MW of “behind-the-meter” energy storage systems have been installed and interconnected to our system with more than 12 MW pending interconnection.

Flexible Demand

As load growth expands, LADWP must ensure these loads do not impact grid stability and reliability. In order to achieve this, we will need to shift customer energy usage away from the peak periods. Offering demand response (DR) programs with attractive incentives encourages customers to adopt strategies to shift their energy usage away from the peak demand periods while reducing their electric bills.

In 2023, our commercial demand response program enrolled over 60 customers, who shifted 1,252 MWh of energy use away from peak periods. That amount is equivalent to offsetting power for 220 homes for one year.

Learn more: [LADWP.com/DRProgram](https://www.ladwp.com/DRProgram)





Charging Ahead

Highlights

As of fiscal year 2022-23

Electric Vehicles (EVs) and Charging Infrastructure in the City of Los Angeles

- 137,280 estimated registered EVs*
- 24,397 estimated commercial EV chargers:
 - 4,408 publicly accessible
 - 19,989 non-public commercial EV chargers
- 1,125 Level 2 and 47 DCFCs installed and in-service at LADWP facilities, including 18 publicly accessible DCFCs

EV Rebates

- 2,886 rebates issued for used EVs, totaling \$3.4 million
- 19,260 rebates issued for commercial EV chargers, totaling \$96.8 million
- 4,413 rebates issued for residential EV chargers, totaling \$2.3 million

*Data derived from the Electric Power Research Institutes' most recent Q3 2023 Vehicles in Operation Report

Promoting Access to EV Charging

Under the new Powered by Equity initiative, LADWP has announced plans to build out EV charging hubs across Los Angeles, including the city's underserved communities. The first two hubs will be located in Panorama City on Van Nuys Boulevard, and in Harbor Gateway, on Normandie Avenue. Both projects are expected to break ground in 2024. We continue to offer public charging stations at many facilities, including the John Ferraro Building in downtown Los Angeles, Crenshaw Customer Service Plaza, several LADWP Distributing Stations, the Los Angeles Zoo, many city libraries, and other city facilities.

The new EV charging hubs will each offer more than 20 DC fast chargers. We look forward to offering many more fast-charging stations to the community in the near future.

EV Rebate Programs

We provide incentives to encourage customers to drive EVs with enhanced rebates targeting low-income customers who apply for the Used EV and Residential EV Charger programs, as well as for commercial projects located in underserved communities. Since 2019, we have allocated over \$165 million in funding to support residential, commercial, and used EV rebates. In 2023, as recommended by the LA100 Equity Strategies study, LADWP increased the Used EV Rebates from \$2,500 to \$4,000 for customers participating in the Lifeline or EZ-SAVE discount rate programs.



Truck Electrification

LADWP will collaborate with the Port of Los Angeles and other key stakeholders to develop a strategy for truck electrification charging infrastructure. Although heavy-duty trucks account for only 5 percent of registered vehicles in Los Angeles, they account for 51 percent of emissions of nitrogen oxides and 32 percent of particulate matter (PM2.5) emissions. Furthermore, heavy-duty trucks such as fire trucks, dump trucks, fuel trucks, and long-haul tractors are expected to generate more than 90 percent of truck-related nitrogen dioxide and 8 percent of PM2.5 by 2035. Electrification of heavy-duty trucks could yield significant health benefits, especially for communities near and around high traffic areas and freight corridors.

Walking the Talk

We embraced electrification of our transportation fleet as part of our emphasis on corporate sustainability and environmental responsibility. Some of the latest and most modern EVs in the market have been purchased for use during our day-to-day operations, thanks to a “Zero Emission First” procurement policy that adheres to a City of Los Angeles directive. As of November 2023, we have 235 all-electric vehicles in our fleet, including 15 Ford F-150 Lightning trucks, nine Chevy

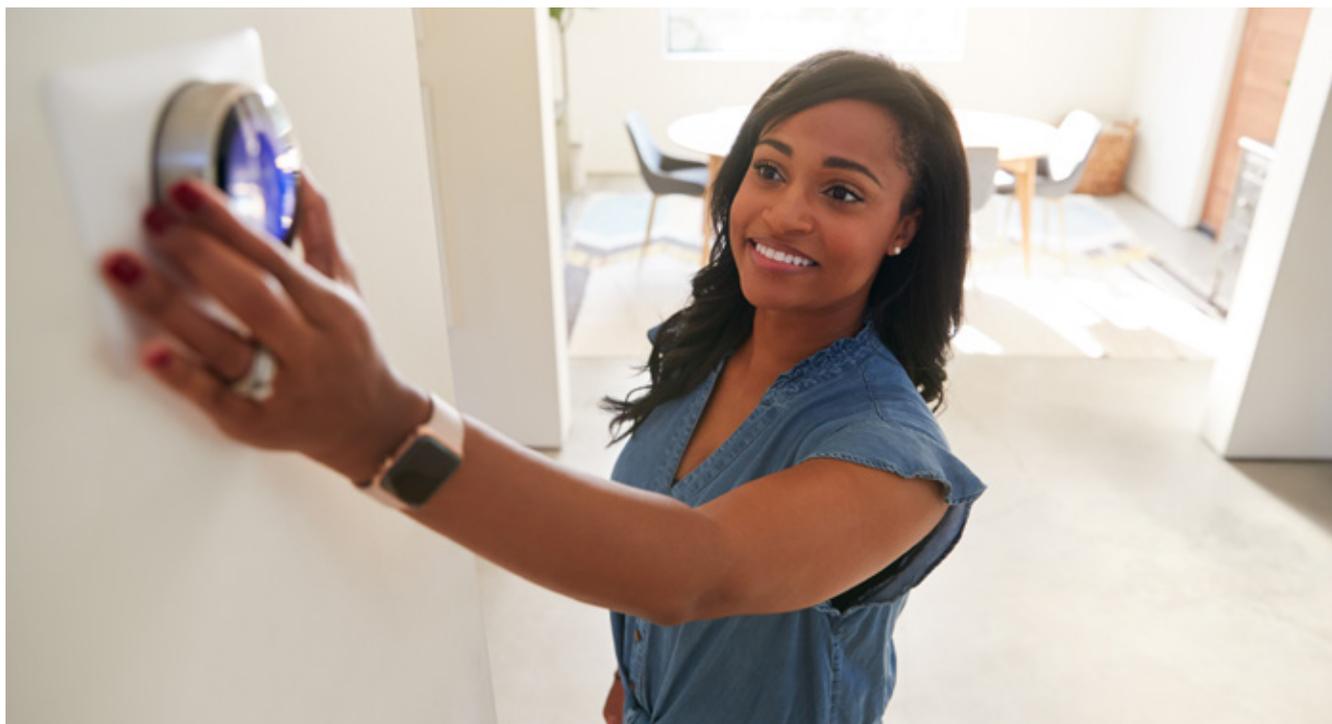
Silverado trucks, and a variety of EV passenger cars and SUVs. In addition, LADWP has purchased two all-electric bucket trucks, the first of their kind on the West Coast.

With a state mandate to achieve 100 percent of medium- and heavy-duty government vehicles to be zero emissions by 2027, we are taking steps to ensure adequate charging is available to support our electrified fleet. In addition to installing more chargers, we are exploring other options to increase access and utilization of chargers for our fleet.

LADWP plays a vital role in converting our city’s car culture into clean, zero-emission vehicles and transit. As the city’s electric service provider, we offer incentives to encourage customers to drive electric while expanding the necessary charging infrastructure to make EVs a reliable, convenient, and affordable mode of transportation for Angelenos and visitors.

We are on track to meet our next electric transportation milestones of 45,000 commercial EV chargers and 250,000 EVs in the City of Los Angeles by 2025, providing zero-emission transportation infrastructure for the 2028 Summer Olympic and Paralympic Games. The city’s EV count is on the road to achieve 120,000 chargers to support 750,000 EVs by 2030.





Investing in Energy Efficiency

Energy efficiency provides a cost-effective way to reduce GHG emissions while supporting our clean energy transition. Energy efficiency supports system reliability and resiliency while enabling customers to benefit equitably and save on their electric bill. A core component and important goal of equitable electrification is to deliver economic benefits that empower our local communities and uplift all segments of society.

Guiding Principles

LADWP applies the following guiding principles for launching new and redesigned energy efficiency programs:

- Providing opportunities for all customer sectors to equally benefit from cost-effective energy efficiency via intentional design and promotion of energy efficiency programs.
- Targeting hard-to-reach customers, such as low-income residents, under-resourced communities, and small businesses.
- Leveraging programs to support jobs and workforce development.
- Expanding education, accessibility, and program participation while working collaboratively with partner agencies on outreach and education to reach a broad and diverse customer base.
- Aiding customers in leveraging state and federal funding from programs such as the Inflation

Reduction Act for the installation of efficiency measures.

- Operating transparently and reporting results regularly.

Energy Efficiency Goals

We met and exceeded our target of 15 percent cumulative energy savings from 2010 through 2020, representing 3,408 GWh of independently verified savings—enough to offset the electricity needs of 564,500 homes and avoid over 1 million metric tons of GHG emissions. According to the 2022 SLTRP, LADWP is projected to maintain the same pace of reducing energy use in Los Angeles with a cumulative savings of 3,140 GWh by 2035, surpassing the efficiency levels projected by the LA100 study.

