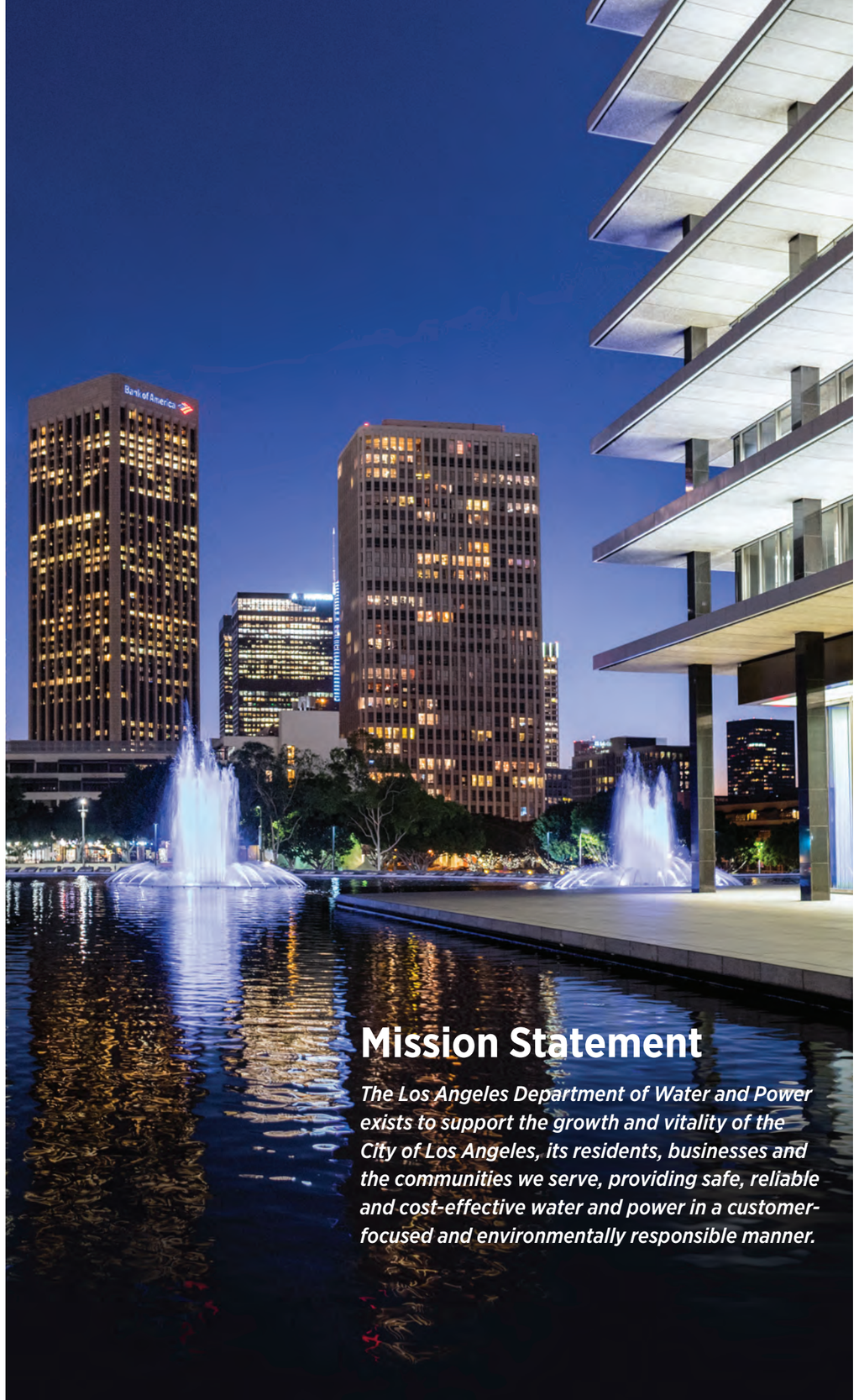
LA DWP Briefing Book 2020-21

Overview

The Los Angeles Department of Water and Power (LADWP) is the nation's largest municipal utility, with 8,019 megawatts (MW) of electric capacity and serving an average of 435 million gallons of water per day to the more than 4 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.

Contents

The LADWP Briefing Book is published by the Communications and Public Affairs Division of LADWP. This edition covers fiscal year 2019-20 and the first half of fiscal year 2020-21.



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.