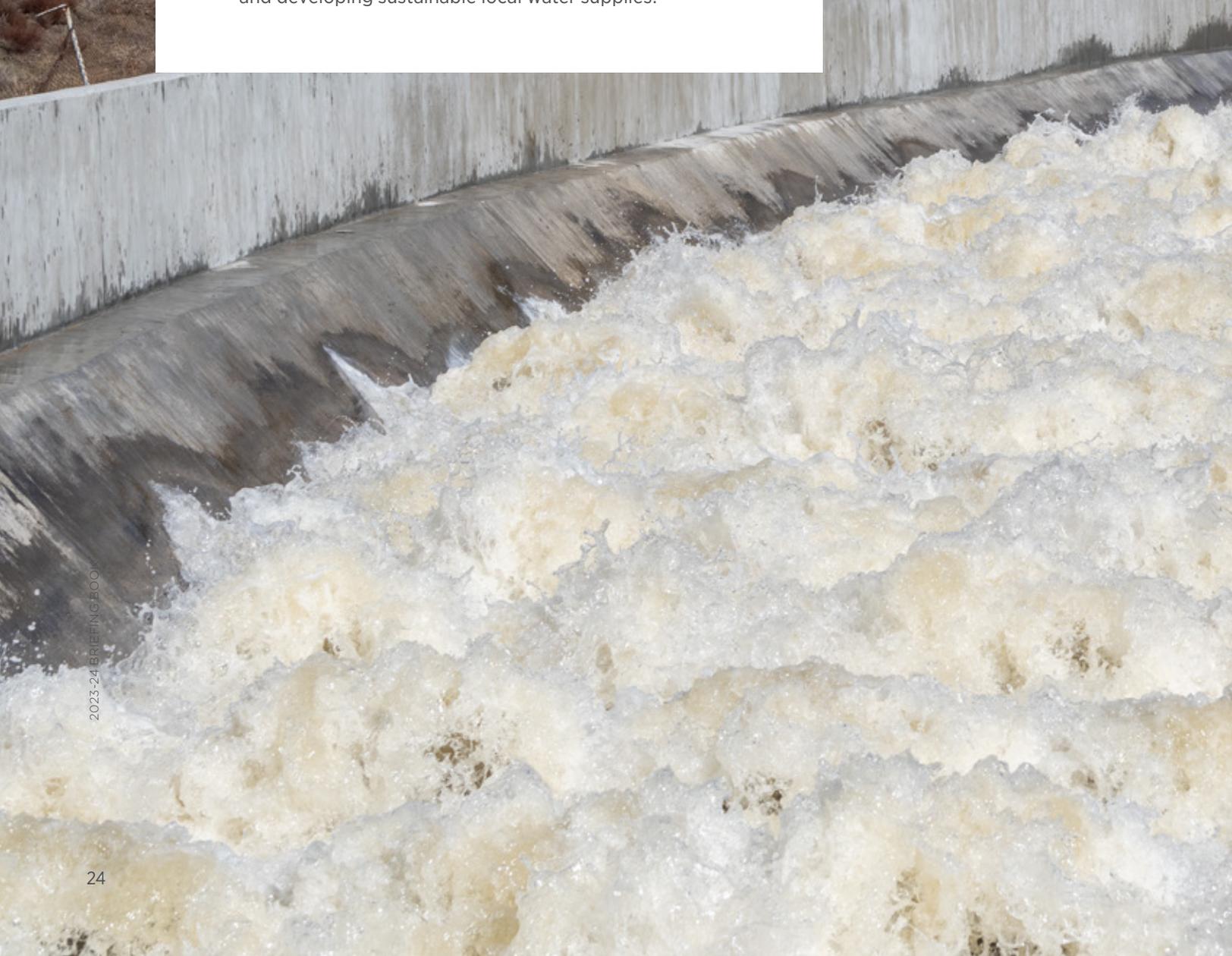
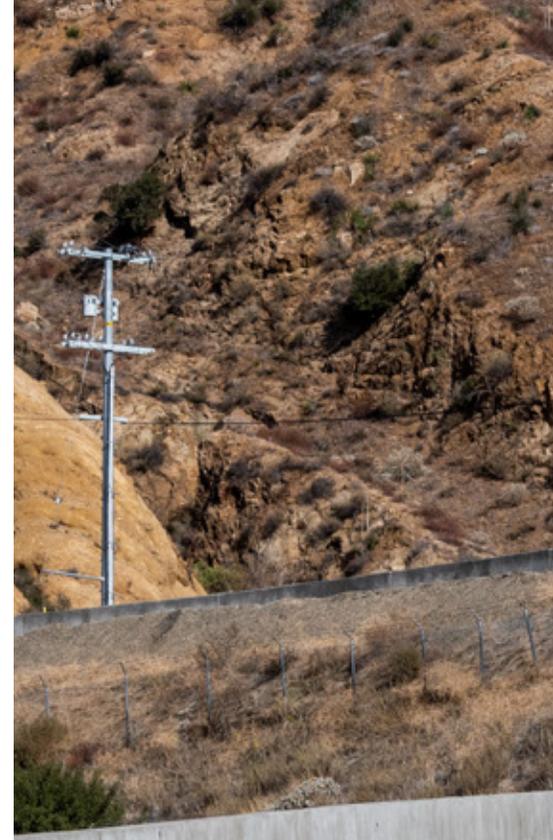
Building Electrification

Converting homes and other buildings to electricity is critical for meeting California's ambitious decarbonization goals. LADWP continues to play an active role with partner agencies and organizations to drive building electrification. To support our city's clean energy goals and provide savings for our customers, LADWP is committed to promoting zero-carbon new construction projects and making high-efficiency electric heating, ventilation and air conditioning (HVAC) technology more accessible and affordable to all Angelenos.

Water for L.A.

LADWP's Water System supports the vitality and sustainability of Los Angeles by providing our customers and the communities we serve with reliable, high quality and competitively priced water services in a safe and environmentally responsible manner. We are the nation's second largest municipal water utility. In fiscal year 2022-23, we supplied approximately 140 billion gallons of water, and an average of more than 370 million gallons per day (MGD), to 741,218 water service connections.

LADWP has a strong history of water resources management. We have continually provided reliable, high-quality water as Los Angeles has grown from a population of 102,000 in 1902 to nearly four million today. In addition, our customers have made efficient water use a way of life. Our Water System is committed to continuing to be a national and global leader in innovative water management by focusing on three key areas: the safety of drinking water, reliability of water infrastructure, and developing sustainable local water supplies.





Water System

Los Angeles' Water Sources

Delta

Sierra Nevada Mountains

State Water Project

Los Angeles Aqueduct

Colorado River Aqueduct

City of Los Angeles
Stormwater, Groundwater,
Water Recycling, and Conservation



Water Facts

Approved Water Budget

(FY 2023-24)

- \$2** billion total
- \$700** million for operations and maintenance
- \$1** billion for capital projects
- \$300** million for Groundwater

Water Use (FY 2022-23)

101 average gallons per capita per day (GPCD)

Residential Customers

(FY 2022-23)

- 281,853** acre-feet per year or
- 252** million gallons per day (MGD)

Commercial/Industrial/Institutional Customers

(FY 2022-23)

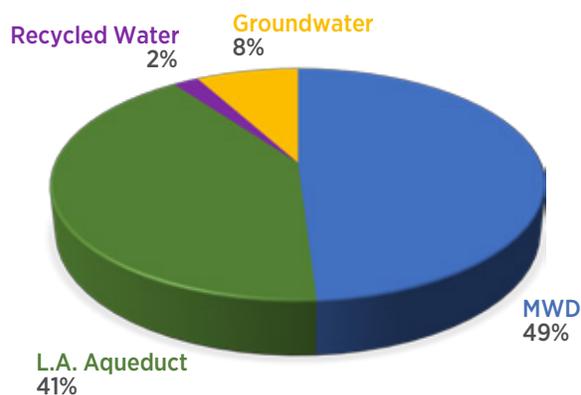
- 127,610** acre-feet per year or
- 114** MGD

Annual Water Supplied to Customers (FY 2022-23)

- 144** billion gallons
- 741,218** active water service connections

Water Supply Sources

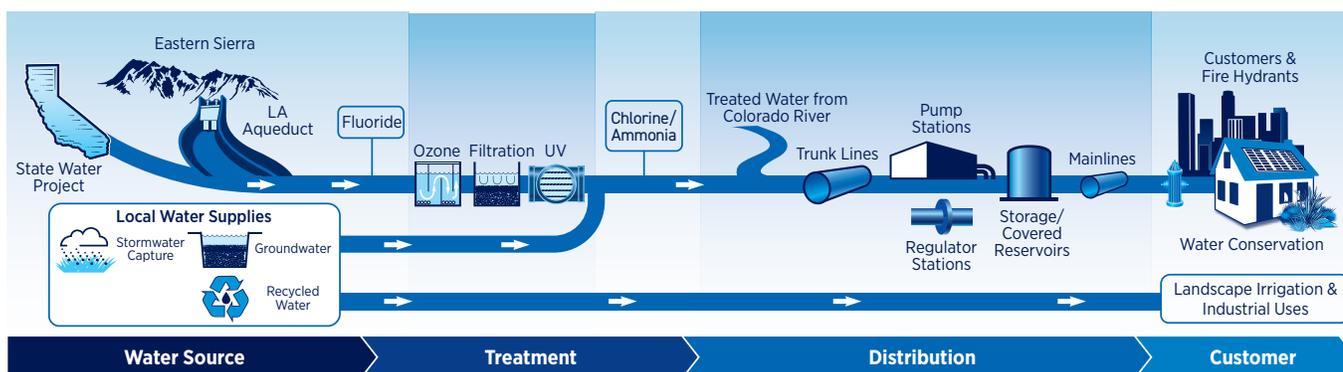
(5-year average, FY 2019-2023)



Water System Infrastructure

- 117** Tanks and Reservoirs
- 86** Pump Stations
- 9** Ammoniation Stations
- 19** Chlorination Stations
- 354** Regulator and Relief Stations
- 100** Service Zones
- 7,341** Distribution Mains and Trunk Lines (miles)
- 61,122** Fire Hydrants
- 323,546** Total Storage Capacity (acre-feet)
(In-city and along the L.A. Aqueduct)

For reference, an acre-foot of water is roughly equivalent to one foot of water covering a football field.





Water Reliability and Resiliency

Upgrading Water Infrastructure

LADWP maintains a vast water system of approximately 7,341 miles of mainlines and trunk lines to deliver water to Los Angeles residents and businesses for their daily needs. A large percentage of our pipe was installed at the turn of the last century, and more than 30 percent of LADWP's mainlines are over 80 years old.

Our Asset Management Program allows us to monitor, maintain, and upgrade or replace infrastructure strategically and in the most optimal way to minimize impacts to customers. Using data and field assessments, we strategically prioritize the replacement of aging infrastructure. LADWP has steadily increased the replacement of aging distribution pipes, with a long-term goal of achieving a 150-per-year replacement cycle. For fiscal year 2023-24, our target is to replace 225,000 feet of mainline and 6,900 feet of trunk lines as well as upgrade or replace portions of the Los Angeles Aqueduct, tanks and reservoirs, pump stations, pressure regulating stations, system valves, water meters, and other infrastructure improvements.

Seismic Resiliency

We are a national leader in seismic resiliency with the installation of the nation's first earthquake resilient pipe (ERP) in 2013. ERP is specially designed ductile iron pipe with seismic joints and welded steel pipeline. We

have steadily expanded our ERP network, focusing on critical locations within the water distribution system that are most vulnerable to large ground movement. Our goal is to strengthen the resilience of Los Angeles' water supply in the event of a major seismic event or other natural disaster.

LADWP has laid 49 miles of ERP, with additional installations planned as part of future infrastructure replacement projects.

LADWP is continuing the seismic improvement program for the dams and reservoirs along the Los Angeles Aqueduct to strengthen the resiliency of this precious water supply. North Haiwee Dam No.2 is currently being constructed to replace the North Haiwee Dam, and Tinemaha Dam Seismic Replacement Project is in the final planning phase.

Leak Rate

LADWP maintains a high level of water service reliability. Due to our targeted efforts to replace pipe in areas with the highest leak density, our rate of pipe leaks was less than 19 leaks per 100 miles of pipeline in fiscal year 2022-23—well below the national average of 25 leaks per 100 miles of pipes.



Water Infrastructure Upgrades—At a Glance

Infrastructure Replacements	FY 2022-23 Goals	FY 2022-23 Achievements	FY 2023-24 Goals
Distribution mainlines (pipes 20 inches or less in diameter)	210,000 feet	209,904* feet	225,000 feet
Trunk lines (pipes 20 inches or greater in diameter)	11,315 feet	15,660 feet	6,900 feet
Large valves	5	8**	5
Pressure regulator stations	8	13	8
Pumps/motors	12	20	12
Small meters	33,500	30,500*	34,000

*Slightly below goal due to inclement weather.

**Additional large valves were replaced as part of leak repairs, mainline and trunk line replacement programs.

River Supply Conduit Unit 7

Completed in October 2023, the River Supply Conduit Improvement Upper Reach Unit 7 Project (RSC7) consists of installing 13,325 feet of 78-inch diameter welded steel pipeline, primarily through tunneling methods. Located in the Burbank area, the main tunnel begins at Johnny Carson Park South, south of the 134 Freeway in Burbank, and continues northwest under the Whitnall Highway to join with RSC Unit 6 near Biloxi Avenue and West Burbank Boulevard. RSC7 is a key project that will help ensure future water supply reliability. This new trunk line replaces part of the existing RSC, which was installed in the 1940s.

Learn more: LADWP.com/RSC7

Century Trunk Line Unit 1

The Century Trunk Line Unit 1 Project involved installing 11,000 feet of 24-, 36- and 48-inch diameter ERP through open trench and pipe-jacking methods along Century Boulevard, Sepulveda Boulevard and 98th Street, in the vicinity of the Los Angeles International Airport. The new trunk line is a key water artery to increase resiliency during earthquakes. Completed in October 2023, it replaced the existing 1937 welded steel pipe, which was operating past its useful service life.

Learn more: LADWP.com/CenturyTrunkLine

City Trunk Line South Unit 3

The City Trunk Line South Unit 3 Project is the third of the six units needed to complete the nine-mile City Trunk Line South. Completed in December 2023, the project consists of installing 10,250 feet of 60-inch diameter welded steel pipeline through open trench and pipe-jacking methods along Whitsett Avenue in North Hollywood. The new portion of the City Trunk Line has replaced a portion of the existing riveted steel 1914-era pipe, located on Coldwater Canyon Avenue, which has a history of water leaks and breaks.

Learn more: LADWP.com/CTLS3

North Haiwee Dam No. 2 Project

Under construction since July 2021, the North Haiwee Dam No. 2 Project requires building a new earth-fill dam located 800 feet north of the existing North Haiwee Dam, which was constructed in the early 1900s and no longer meets current seismic standards. The new dam will be about 2,000 feet long and 40 feet tall. To date, the Cactus Flats Road realignment is complete, the Los Angeles Aqueduct realignment is due to be completed in June 2024, and the entire project is expected to be completed in 2028.

Learn more: LADWPEasternSierra.com/NHD2





Our Sustainable Water Future

LADWP is committed to providing a water supply that is resilient, reliable, sustainable, high quality and cost effective as we confront extremes in weather conditions and address other challenges in managing our city’s water supply.

From the Sierra Nevada and the Colorado River to the ground beneath our feet in Los Angeles, our city’s water comes from a variety of diverse sources: The Eastern Sierra and Owens Valley via the Los Angeles Aqueduct, the Northern Sierra and Sacramento-San Joaquin Delta via the State Water Project, the Colorado River via the Colorado River Aqueduct, and local water supplies including groundwater and recycled water.

In recent years we have seen intensifying swings in hydrological conditions, including the wettest years following the driest three-year period on record for California. To ensure a sustainable water supply, we continue diversifying and expanding our local water resources through increasing the use of recycled water, improving the capacity for stormwater capture, cleaning up contamination of the San Fernando groundwater basin, and expanding our capability to store water to mitigate hydrologic extremes. We work to ensure access to our critical imported supplies in addition to relying upon our customers to adopt water efficient measures, and continue their strong water conservation efforts.

Learn more: LADWP.com/UWMP

Water Conservation

When it comes to saving water, LADWP customers are heroes. Angelenos have long embraced water-saving ethics, and water conservation is at the core of multiple

strategies to ensure a sustainable water supply. Water use has dropped by 33 percent in the past 15 years as our customers have diligently maintained their water-efficient habits.

In 2022, LADWP experienced significant water shortages with a third consecutive dry year, limited water supplies imported from the Sierra Nevada Mountains, and lack of access to regional MWD storage. This prompted elevating our Emergency Water Conservation Plan to Phase 3, which reduced outdoor watering from three days to two days per week effective June 1, 2022.

Angelenos responded by further cutting back their average use from 113 to 101 GPCD through June 2023, surpassing the drought target of 105 GPCD to stay with the allocations set by MWD for that period.

The drought years were followed by record snowpack and precipitation at the start of 2023. Under the leadership of the Mayor, City Council and Board of Commissioners, customers were allowed to irrigate their landscaping three days a week as of August 2023.

LADWP continues to encourage conservation and water use efficiency through our tiered rate structure, which incentivizes lower water use. We educate customers about water conservation through various outreach and educational programs, and offer generous incentives for water-saving measures and devices, such as turf replacement and high-efficiency clothes washers. In addition, LADWP’s Water Loss Task Force continues to develop and implement strategies to detect and reduce already low water leakages in our distribution system.

Learn more: LADWP.com/WaterConservation



33%	45+	53.4 million	3.3 million+
Less per capita water use in last 15 years	Years of mandatory water conservation ordinances	Square feet of turf replaced	High-efficiency toilets, washing machines, showerheads and faucets rebated / distributed since 2015
<i>As of fiscal year ending 2023</i>			

Recycled Water, Groundwater Replenishment and Direct Potable Reuse Programs

Operation NEXT

Operation NEXT is an innovative water supply initiative being developed by LADWP in partnership with LA Sanitation and Environment (LASAN) that aims to improve the overall water supply resiliency and reliability for Los Angeles. The goal of Operation NEXT is to maximize purified recycled water from the Hyperion Water Reclamation Plant in Playa del Rey, using advanced treatment and purification processes, to create a new sustainable water resource that will diversify the supply for L.A. and the region.

Through a process known as indirect potable reuse, purified recycled water will be used to replenish the groundwater basin through a new water conveyance system developed by LADWP. At the same time, we are laying the groundwork for incorporating direct potable reuse (DPR). Pending final adoption, rules were approved by the state in December 2023 to allow and govern DPR, which is the process of integrating purified recycled water directly into the drinking water system. DPR would further expand the use of purified recycled water from Hyperion and other City water reclamation plants as a supplemental water source.

Operation NEXT is a collaboration with regional partners, including the Water Replenishment District of Southern California (WRD), MWD, and the West Basin Municipal Water District (WBMWD) that will strengthen our region's long-term water resilience and sustainability.

Operation NEXT Master Plan

LADWP is currently developing a Master Plan to independently evaluate Operation NEXT planning efforts to date, as well as the long-term planning strategy. The Master Plan includes a robust stakeholder communication and engagement process that will recommend strategies on program alternatives and potential partnerships. Throughout this process, we will work with regional partner agencies, community groups, elected officials, environmental leaders, neighborhood councils, and other stakeholders to foster a high level of collaboration and support. The Master Plan kicked off in January 2022 and will continue through the end of 2024, with support and feedback from community stakeholders and technical advisors.

Learn more: LADWP.com/OperationNext

Accomplishment: in FY 2022-23, we recycled 3.06 billion gallons of water, offsetting drinking water for 37,508 L.A. households for a year.



Groundwater Replenishment Project

In addition to Operation NEXT, LADWP is making great progress on our Los Angeles Groundwater Replenishment Project, expected to be one of the largest such facilities in the state, to provide a new sustainable and drought-resistant water source for Los Angeles. In partnership with LASAN, the project involves designing and constructing a new advanced water purification facility at the Donald C. Tillman Water Reclamation Plant in the San Fernando Valley, capable of producing up to 21,000 acre-feet per year (AFY) of purified water or enough to supply water for 250,000 residents. The new facility will produce purified water that will be distributed to nearby spreading grounds, and later extracted and blended with drinking water. The facility, which will break ground in late 2024, will be capable of purifying 100 percent of the available wastewater from the Tillman plant.

Learn more: [LADWP.com/GWR](https://ladwp.com/GWR)

Headworks Direct Potable Reuse Pilot Project

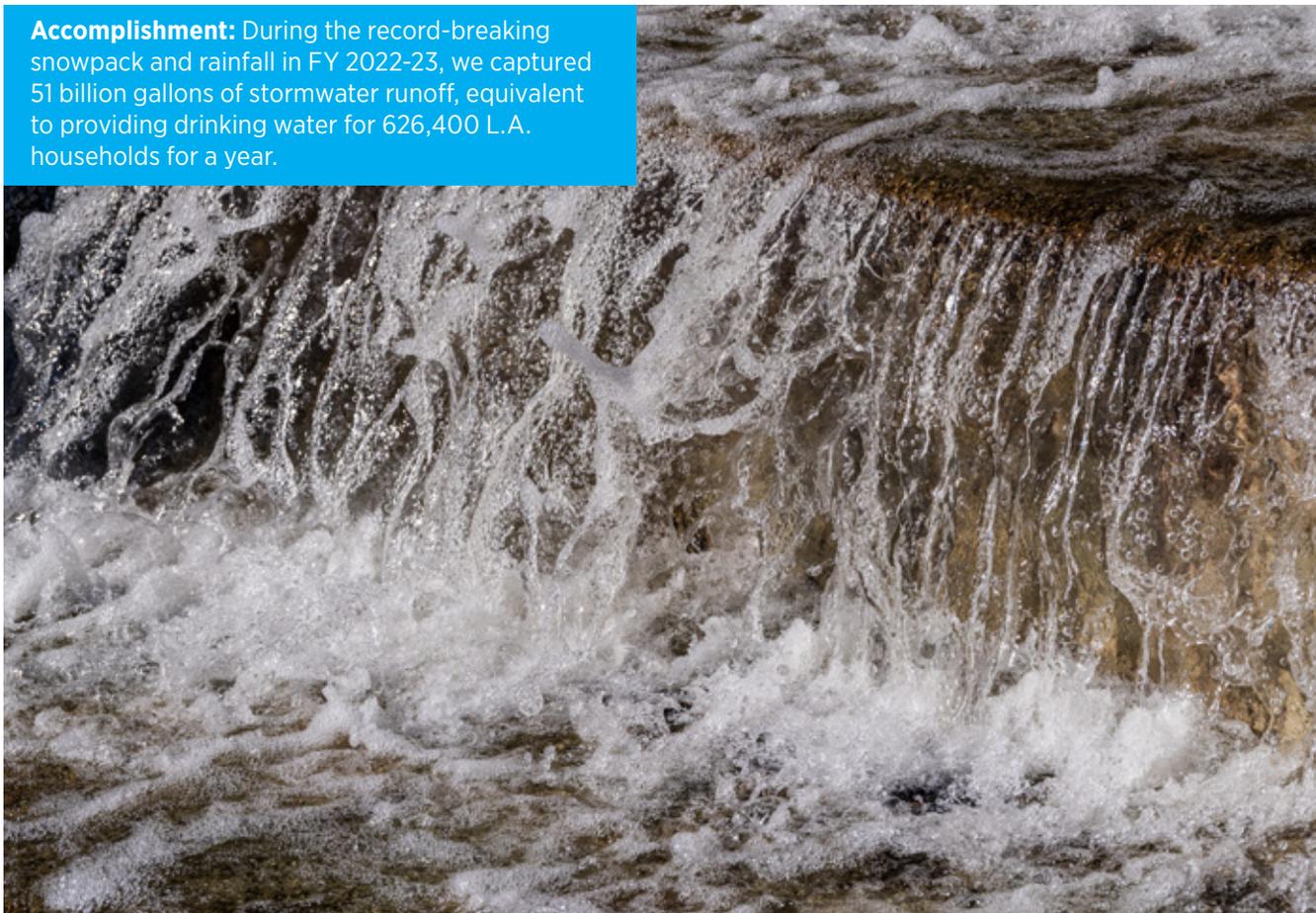
As LADWP works on the ambitious recycled water project highlighted above, we continue pursuing innovative ways to produce additional sustainable water supplies for L.A. In 2023, we completed

construction of a small scale DPR Pilot Project at the Tom LaBonge Headworks Water Complex near Griffith Park. One of the state’s first DPR facilities, the Headworks DPR Pilot includes a new cutting-edge advanced water purification facility. LADWP will test emerging technologies, facilitate regulatory approval, train LADWP operators, and demonstrate our ability to produce safe, high quality drinking water from sustainable recycled water sources. Our DPR efforts will provide preliminary research and be used to inform our future purified recycled water efforts, such as Operation NEXT, and will strengthen our partnerships and collaboration opportunities with all our stakeholders and customers we serve. Based on findings of this small scale pilot, the LADWP will construct a much larger full scale pilot tentatively scheduled to be constructed in 2029.