Board of Water and Power Commissioners

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Our COVID-19 Response

As the worldwide COVID-19 pandemic descended upon Los Angeles, and stay-at-home requirements were instated in the city and state, LADWP's dedicated workforce remained committed to providing essential water and electric service to our customers. As essential workers, our field crews continued operations and maintenance, and emergency repairs to keep the water and power flowing around-the-clock. LADWP supported the city with our critical services, and helped customers weather the crisis financially. We pivoted to digital platforms to continue many of our customer-facing programs and services. At the same time, we quickly changed the way we work and do business to protect the health and well-being of our employees so they could keep the lights on and water flowing 24/7.

Some of the most publicly visible employees were meter readers, who continued performing their duties. The vast majority of meters were read within the three-day window for each billing cycle.

Essential Work Continued for LA

Out in the field, water and power distribution crews continued daily work on new services, maintenance and construction, and responding to emergency power outages or water main leaks. To protect their health, field crews began staggered, rotating shifts, and worked in pods to limit contact. All employees were routinely reminded to maintain proper hygiene, wear their masks and other personal protective equipment, and social distance to protect themselves, their co-workers, families and customers.

When the City of Los Angeles received over 500 trailers from FEMA to help house L.A.'s homeless population in response to COVID-19, our crews played a vital role in connecting water service to these trailers.

OUR COVID-19 RESPONSE

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Safe, High-Quality Water

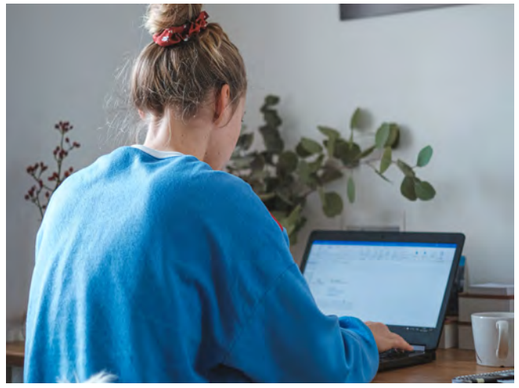
At the outset of the crisis, LADWP leadership assured customers that their water supply was safe to drink, thanks to our state-of-the-art treatment, testing, monitoring and well-maintained distribution system. Our goal was to help customers rest easy in the knowledge that they could count on us for reliable, high-quality drinking water during the pandemic.

Putting Our Customers First

To protect customers and employees, in-person services and programs that require face-to-face interactions were temporarily suspended in March 2020. As social distancing became the new normal, the Department adapted so we could continue to serve our customers. Customer service centers scheduled in-person appointments that allowed social distancing, ensuring the safety of both our employees and the public.

Workplace Safety

LADWP's custodial crews became the first line of defense in the battle against COVID-19. They increased efforts to wipe down and sanitize equipment and surfaces in commonly frequented areas of LADWP facilities. Vehicles, tools and equipment were meticulously sanitized before and after use.



Going Digital

We quickly pivoted to digital platforms to resume many customer energy efficiency and water conservation programs that otherwise involved face-to-face interactions. To name a few are the Leak Detection Program, Commercial Lighting Incentive Program, Custom Performance Program, efficiency upgrades in schools, and California Friendly Landscape training program. We began conducting many electrical installation inspections remotely, with no need for onsite inspections, to ensure a high level of business support.

LADWP CARES for Customers

LADWP temporarily stopped charging late fees and did not disconnect services because of non-payment. We promoted and expanded flexible pay plans and discount programs. In October 2020 we managed a federally funded Utility CARES Grant Program, which provided one-time payments of $500 to help customers financially impacted by COVID-19. Through the program, LADWP sent $33,657,500 in checks to 67,315 recipients.

Learn more: LADWP.com/financialassistance

Connecting with Communities

While embracing social distancing, we worked to stay close to our communities by shifting to virtual engagement through digital meeting platforms. We continued to be engaged with neighborhood councils and other community groups on significant issues and construction projects affecting their areas. During the pandemic, it has been especially important to support LADWP's essential water and power crews as they maintain critical infrastructure in local neighborhoods, and we sought to minimize impact on customers who were staying safe at home.

As LADWP's important water and power initiatives moved forward, we transitioned to virtual meetings for stakeholder engagement and outreach to support planning for these efforts, including the 2020 Urban Water Management Plan and the 100% Renewable Energy Study, known as LA100.

To broaden our outreach, we maintained a strong presence on Nextdoor, where LADWP has over 704,000 members and about 1,300 neighborhoods reaching 26% of L.A. households. We also stayed in contact with our communities through a monthly digital newsletter for subscribers. In 2020, we conducted or participated in about 240 community events and meetings.

Learn more: ladwp.com/community

During this time of COVID-19 and distance learning, LADWP has worked with our non-profit partners to continue educational outreach by transforming in-school presentations to virtual formats. We worked with our contracted company partners to offer digital editions of their printed lesson materials.