Stormwater Capture

Expanding our capacity for capturing stormwater runoff is a key strategy to ensure a sustainable future water supply for our city. Capturing and managing stormwater will help replenish local groundwater aquifers while reducing urban flooding. Stormwater capture also improves the quality of water that flows downstream to rivers, lakes, and the ocean.

Accomplishment: During the record-breaking snowpack and rainfall in FY 2022-23, we captured 51 billion gallons of stormwater runoff, equivalent to providing drinking water for 626,400 L.A. households for a year.





WATER SYSTEM

2023-24 BRIEFING BOOK

Our goal is to reach 48.9 billion gallons (150,000 acre-feet) of annual stormwater capture capacity by 2035, based on annual average rainfall. With over 70 new projects in the works over the next 15 years, LADWP and our partners—including the Los Angeles County Department of Public Works and Los Angeles County Flood Control District (LACFCD)—will double the city’s stormwater capture capacity. Many of these projects are being planned at our neighborhood parks that will also benefit from much-needed enhanced amenities.

Pacoima Spreading Grounds Improvement Project

The Pacoima Spreading Grounds currently captures an average of 5,200 AFY of stormwater for recharging the San Fernando Groundwater Basin. The project will remove the underlying clay layers, improve the intake canal, deepen and consolidate the existing spreading basins, which will approximately double the stormwater capture capacity to 10,500 AFY. The project is currently under construction and due to be completed by mid-2024.

Stormwater Capture Parks Program

Imagine when parks help enhance our water supply while providing our communities a taste of nature. We

plan to install infiltration systems at nine City parks to capture a total of 3,000 AFY of stormwater runoff to recharge the underlying groundwater basin. The parks include David M. Gonzales Recreation Center, Fernangeles Park, Strathern Park North, Whitsett Fields Park North, Valley Plaza Park North, Valley Plaza Park South, Alexandria Park, North Hollywood Park, and Valley Village Park. We have completed environmental documentation and are scheduled to begin construction in late 2024. The park projects will be built in phases as funding becomes available.

Tujunga Spreading Grounds Enhancement Project

Angelenos experienced the benefits of the Tujunga Spreading Grounds Enhancement project during the 2022-23 record water year. With the enhanced capacity, the Tujunga Spreading Grounds captured 26,860 acre-feet (AF) or 8.8 billion gallons of stormwater runoff, equivalent to supplying drinking water to 107,440 households. Completed in November 2021, the project had doubled the stormwater capture capacity for infiltration and recharge of the San Fernando Groundwater Basin from 8,000 AFY to 16,000 AFY. Construction included reconfiguring and deepening the existing spreading basins and installing two new high flow intakes.



Groundwater Remediation

LADWP's Groundwater Remediation Program will help protect public health and the environment by reducing exposure to chemicals, limit the migration of contaminants that prevent the full beneficial use of groundwater, and remove the contaminants from groundwater in the vicinity of the impacted well fields. The program's goal is to fully restore the City's allocation of groundwater from the San Fernando Basin (SFB)—a critical local water resource that has been limited due to historic contamination affecting nearly 50 percent of LADWP's groundwater wells. To meet these objectives, LADWP has constructed three major projects: North Hollywood West Wellhead, North Hollywood Central and Tujunga Groundwater Remediation facilities.

Learn more: [LADWP.com/Remediation](https://www.ladwp.com/Remediation)

North Hollywood West

The North Hollywood West Wellhead Treatment facility, completed in 2023, is expected to go into operation this year. Designed to treat five wells, the facility will purify up to 6.8 billion gallons of water per year. When water is drawn from the ground, it will go through a series of treatment measures, beginning with pretreatment, consisting of sand separators and cartridge filters, then

hydrogen peroxide injection and ultraviolet advanced oxidation processes. Water will continue to flow through granular activated carbon vessels for additional treatment, then be blended with other water sources as it enters the water distribution system.

North Hollywood Central and Tujunga Groundwater Remediation Facilities

Two other major treatment facilities designed to cleanup San Fernando Basin contaminated well fields, North Hollywood Central and Tujunga Groundwater Remediation facilities, broke ground in November 2020 and are expected to be operational by late summer 2024. When completed, the facilities will allow LADWP to treat up to 23 billion gallons of water per year to control the migration of contaminants. After the first two years of operation and when all remediation wells are placed in service, LADWP will treat up to 27 billion gallons of water per year.

Together, these three remediation systems will enable LADWP to pump 104,000 AFY. That amount of water represents up to 20 percent of L.A.'s water use, and will offset the City's need to purchase water from distant sources while contributing toward a sustainable and resilient local water supply.

Historic Eastern Sierra Snowpack Marked Wettest Year on Record



In 2023 the Eastern Sierra snowpack measured close to 300 percent of normal making it the wettest year in LADWP’s recorded history, eclipsing other big water years like 1952, 1983, 2017, and surpassing the 1969 record that measured at an estimated 270 percent of normal.

The record snowmelt translated into managing one million acre-feet of water along the Los Angeles Aqueduct, equivalent to filling about 493,617 Olympic-sized pools with water.

Peak Runoff by the Numbers

Acres of Land Patrolled	314,000
Miles of Canals, Waterways Cleaned/Maintained	200
Rock Delivered to Owens Lake (metric tons)	200,000
Sand Bailed from Waterways (cubic yards)	300,000
Average Daily Personnel	200
Weeks of 24/7 Shifts	6
Excavators	86
Dump Trucks	54
Highest Flow in the Owens River (cubic feet per second)	1,500
Sandbags Deployed	15,000
Media Posts and Bulletins	65
Snow Surveys	33

To learn more about the historic year, visit LADWPEasternSierra.com/news.

Eastern Sierra

LADWP maintains stewardship of nearly 315,000 acres of land throughout Inyo and Mono counties, and operates several key facilities that deliver water and power safely and reliably to Los Angeles. Our Eastern Sierra facilities include the First and Second Los Angeles Aqueducts (LAA), nine reservoirs, and hundreds of miles of canals and ditches. The first LAA, completed in 1913, runs 233 miles north of Los Angeles and was the largest water infrastructure project in the world at the time. Now, more than a century later, the LAA still provides a foundational water supply for Los Angeles.

In addition to our water and power operations, construction, and maintenance forces, we administer leases and other land-use activities, ranging from ranching and grazing to campgrounds and golf courses. We also employ nearly 350 people in the Eastern Sierra area and actively recruit new employees from the region.

Learn more: LADWPEasternSierra.com

A Changing Supply

Over the last 30 years, water delivered to Los Angeles via the LAA has been steadily reduced. In the past five years, the LAA has delivered an average of 208,000 AFY from the Owens Valley and Mono Basin. That amount ranges from 10 to 50 percent of the L.A.'s water supply depending on snowpack levels, and includes up to 16,000 AF from the Mono Basin annually. The amount of water delivered from Mono Basin fluctuates based on Mono Lake's water level, in keeping with the Mono Lake licensing agreement.

Los Angeles Aqueduct Breached

In March 2023, an extreme rain-on-snow storm caused a breach to an open-lined section of the LAA near Olancha. About 75 LADWP personnel worked around the clock to make repairs, and restore the water flowing to Los Angeles. Their work included removing spoils, backfilling and placing shotcrete as a means to protect the channel against erosion.

Managing Record Runoff

Facing the largest snowpack on record in the Eastern Sierra, LADWP took proactive measures to brace for a high volume of water runoff expected during the 2023 spring and summer snowmelt. Los Angeles Mayor Karen Bass issued an Emergency Declaration to allow LADWP to take immediate steps to protect infrastructure and aid in managing flood waters.

LADWP personnel were able to install temporary and permanent defensive measures across the LAA and at Owens Lake to manage the water, and protect the environment as well as significant investments in

infrastructure. To help provide guidance and a big-picture view of the anticipated severity of the runoff to the public, officials from Inyo County and LADWP hosted a preparedness meeting for the community and worked closely under a Joint Incident Command Communication group.

As a result of the effective preparation work, the LAA held up with minimal damage and now has improved resiliency thanks to the protective flood measures.

Protecting Owens Lake

LADWP took significant measures to protect the Owens Lake Dust Control Mitigation project, including:

- Designed and constructed 14, 30-inch diameter siphons to protect Tinemaha Dam.
- Placed large stones to armor about 14.5 miles of berm slopes adjacent to the brine pools and prevent erosion due to wave and wind action.
- Removed critical electrical equipment in low-elevation areas.
- Installed temporary protection measures for key electrical and mechanical facilities by placing temporary barriers, gravel, and sandbags.
- Installation of seven monitoring stations and cameras to track flood water in real-time.



Sustaining the Owens Valley and Mono Basin Environments

For decades, LADWP has been dedicated to working hand-in-hand with state and federal agencies and local voices to protect the environment. As a consequence of water exports, a series of mitigation projects and management activities were developed to mitigate past and future impacts and help maintain and manage L.A.'s water exports from the Eastern Sierra into the future.

Owens Valley

Under the Long-Term Water Agreement with Inyo County, we have implemented 64 mitigation projects in the Owens Valley resulting in the restoration, re-greening, and/or revegetation of land owned by the City of Los Angeles and managed by LADWP. These projects have fostered the creation and maintenance of wetland ecosystems, invasive vegetation eradication, and additional environmental benefits to the area. LADWP continues to fulfill more than 100 other environmental tasks related to protecting and sustaining the environment.





Blackrock Waterfowl Area

LADWP has implemented a five-year Interim Management and Monitoring Plan for the Blackrock Waterfowl Management Area in partnership with Inyo County. Since 2021, these efforts have enhanced habitat for waterbirds, including shorebirds, waterfowl, and wading birds within the Lower Owens River Project, and provided improved habitat for local and migratory bird populations. The project utilizes a seasonal flooding regime to flood 500 acres of habitat in the Owens Valley for wildlife benefit.

Lower Owens River

LADWP continues to manage one of the largest river restoration projects in the United States. The Lower Owens River Project consists of rewatering 62 miles of the Lower Owens River and supporting approximately 2,000 acres of wetland and aquatic habitat for wildlife and fish. Since the release of water in 2006, the Lower Owens River has evolved into a thriving ecosystem and a recreational area for hiking, kayaking, and other activities.

Owens Lake Dust Mitigation

The Owens Lake Dust Mitigation Program is the largest dust mitigation project in the United States, covering approximately 48.6 square miles of lakebed and requiring about 60,000 acre-feet of water annually. While originally constructed to meet dust mitigation requirements, the program now flourishes as a collaboration with multiple partners to meet goals for dust emissions and efficient water-use, while protecting cultural resources and minimizing impacts to habitat. Since the early 2000s, LADWP invested over \$2.5 billion in implementing the program, successfully reducing dust emissions by 99.4 percent.

Mono Basin Restoration

In 1994, the California State Water Resources Control Board issued a decision that reduced exports from the Mono Basin to restore the Mono Lake ecosystem and its surrounding streams.

This decision, which included a target long-term average water surface elevation of 6,391 feet at Mono Lake, is considered one of the greatest environmental success stories in the history of the State of California.

LADWP has invested in dozens of environmental improvement projects at Mono Lake and its tributaries to restore vegetation and wildlife habitat. In addition to water and air quality benefits from these projects, plant and animal biodiversity has increased, fish and wildlife populations have grown, and there are more acres of wetlands in the watershed than in decades past.

Tribal Relations

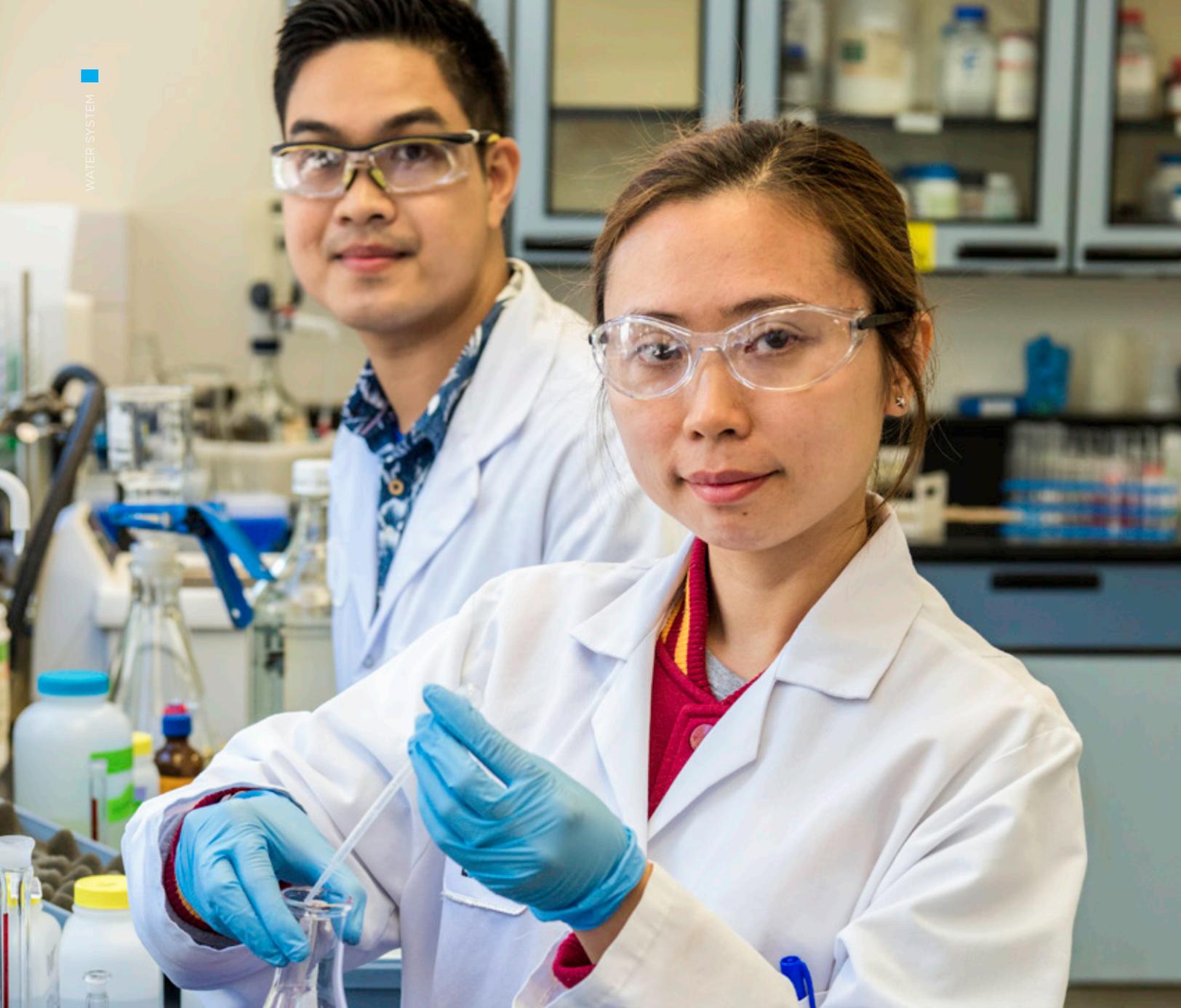
LADWP's relationship with the Owens Valley tribes spans over a 100-year history. The City of Los Angeles recognizes and appreciates tribal sovereignty along with the strong connection and traditional knowledge to the land by the local indigenous people.

In 2019 the Owens Valley Tribal Engagement Policy was adopted by the LADWP Board of Commissioners to serve as the guiding document for LADWP to develop long-term communication and meaningful partnerships with the tribes.

Community Investments

As a member of the Eastern Sierra community, we are dedicated to giving back to the region through economic development, community investments, and focusing on environmental stewardship. Over the last several decades we have grown our local participation by supporting community events, school initiatives, workforce development opportunities, and partnering with other local agencies on public outreach.





FY 2022-23 Water Quality Achievements

- Achieved full compliance with the U.S. Environmental Protection Agency (EPA) regulations to protect drinking water in reservoirs.
- Carried out a comprehensive testing program throughout the city's water system and its water sources, averaging over 33,000 samples and over 230,000 water quality test parameters during the year.
- Maintained continuous, daily operation of field testing, sampling, and lab analysis throughout the pandemic.
- Developed new water quality technology and used online water quality monitors for the L.A. Convention Center during Super Bowl 2022 and Summit of Americas events.
- Increased access to tap water across L.A. through the Hydration Station Initiative. Since its inception, the program has provided reimbursements of \$1.3 million toward hydration stations citywide.
- Responded to over 800 customer calls and conducted over 350 water quality inspections through our water quality customer sampling program.

Learn more: [LADWP.com/WaterQuality](https://www.ladwp.com/WaterQuality)

Water Quality

Ensuring Safe, High Quality Water

LADWP is committed to providing clean, safe, and cost-effective drinking water that meets all state and federal standards. The water supplied to our customers' taps has been rigorously treated, tested, and monitored by highly trained, vigilant staff dedicated to providing the highest water quality possible.

Headworks Reservoir Complex

The Headworks East and West Reservoirs at the Tom LaBonge Headworks Water Complex are major water quality infrastructure projects that provide safe storage in compliance with stringent water quality regulations regarding the treatment of surface water. The underground reservoirs are seismically resilient and replaced two open-air reservoirs, Ivanhoe and Silver Lake. Headworks has the largest underground water storage reservoirs in the Western U.S. with a combined storage capacity of 110 million gallons. They were built to comply with the Stage 2 Disinfectants and Disinfection Byproducts Rule (DBP) and the Long Term 2 Enhanced Surface Water Treatment Rule (SWTR).

Headworks Reservoir East and Headworks Reservoir West became operational in 2014 and in August 2022, respectively. Remaining work is underway to install public benefits such as landscaping and open space, and develop other facilities, including a recycled water demonstration project and a water quality laboratory.

Green Verdugo Reservoir Floating Cover Replacement

The Green Verdugo Reservoir Floating Cover Replacement project is underway to maintain water quality and water supply reliability by replacing the existing floating cover at the Green Verdugo Reservoir, as required by the SWTR to protect water stored in open-air reservoirs against contamination. The project also includes relocating reservoir infrastructure, and is estimated to be complete by May 2024.

Learn more: LADWP.com/GreenVerdugo

Expanding Hydration Stations

LADWP's Hydration Station Initiative Program seeks to promote access and public confidence in drinking our safe, high-quality tap water. The program also benefits the environment by decreasing reliance on single-use plastic water bottles. We paid approximately \$380,000 in reimbursements during fiscal year 2022-23 and entered into an agreement with the Los

Angeles Unified School District (LAUSD) to support local schools with \$1 million for hydration stations. The agreement with LAUSD also includes an outreach and education component, allowing LADWP to engage with students, staff and parents to convey the benefits of drinking LADWP's tap water.

Lead and Copper Rule

LADWP has been and continues to follow the EPA Lead and Copper Rule sampling program since 1991. During the summer of 2023, LADWP reached out to customers with homes built between 1981 and 1987, to request that they collect first-draw water samples for us to analyze for lead and copper. Regulatory requirements mandate the testing of homes built within those years due to the use of lead-based solder (a type of metal) at that time. LADWP staff collected 105 samples within the metro area of Los Angeles and submitted results to the California Division of Drinking Water in October 2023. The results were below the EPA required levels for both lead and copper. Current regulatory requirements call for conducting this sampling every three years.

The EPA is updating their regulations with the Lead and Copper Rule Improvements, which were published for public review in December 2023 and due to be finalized by October 2024.

Unregulated Contaminant Monitoring Rule

In December 2023, LADWP initiated testing for per- and polyfluoroalkyl substances (PFAS) and lithium pursuant to the fifth round of the EPA's Unregulated Contaminant Monitoring Rule (UCMR). This testing is part of a nationwide effort to collect data for contaminants without federal regulatory standards under the Safe Drinking Water Act. The results of UCMR testing may be used by the EPA to take future regulatory actions for these contaminants. LADWP's December 2023 sampling was the first of four rounds of quarterly monitoring at four locations where surface water is the source of our drinking water supply. In mid-to-late 2024, and in early 2025, we plan to run two sampling events to test for PFAS and lithium at three additional locations where groundwater is the source of our water supply.

99th Street Sand Filtration

The 99th Street Wells Filtration Plant Project is designed to improve water quality in South Los Angeles. It includes construction of a sand filtration facility to treat manganese and iron, a chloramination station, and the rehabilitation of four production wells. This treatment facility will reduce the levels of iron and manganese to comply with regulations and improve the aesthetics of the water when completed by January 2026.

Putting Customers First

Introduction

LADWP is committed to providing strong and responsive customer care and helping customers to manage their electric and water use as the cost of living remains high and many are still recovering from economic impacts of the pandemic. We believe the best way to support our customers is by engaging with them and by adapting our operations rather than just returning to business as usual.

Equitable and Affordable

As we transition to a 100 percent clean energy future and a sustainable water future, one of our highest priorities is to ensure we provide equitable and affordable service to customers. With the completion of LA100 Equity Strategies in 2023 (described on Page 14) we have identified barriers to participation in a variety of clean energy programs and are developing strategies to overcome these. We also continue to provide more assistance for customers who can least afford to pay their utility bill. In 2023, we were able to secure more than \$85 million in relief funding through the California Arrearage Payment Program (CAPP) and the City of Los Angeles Solid Resource Fee (SRF) Assistance Program. These funds provided financial assistance to approximately 150,000 residential customers to assist with electric and sanitation bills. In addition to the CAPP and SRF programs, we also worked with the state and community organizations to obtain \$61 million in relief funding. This was made possible primarily through Housing Is Key, the Low-Income Home Energy Assistance Program, and the Low Income Household Water Assistance Program. We continue to work with local service providers and community organizations to expand program awareness and increase enrollment for qualifying customers.