During the first half of the 2020-21 school year, we reached 75,000 students, more than 650 teachers and 250 schools.

Learn more: ladwp.com/education

Sustainability

L.A.’s Green New Deal

LADWP continues working to meet the goals of L.A.’s 2019 Sustainable City pLAn, also known as the Green New Deal, which sets robust new commitments for the city’s sustainable future. The Green New Deal sets out L.A.’s vision for a sustainable future and tackles the climate emergency with accelerated targets and new aggressive goals.

Key principles of the Green New Deal include:

- A commitment to the Paris Climate Agreement with a strategy for achieving a zero-carbon grid, zero-carbon transportation, zero-carbon buildings, zero waste, and zero-wasted water;
- Responsibility to deliver environmental justice and equity through an inclusive economy;
- Ensure that every Angeleno has the ability to join the green economy; and
- Resolve to demonstrate the art of the possible and lead the way to drive changes.

LADWP is involved in over half of the Green New Deal initiatives, which prioritize many of our sustainability initiatives through 2050: Achieving 100% renewable energy; expanding rooftop solar in the L.A. basin; expanding local water supplies and decreasing purchased water; creating a zero-carbon grid; expanding electrification of the transportation sector and the city’s building supply; and increasing water conservation and energy efficiency. Throughout these efforts, LADWP is committed to improving equity for all of L.A.’s diverse communities, using our Equity Metrics Data Initiative (EMDI) and other new initiatives to track outcomes and ensure we are accountable to our customers.

SUSTAINABILITY

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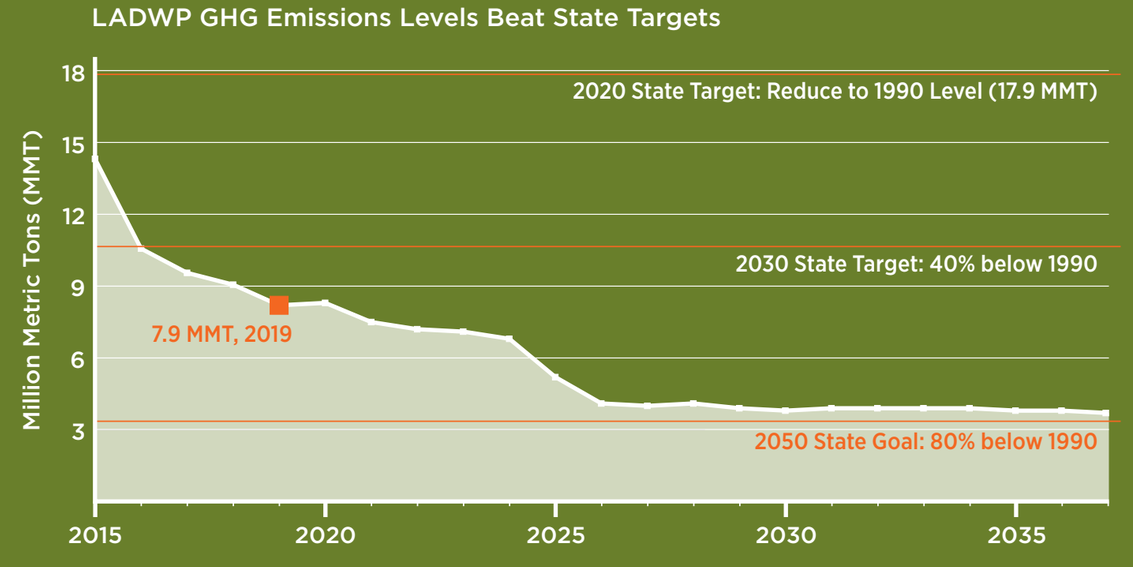
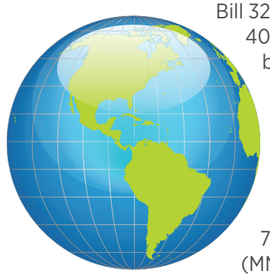


Our Carbon Reduction Progress

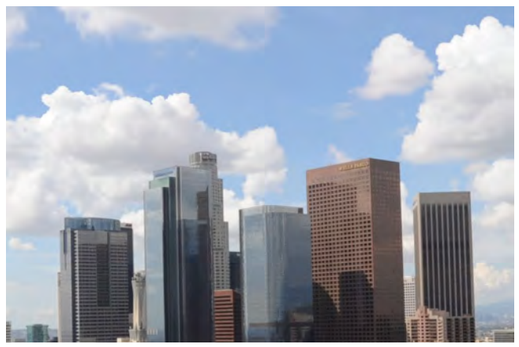
In 2016, LADWP achieved the greenhouse gas (GHG) emission reduction target set by California Senate Bill 32 to reduce GHG emissions 40% below the 1990 level by 2030. LADWP met and exceeded this target 14 years ahead of the deadline. By the end of 2019, LADWP had reduced our GHG emissions from electricity generation to 7.9 million metric tons (MMT)—approximately 56% below our 1990 emissions baseline of 17.9 MMT. By the end of 2020, L.A.'s power portfolio was 55% carbon free.



LADWP's 2017 Strategic Long-Term Resource Plan (SLTRP) forecasts that our GHG emissions in 2037 will be approximately 79% below LADWP's 1990 baseline, nearly achieving the state's long-range GHG emissions reduction target of 80% below the 1990 level by 2050. In 2021, LADWP will begin work on an updated SLTRP.

Climate Change Policy

Los Angeles and California remain leaders in climate change and clean energy policy. In 2018, California Senate Bill 100 was signed into law, establishing new goals for electricity providers to achieve 60% renewable energy by 2030 and 100% zero-carbon electricity by 2045. As of March 2021, the City of Los Angeles' goal was accelerated to achieve a 100% carbon-free grid by 2035, 10 years earlier than the state target.



Carbon Disclosure Project

LADWP has participated in the Carbon Disclosure Project's (CDP) Climate Change program for six years and recently earned our highest score ever—an "A-" grade in the global nonprofit's Climate Change Score Report. That placed the Department at the "Leadership" level. LADWP ranked higher than the North America regional average of "D," and higher than the thermal power generation sector average of "B."

The CDP's Climate Change program evaluates companies on their emission reduction leadership as well as their resiliency to the effects of climate change. LADWP also invites about 200 of our own suppliers to disclose emissions levels to CDP's supply chain program. This helps us to better understand our supply chain's resilience in a world increasingly affected by climate change.

Clean Air Community Grants

LADWP introduced the Community Emission Reduction Grant Program in 2020 to reduce emissions in communities that experience disproportionate levels of pollution, such as those surrounding Valley Generating Station in Sun Valley and Harbor Generating Station in Wilmington. Using Assembly Bill 32 funds, LADWP doubled our investment in the program from $10 million to $20 million over the next five years. The grants will support emissions reduction projects in City Council Districts 2, 6, 7, and 15. Examples include electric vehicle charging stations, energy efficiency programs, local solar, battery storage, and other clean energy projects.

L.A. Ranks No. 1 Solar City in U.S.

The City of Los Angeles ranked number one for the third straight year in the *Environment America Research & Policy Center's Shining Cities 2020* report, which covers the year 2019 and surveyed installed solar capacity within 57 of the largest U.S. cities. L.A. held the title from 2013 to 2015 and from 2017 to 2018.

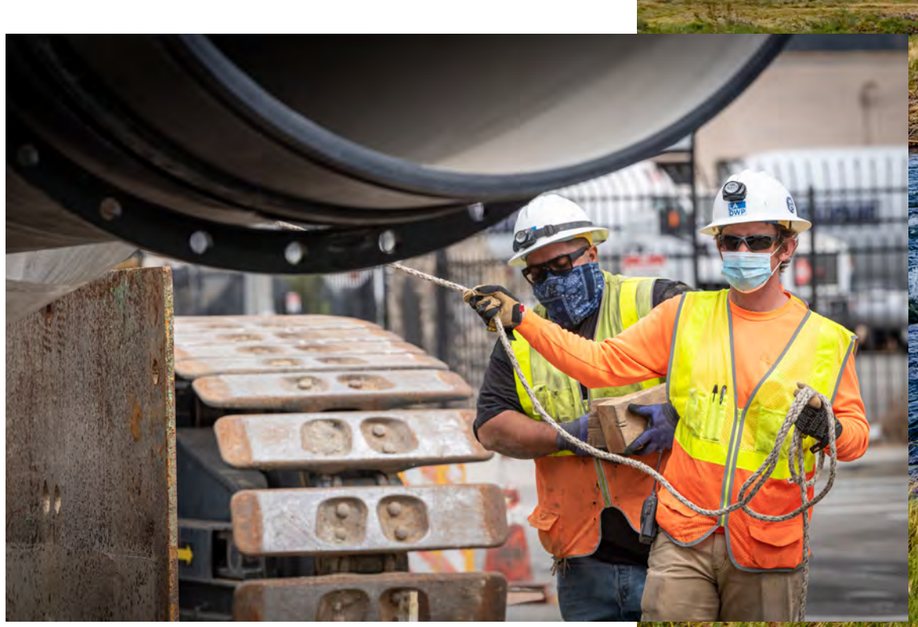
In 2019, L.A. had 483.8 MW of installed solar in 2019 —a 15% increase compared to 2018. That amount of clean energy is enough to power approximately 134,000 homes and eliminate 280,000 metric tons of greenhouse gas emissions, the equivalent of removing 60,150 gas-fueled cars off the road. The city also increased its solar PV per capita by 16.2 MW, and moved up from 105 watts per person to 121 watts per person, a 15% increase over the prior year.