No Shutoff Policy

LADWP is maintaining a “no shutoff” policy for customers enrolled in either the EZ-SAVE or the Senior Lifeline Discount Program. Established by the Board of Water and Power Commissioners in November 2022, the policy aims to support residents in Los Angeles’ most income-vulnerable communities who may be struggling to pay utility debts for electricity, afford air conditioning and maintain uninterrupted water and power service. The policy also ensures that water and power service will not be shut off for customers in areas experiencing extreme weather events, such as severe heat storms that can harm public health, safety and welfare.

We also continue to assist customers with overdue payments by allowing more time and flexibility to bring their accounts current. Extended payment arrangements provide up to four years for income-qualified customers, or three years for non-income-qualified to pay past-due bills.

Level Pay

Through the Level Pay program, qualified customers are able to better manage their water and power bills by receiving a consistent and predictable monthly bill, over one year. As of December 2023, more than 12,800 customers were actively enrolled in the program.

Learn More: [LADWP.com/LevelPay](https://www.ladwp.com/LevelPay)



By the Numbers Fiscal Year 2022-23

12.6+ million

Self-service transactions

1.56+ million

Calls received

35,302

Emails handled

388,222

In-person visits

31,876

Appointments in Service Centers

5 minutes 33 seconds

Average call wait time

EZ-SAVE

To assist customers experiencing financial hardships, we streamlined the EZ-Save Program and removed the requirement to provide proof of income by allowing customers to self-certify their eligibility. As a result, 33,205 customers have been added to the program since the application process was streamlined in 2021.

Learn more: LADWP.com/CARES

Accessibility

We are actively working on a number of initiatives to improve customer support and accessibility to programs and services. In the previous year, we instituted four grants with local community service providers to pilot a community-based engagement approach to help customers enroll in various programs. We will continue to provide grants to non-profit organizations who have roots in the community to help promote LADWP initiatives, programs and offerings.

In partnership with local service providers Maravilla, PACE and Long Beach Community Action Partnership, LADWP launched our first Customer Support Saturday in December 2023 beginning at three service centers, marking the beginning of a sustained effort to offer in-person consultations throughout our service area. To increase customer engagement and foster a strong connection with the community, we instituted partnerships with community-based organizations, schools and universities, faith-based organizations and neighborhood councils to deliver valuable information about programs, services, energy and water conservation directly to the neighborhoods we serve.

LADWP is also working on a Language Access Plan to eliminate communication barriers and foster inclusivity and a sense of belonging for all our customers. This plan will ensure that our diverse customers will have access to all the information, programs and services we offer in their preferred language.

Scam Awareness and Online Reporting

Scams continue to be a growing problem for utilities across the nation, and imposters are becoming more sophisticated in their tactics. In keeping with our commitment to protect our customers, we participated in the Annual Scam Awareness Day on November 15, 2023, with a social marketing campaign inviting customers to learn more and join the conversation on social media by using #StopScams.

Customer Service Centers

LADWP maintains 15 customer service centers located in various communities throughout the city, and one in the Owens Valley. Eleven of our 14 customer service

centers fully reopened to walk-in customers in 2023. Early in 2023, our Watts and North Hills customer service centers were relocated to larger, modernized locations with ample customer parking. Three customer service centers, located on Slauson in South Los Angeles, Hollywood, and Wilmington, are available to meet with representatives by appointment only. In 2024, our Van Nuys customer service center will open a new combined solar-powered EV charging plaza for community use.

Learn more: LADWP.com/CSC

Trusted Business Partner

LADWP was among 15 utilities in the U.S. named as a 2023 Trusted Business Partner by Escalent. The utilities were selected based on having Brand Trust Index scores in the top decile of the industry, the top score within their respective benchmark segment, or a Brand Trust Index score within 20 points of the top benchmark segment score and above the industry average. We were also named a Trusted Business Partner in 2017 and 2019.

Escalent also named us as a 2023 Business Customer Champion. Utilities are selected for this award based on receiving Engaged Customer Relationship Index scores in the top decile of the industry among other criteria.

J.D. Power Customer Satisfaction Ranking

LADWP was ranked third in the West region, Midsize Segment business customer satisfaction, according to a study released by J.D. Power on November 15, 2023. The study measured satisfaction among business customers of 79 targeted U.S. electric utilities. Overall satisfaction was examined by considering factors such as: power quality and reliability, price, billing and payment, corporate citizenship, customer contact, and communications. The 2023 study is based on responses from 17,683 online interviews of business customers from February through October 2023.

2023 Utility Trends

We coordinated the 6th annual 2023 Utility Trends briefing for 196 large commercial customers on December 6, 2023. Customers were introduced to new programs, such as Commercial Energy Storage to Grid, and received updates on our projects, priorities and challenges, as well as our preparations for the LA28 Olympic and Paralympic Games. Customers also learned about proposed and enacted 2023 legislation and how the changes might impact them.

Support for Small Businesses

Our Small Business Support team assists L.A.'s small and micro business customers with their unique service needs. One of our team's key initiatives is to learn more about LADWP's roughly 200,000 diverse small business customers and foster our relationship with them. The team promotes energy and water conservation programs, while working with City and County strategic partners to promote economic growth and job creation with the goal of attracting, retaining, and expanding businesses within the City of Los Angeles. Among the offerings are bill pay assistance, help with finding property and paying fees when relocating to Los Angeles, small business resource fairs and events, and a microsite featuring industry-specific efficiency and conservation tips and programs.

Learn more: [LADWP.com/SBS](https://ladwp.com/SBS)

Learn more about industry-specific resources:
<https://smallbiz.ladwpsbs.com>

Customer Savings and Sustainability



Sustainability Awards

In spring of 2023, LADWP hosted our first in-person Sustainability Awards Program since 2019, honoring 18 of the Department's largest customers for their significant efforts and successes in sustainability over the previous year. Attendees marked customers' achievements in transportation electrification, energy efficiency, demand response, and water conservation.

The 2023 awardees' estimated reduction of almost 2,900 tons of CO2 emissions is equivalent to taking approximately 736 gasoline-powered cars off the roads and highways each year. Their decrease in annual water use by 6.25 million gallons translates to offsetting water use for about 54 homes each year. Through the installation of 296 Level 2 and 21 Level 3 EV chargers, customers helped drive Los Angeles closer to its goal of installing 45,000 commercial EV chargers by 2025.

In 2023, 18 customers were awarded honors across four categories: Energy Efficiency, Water Conservation, Electrification of Transportation, and Demand Response. Of those customers, Decron Properties Corporation, University of Southern California, and Los Angeles World Airports were recognized for their achievements in more than one category.

Learn more: [LADWP.com/SAP](https://www.ladwp.com/SAP)

2023 Sustainability Awards First Place Winners

Energy Efficiency

- **Leadership: California State University, Northridge**, saved 4,146,627 kWh annually under the Commercial Lighting Incentive Program (CLIP) by installing 21,220 Linear LED Tubes, 1,380 LED Lamps,

1,764 LED Fixtures, and 157 exterior fixtures; installing occupancy sensors, and implementing institutional tuning control strategy.

- **Impact Award: Omninet Capital**, reduced annual electric use by 21.42 percent under the Commercial Lighting Incentive Program by retrofitting 73 metal halide lamps to LED pole-mounted fixtures.

Water Conservation

- **Leadership: Takeda**, saved 3,695,120 gallons annually under the Technical Assistance Program by recycling waste stream reverse osmosis to cooling towers and irrigation.

Transportation Electrification

- **Leadership Award for Level 2 Electric Vehicle Charging: Decron Properties Corporation**, installed 123 Level 2 electric vehicle chargers under the Charge Up LA! program.
- **Leadership Award for Level 3 Electric Vehicle Charging: Los Angeles World Airports**, installed 11 medium and heavy-duty chargers under the Charge Up LA! program.

Demand Response

- **Leadership Award: Los Angeles Unified School District**, curtailed 8,750 kW by raising the chilled water temperature 2 to 4 degrees, reducing interior lighting and plug loads, and turning off various fans and parking structure lighting.
- **Impact Award: Airgas USA, LLC**, curtailed 93 percent of energy use in 2022 but shutting down process compressors.

Energy Efficiency Equity

Cool LA*

To address extreme heat faced by L.A. residents, especially our most vulnerable customers, our Board championed a new Cool LA initiative that provides generous rebates for various cooling units to help keep residents safe at an affordable cost. Under Cool LA, income-qualified, older adults, and medically-vulnerable LADWP customers are eligible to receive a \$225 rebate for the purchase of portable, window, and room air conditioners. The initiative also provides a level pay bill option to help these customers manage higher summer bills by spreading them out over the entire year.

The Cool LA rebates were available through LADWP's Efficient Product Marketplace (EPM), a convenient one-stop online store that provides pricing and rebate information for various popular energy-efficient products. In fiscal year 2022-23, over 3,000 LADWP customers purchased and received rebates for 3,275 air conditioners, resulting in \$846,954 in rebates paid.

*Cool LA rebates are on hiatus and will be relaunched in 2024.

Learn more: [LADWP.com/Cool-LA](https://www.ladwp.com/Cool-LA)

Residential Consumer Rebates

LADWP's Consumer Rebate Program promotes the use of energy efficient products by offering financial incentives to residential customers. This program provides rebates to residential customers for energy efficient products including cool roofs, Energy Star® qualified windows, heating, ventilation and air conditioning systems, pool pumps, whole house fans and other energy saving measures.

Learn more: [LADWP.com/CR](https://www.ladwp.com/CR)

Innovative Multifamily Retrofits Program

LADWP's Comprehensive Affordable Multifamily Retrofits (CAMR) program aims to help renters save on their energy bill by offering energy-efficient retrofits for owners of low-income, multifamily properties. The \$75 million program provides significant financial incentives and technical assistance to help owners and their tenants save energy and reduce costs.

Initially, property owners receive free assessments to identify efficiency opportunities. They receive incentives based on lowering greenhouse gas emissions through efficiency upgrades both in common areas and within tenants' units. The largest incentives apply to

retrofits that lower energy costs for tenants. Additional incentives for on-site solar photovoltaic systems are available to properties that achieve at least five percent energy savings.

Learn more: [LADWP.com/CAMR](https://www.ladwp.com/CAMR)



Energy Savings Programs

Free Energy Improvement Upgrades

Back in full swing following a hiatus during the pandemic, the Home Energy Improvement Program (HEIP) offers residential customers free home upgrades to improve energy and water efficiency in their homes, which can potentially lower their bills and enhance their comfort level. Through HEIP, we completed 1,740 free home upgrades in fiscal year 2022-23, resulting in an average projected savings of 1,196 kWh per home annually.

Learn more: [LADWP.com/HEIP](https://www.ladwp.com/HEIP)

Refrigerator Exchange and Recycling*

Swapping out an old refrigerator for an Energy Star® model can save serious amounts of energy and money – up to \$60 per year. Our Refrigerator Exchange and Recycle Program offers Energy Star® refrigerators in exchange for qualified older model refrigerators, free of charge, for qualified low-income customers. Throughout fiscal year 2022-23, we exchanged 1,955 refrigerators for a potential savings of more than 1,536 MWh, and removed older inefficient units to be recycled in an environmentally responsible manner.

*The Refrigerator Exchange and Recycle Program is on hiatus until late 2024.

In fiscal year 2022-23, LADWP installed free efficient lighting retrofits to more than 3,000 customers, resulting in a savings of approximately 32.7 gigawatt-hours (GWh)

Energy Efficiency for Commercial Customers

The Commercial Direct Install (CDI) Program is a free direct-install program that targets small, medium and large business customers in the LADWP service territory. The CDI Program is designed to identify and implement energy efficiency retrofits to business customers using less than 250 kW a month. The program offers direct installation of upgrades for exterior lighting, interior lighting, refrigeration, sensors, and light-emitting diode or LED exit signs. Currently, we have approximately 197,000 potential customers eligible to participate in the CDI Program.

Retrofits for Schools

A large portion of the CDI program is the direct installation of energy efficiency measures for Los Angeles Unified School District (LAUSD) facilities. We have a team of qualified staff and materials to install agreed-upon energy efficiency measures at eligible LAUSD schools. In the first three years of an agreement with LAUSD, we retrofitted 37 schools with energy efficient lighting, saving over 16.5 GWh, which equates to providing electricity to 1,561 homes per year or avoiding 4,361 metric tons of CO2 emissions.

Learn more: [LADWP.com/CDI](https://www.ladwp.com/CDI)



Water Savings Programs

Turf Replacement

Since we began the Turf Replacement Program over a decade ago, Angelenos have said goodbye to nearly 54 million square feet of grassy lawns through this program. We continue to offer a generous rebate of \$5 per square foot for up to 5,000 and 50,000 square feet for residential and commercial customers, respectively. The amount of water saved through those turf transformations is enough to supply water to more than 29,000 homes per year. Along with providing rebates for turf replacement, LADWP offers free hands-on workshops and online training classes to help customers create landscaping that is sustainable and attractive.

Learn more: LADWP.com/Landscaping

Managing Water Use

Flume: Monitor Water Use on Your Device

Our new partner in water conservation, Flume Inc. offers residential customers a way to monitor their water use and catch leaks and other water waste at home. With easy DIY installation, the device provides customers real-time access to water usage data from a smartphone or other smart device. Through a special offer, customers can receive the Flume device at a significant discount through a streamlined direct discount process; Our customers have responded enthusiastically to the program, purchasing more than 16,000 devices since the program launched in September 2022 through December 2023.

Learn more: Flumewater.com/LADWP



Home Water Use Report

Another way to help customers save water is the Home Water Use Report, which has been expanded for all single-family customers. The program guides customers in achieving water savings by sending them individual water use consumption data with tailored messaging about how to save water.

Thank you for saving water, L.A.! Through a combination of rebates and direct installation programs that we offer, our customers achieved a potential water savings of nearly 201 million gallons annually in fiscal year 2022-23—an increase of 144 percent from the previous year.

Technical Assistance

For more than three decades, the Technical Assistance Program (TAP) has offered commercial, industrial, institutional, and multifamily customers a means to save money on their water bills. The program provides savings for customers who install pre-approved water conservation equipment and technologies that result in permanently reducing their water use. The financial incentive is calculated at the rate of \$7.00 per 1,000 gallons of water saved over a two-year period.

There was a considerable uptick in applications in 2023, increasing 12-fold from 11 in FY 2021-22 to 132 in FY 2022-23. The most popular applications are for leak sensing devices that are installed on water supply lines to toilets, faucets, and showerheads. These devices wirelessly send a notification when they sense leaks before they become sizeable. An example of another type of TAP project that saved a lot of water in the past year is the installation of hundreds of underground moisture sensors that relay soil moisture content to automated landscape controllers, improving water efficiency for irrigation.

Water-Saving Rebates

To help reduce their water use, residential and commercial customers can get rebates for fixtures they use every day. For example, single-family residential customers can receive \$500 for replacing clothes washers with high-efficiency models, among many other household devices. Commercial customers can receive rebates for premium high-efficiency toilets at \$300 each. These incentives will help drive the market towards making conservation a California way of life.

Learn more:

Residential rebates: LADWP.com/RWR

Commercial rebates: LADWP.com/CWR

Connecting with Communities

Community outreach and awareness are vital to our mission of connecting with our residents and communities throughout Los Angeles. Through a variety of community events, celebrations and meetings, we work to engage our communities to raise awareness, instill trust and increase participation in our programs and activities.

LADWP participates in hundreds of community events each year with informational booths, displays and exhibits. These include major local events such as CicLAvia, Central Avenue Jazz Festival, Taste of Soul, Sherman Oaks Street Fair and Fleet Week. The events provided opportunities for us to meet our customers and community members where they are, and share important information to help them manage and pay bills as well as participate in programs to help them save money while protecting the environment.

We also connected with our communities in the Eastern Sierra through partnerships with dozens of local community groups to help share information on our efforts to protect the area's watershed as well as provide information to our Eastern Sierra 6,000-plus electric customers to help manage bills and reduce energy consumption.

As we amplified our commitment to diversity, equity and inclusion, our employees took the opportunity to give back to their communities with community cleanup events and parades. Through our presence in the community we encourage others to join the LADWP team. LADWP employees were seen marching proudly in LA Pride, Kingdom Day and Juneteenth parades across the city as well as the Mule Days Parade in the Eastern Sierra community of Bishop.

To stay connected with our communities, we hosted or participated in numerous meetings with neighborhood councils, homeowners' groups, elected officials and other agencies every month throughout the city. Our presence at these meetings serves to gain input and educate community members about plans, programs, and construction projects or other issues that potentially impact their neighborhoods. We continued to support LADWP's water and power crews through outreach as they maintain critical infrastructure in local neighborhoods.

Throughout 2022 and 2023, we continued our outreach on LA100 Equity Strategies. In the coming year, we will work to further the LA100 Equity Strategies initiative by promoting a variety of clean energy programs, including solar utilization, energy efficiency, job creation and training, electric vehicle rebates and much more.



Digital engagement also continued to be a critical tool for us to stay connected with our customers and our communities. We maintained a strong presence on the social media platform Nextdoor, where LADWP can reach over 957,000 members and about 1,300 neighborhoods. We also stayed in contact with our communities through a monthly digital newsletter, LADWP in the Community, which reaches about 2,400 subscribers, and the quarterly LADWP in the Eastern Sierra, which reaches 1,479 subscribers.

Learn more: [LADWP.com/Community](https://www.ladwp.com/Community)

Partnerships in Education

To help students understand important STEM concepts and plan for future careers with the City of Los Angeles and LADWP, we work with schools on many educational programs in Los Angeles. We also partner with Owens Valley schools to support communities along the Los Angeles Aqueduct where LADWP has a significant presence.

In the school year 2022-23, our employees continued a 40-year tradition of partnering with the Los Angeles Unified School District (LAUSD), nonprofit education-related organizations, local schools and teachers on programs and activities to enhance education and students' learning. During the year, our education programs reached more than 130,000 students, 2,500 teachers and about 700 schools.



In spring 2023, we conducted the first in-person LADWP Science Bowl competition since 2020, bringing together some 70 volunteers and about 175 high school students. Science Bowl follows a game-show format with a moderator asking toss-up and bonus questions of two teams of four students. Questions cover college-level math, science, and technology topics. Sixteen teams compete in round-robin and double elimination tournaments. The team left standing at the end of the day is the regional champion and earns the right to represent Los Angeles at the U.S. Department of Energy National Science Bowl in Washington, D.C. in April.

Over summer 2023, we updated our electric vehicle lessons, “Charge into the EV World,” for a second time to incorporate suggestions from teachers who implemented them in their classrooms. The lessons were rolled out districtwide and to private or parochial and charter schools in fall 2022. LADWP also partners with LAUSD and an education lesson publisher to provide the EV curriculum free to local high school science classes. Since the EV lessons were piloted in spring 2022 and fully implemented during the 2022-23 school year, about 150 teachers ordered the lessons for their 15,000 students from 90 schools.

During the past school year, we co-sponsored and helped manage an intensive Environmental Teacher Institute in which educators in grades 4 to 12—mainly from our service area—came together over four Saturday sessions to learn about best instructional methods and hear from industry experts, including LADWP staff on water and energy topics. The teachers also implemented stewardship projects on these and other environmental issues with their students.

We continued a decades-long Adopt-A-School program, through which our employees lend their expertise to schools in our service area, including the Owens Valley. We are expanding to include career readiness at three high schools, emphasizing STEAM (science, technology engineering, arts and math) fields, cybersecurity as well as environmental awareness pathways. For the 2022-23 school year, our volunteers offered their expertise at 27 schools.

In late fall 2023, LADWP introduced a new pilot energy education program for elementary schools in partnership with the American Public Power Association called “Monster Detective Collective.” These digital lessons help young students learn about electricity and the work involved. The lessons use monster characters to cover information about how electricity is generated, transmitted and distributed. The lessons also cover electricity uses, safety measures, careers and public power.

Learn more: [LADWP.com/education](https://www.ladwp.com/education)



Financial Health and Competitive Rates

As a public municipal water and power utility, LADWP exists by and for our customers, who are also our owners. We develop all of our strategic plan goals and objectives so that they are achievable, measurable, and cost effective, and are designed to maintain competitive rates for our customers. LADWP is committed to meeting our operational needs and financial goals through:

- Maintaining diverse power and water sources.
- Meeting or exceeding all regulatory commitments.
- Continuing to invest in water and power system reliability.
- Maintaining competitive retail rates and financial stability.
- Improving customer service.

For fiscal year 2023-24, the budgets approved by the LADWP Board of Water and Power Commissioners are

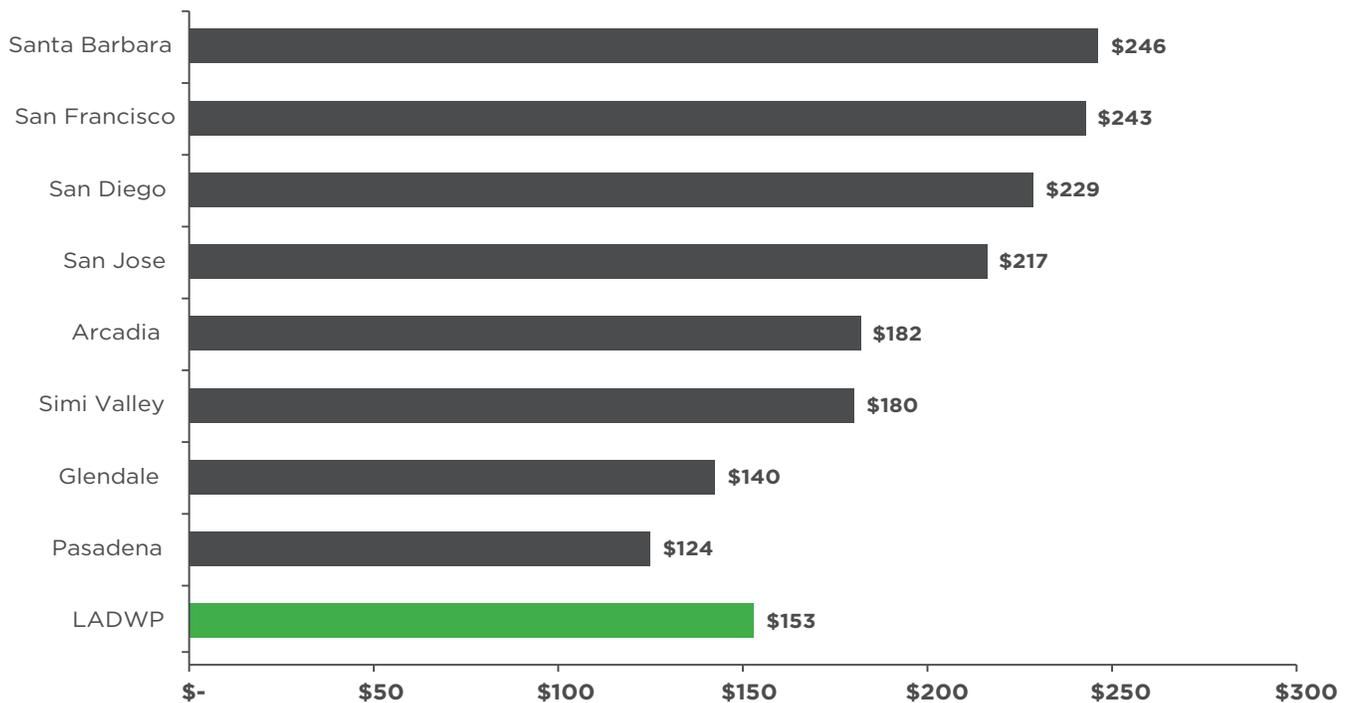
consistent with our strategic plan, reflect continued cost controls and support resources that address our customer-driven priorities.

Successful Bond Sales

Maintaining strong credit ratings is a key component of keeping water and power rates competitive. LADWP continues to maintain high bond ratings from Wall Street, which enables us to access low-interest borrowing and achieve cost-effective capital projects, saving money for our customers.

For fiscal years 2014 to 2023, LADWP refunded \$7.94 billion of debt and generated \$1.24 billion in present value savings. To maintain our financial health and protect our ratepayers, we follow Board approved financial planning metrics, including debt service coverage, full obligation coverage, operating cash, and capitalization ratios.

Our Water and Power Rates Are Competitive



Based on the midpoint of all residential electricity use of 300 kWh per month and residential water use of 10 HCF per month. Updated as of January 1, 2024

Financial Data

These pages provide an overview of the financial activities of LADWP for fiscal years 2018-19 through 2022-2023.

For the complete financial statements:
LADWP.com/FinancialInfo

WATER SERVICES FACTS IN BRIEF

	FY 2023	FY 2022	FY 2021	FY 2020	FY 2019
Use of Water					
Average Los Angeles Population Served	3,766,109	3,802,725	3,859,192	3,975,235	3,986,031
Average daily use per capita (gallons)*	101	113	112	105	105
Water Sales for Fiscal Year (Millions of Billing Units of 100 cu. Ft)*	179.1	199.2	209.3	199.9	195.4

Water Supply (Millions of Billing Units of 100 cu. Ft.)

Local supply*	12.7	23.1	24.0	15.0	14.0
DWP Aqueduct*	80.3	30.1	55.9	127.2	136.1
MWD*	95.7	159.7	138.0	67.0	60.0
Recycled Water*	4.1	5.2	4.9	4.2	3.3
Gross Supply	192.8	218.1	222.8	213.4	213.4
Diversion from (to) local storage*	-0.2	-0.1	0.4	-0.3	-0.7
Net supply to distribution systems	192.6	218.0	223.2	213.1	212.7

Bond Ratings

Moody's/S&P**/Fitch	Aa2/AA+/AA	Aa2/AA+/AA	Aa2	Aa2/AA+/AA	Aa2/AA+/AA
KBRA**	AA+	AA+	AA+	Not Applicable	Not Applicable

ENERGY SERVICES FACTS IN BRIEF

	FY 2023	FY 2022	FY 2021	FY 2020	FY 2019
Number of Customers					
Residential	1,439,889	1,430,123	1,414,367	1,404,768	1,396,643
Commercial and Industrial	128,347	128,074	126,418	126,153	125,673
All Other	7,069	7,079	7,030	7,010	6,484
Total customers of all classes	1,575,305	1,565,276	1,547,815	1,537,931	1,528,800

Power Use

Sales to Ultimate Customers					
- kilowatt (kW) hours	21,756,063,074	21,310,156,058	20,837,903,238	21,127,502,753	21,961,382,983
Sales to Other Utilities					
- kW Hours	1,722,103,042	1,890,471,776	2,086,733,000	1,050,536,000	626,058,000
Average annual kW hours per residential customer	5,627	5,350	5,667	5,335	5,252
Net dependable capacity, megawatts	8,007	8,004	7,954	7,981	7,937

Bond Ratings

Moody's/S&P**/Fitch	Aa2/AA-/AA-	Aa2/AA-/AA-	Aa2/AA-/AA-	Aa2/AA-/AA-	Aa2/AA/AA
KBRA**	AA	AA	AA	Not Applicable	Not Applicable

WATER AND POWER (CONSOLIDATED) FINANCIAL FACTS IN BRIEF

(\$ Billions)	FY 2023	FY 2022	FY 2021	FY 2020	FY 2019
Financial Data					
Total Assets	\$33.6	\$34.3	\$30.9	\$29.0	\$28.3
Total Net Position	11.2	10.3	9.8	9.1	8.8
Total Annual Operating Revenue	6.7	6.2	5.8	5.1	5.3
Total Annual Budget	6.7	6.7	6.3	6.3	5.8
Retiree Benefits Data					
Based on Market Value of Assets					
Unfunded/(Overfunded) Pension Liability	0.6	0.6	(1.7)	1.1	0.8
Funded Pension %	96.6%	96.2%	111.1%	92.3%	94.0%
Unfunded/(Overfunded) Retiree Medical Liability	(0.3)	(0.1)	(0.3)	0.2	0.5
Funded Retiree Medical %	114.2%	106.8%	101.2%	92.5%	82.8%

* 2023 Amounts for these lines are preliminary and subject to change pending validation.

** S&P continues to rate bonds issued prior to December 2019. Starting in FY 2021, Kroll Bond Rating Agency rated the Power 2021 B Bonds and the Water 2020 B, 2020 C, and 2021 B Bonds.

WATER SERVICES SELECTED FINANCIAL DATA AND STATISTICS

(\$ Millions)	FY 2023	FY 2022	FY 2021	FY 2020	FY 2019
Operating Revenues					
Residential	\$607.5	\$673.9	\$634.8	\$537.6	\$515.2
Multi Dwelling	557.1	500.2	460.5	402.0	396.0
Commercial and Industrial	395.7	351.7	301.2	253.2	262.3
Other	101.0	80.9	67.3	82.3	80.0
Total operating revenue	\$1,661.3	\$1,606.7	\$1,463.8	\$1,275.1	\$1,253.5
Operating Income	418.0	406.5	386.9	317.3	309.1
As % of operating revenues	25.2%	25.3%	26.4%	24.9%	24.7%
Change in Net Position	\$313.2	\$232.6	\$290.6	\$208.6	\$167.2
Balance Sheet					
Net utility plant	\$10,782.6	\$10,128.1	\$9,481.9	\$8,926.0	\$8,436.8
Capital additions, net	688.9	652.3	576.8	504.5	455.8
Capitalization					
Net Position	4,230.5	3,917.2	3,684.7	3,394.0	3,185.4
Long-term debt	7,339.8	6,874.7	6,740.2	6,334.1	6,139.4
Interest on debt	217.4	207.0	208.7	218.4	214.5
Key Financial Planning Metrics					
Debt Service Ratio	1.94	1.84	2.10	1.85	1.70
Number of Days Cash on Hand	141	182	274	259	253
Debt to Capitalization %	63%	63%	64%	65%	66%
Operations					
Gallons sold (billions)	134.0	149.0	156.6	149.5	146.2
Customers - average number (thousands)	697	694	692	689	687
Average revenue per hundred cu. ft. sold (in dollars)					
Residential	\$9.68	\$8.76	\$7.66	\$7.15	\$7.07
Multiple Dwelling	9.30	7.96	7.05	6.37	6.45
Commercial and Industrial	9.35	8.08	6.95	5.89	5.94
Water Supply (millions of billing units of 100 cu. ft.)					
Local supply*	12.7	23.1	24.0	15.0	14.0
DWP Aqueduct*	80.3	30.1	55.9	127.2	136.1
Metropolitan Water District*	95.7	159.7	138.0	67.0	60.0
Recycled Water*	4.1	5.2	4.9	4.2	3.3
Gross Supply	192.8	218.1	222.8	213.4	213.4
Diversion from (to) local storage*	-0.2	-0.1	0.4	-0.3	-0.7
Net supply to distribution systems	192.6	218.0	223.2	213.1	212.7

* 2023 Amounts for these lines are preliminary and subject to change pending validation.

ENERGY SERVICES SELECTED FINANCIAL DATA AND STATISTICS

(\$ Millions)	FY 2023	FY 2022	FY 2021	FY 2020	FY 2019
Operating Revenues					
Residential	\$1,717.6	\$1,637.1	\$1,614.0	\$1,360.6	\$1,376.3
Commercial and industrial	2,857.6	2,784.7	2,492.1	2,372.5	2,560.1
Sales for resale	326.4	230.2	186.7	61.5	111.5
Other	56.9	(58.2)	(24.3)	12.7	22.9
Total Operating Revenues	\$4,958.5	\$4,593.8	\$4,268.5	\$3,807.3	\$4,070.9
Operating Income	742.2	801.0	744.1	364.0	512.3
As % of operating revenues	15.0%	17.4%	17.4%	9.6%	12.6%
Change in Net Position	\$601.8	\$307.3	\$415.6	\$90.1	\$226.9
Balance Sheet					
Net utility plant	\$14,820.2	\$14,087.6	\$13,457.8	\$12,826.9	\$12,173.8
Capital additions, net	788.7	652.1	668.5	695.2	715.1
Capitalization					
Net Position	7,026.6	6,424.9	6,117.6	5,702.0	5,611.9
Long-term debt	12,446.1	12,327.4	11,360.8	10,761.7	10,370.1
Interest on debt	399.1	371.0	359.0	370.1	355.4
Transfers to City of Los Angeles	232.0	225.0	218.4	229.9	232.6
Key Financial Planning Metrics					
Debt Service Ratio	2.82	2.44	2.60	2.11	2.40
Number of Days Cash on Hand	225.44	245.15	247.10	211.00	204.00
Debt to Capitalization %	64%	65%	65%	65%	65%
Full Obligation Ratio	2.03	1.88	1.88	1.74	1.90
Operations					
Kilowatt hours sold (billions)	23.4	23.4	23.0	22.3	22.6
Customers - average number (thousands)	1,575	1,565	1,548	1,538	1,529
Average Revenue per kWh Sold (in cents)					
Residential	22.2	22.2	20.9	18.9	18.8
Commercial and Industrial	20.5	19.8	18.9	16.9	17.5
Energy production (billions in kWh)					
Total generation	17.2	17.2	17.3	17.9	16.9
Purchases	9.1	9.4	9.0	7.3	9.0
Total production	26.3	26.6	26.3	25.2	25.9
Net system dependable capability (thousand megawatts)					
Power System-owned Facilities	5	4.7	4.7	4.8	4.8
Jointly owned and firm purchases	3	3.3	3.2	3.2	3.1
Total	8.0	8.0	7.9	8.0	7.9

2023-24

Briefing Book

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