Water System

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, publicly and environmentally responsible manner. We are the nation's second largest municipal water utility. In fiscal year 2019-20, we supplied approximately 159 billion gallons of water annually, and an average of 435 million gallons per day (GPD), to 735,600 water service connections.

LADWP has a strong history of water resources management. As Los Angeles has grown from a population of 142,000 in 1902 to over 4 million residents today, we continue to make efficient water use a way of life, providing reliable, resilient water supplies now and in the future.

Our Water System is committed to implementing innovative water management, and is a leader both nationally and globally by focusing on three key areas: the safety of drinking water, reliability of water infrastructure, and developing sustainable local water supplies.



WATER SYSTEM

2020-21 BRIEFING BOOK

Water System

Los Angeles' Water Sources

Water Facts

Approved Water Budget (FY 2020-21)

Total: $1.65 billion

$595 million for operations and maintenance
$816 million for capital projects
$239 million for purchased water

Water Use (FY 2019-20)

Average Daily Use Per Capita: 106 gallons

Residential Customers (FY 2019-20)

317,000 acre-feet per year or 283 million GPD

Commercial/Industrial/Institutional Customers (FY 2019-20)

136,000 acre-feet per year or 121 million GPD

Annual Water Supplied to Customers (FY 2019-20)

159 billion gallons
735,600 active water service connections

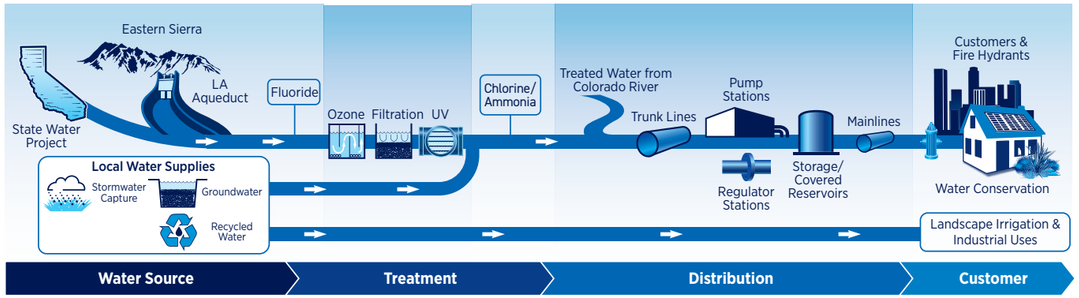
Water Supply Sources (5-year average, FY 2016-2020)

L.A. Aqueduct	**48%**
Purchased Water (MWD)	**41%**
Bay Delta	35%
Colorado River	6%
Groundwater	**9%**
Recycled Water	**2%**

Water System Infrastructure

Tanks and Reservoirs	**115**
Pump Stations	**85**
Ammoniation Stations	**9**
Chlorination Stations	**22**
Regulator and Relief Stations	**329**
System Pressure Zones	**111**
Distribution Mains and Trunk Lines (miles)	**7,340**
Fire Hydrants	**61,053**
Total Storage Capacity (acre-feet)	**323,820**

(In-basin and along the L.A. Aqueduct)



Water Reliability and Resiliency

Upgrading Water Infrastructure

LADWP maintains a vast water system with about 7,340 miles of mainlines and trunk lines, which are critical to reliably delivering high quality water to Los Angeles residents and businesses. With a large percentage of our pipe installed at the turn of the last century, we are working to accelerate the replacement and upgrade of aging water mains and riveted-steel trunk lines.

About one-quarter of LADWP's mainlines are over 80 years old, nearing the end of their useful life. LADWP has steadily increased the replacement of aging distribution pipes. The replacement work focuses on pipes that are prioritized as vulnerabilities within the water distribution system after a thorough assessment. Our long-term goal is to achieve a replacement cycle that aligns with the expected useful life of the pipes, ranging from 100 to 120 years. For fiscal year 2020-21, LADWP expects to replace 174,000 feet of mainline pipe and ramp up to a replacement cycle of 225,000 feet per year by the end of FY 2024-25.

Additional infrastructure improvements are necessary to replace and rehabilitate the Los Angeles Aqueduct, tanks and reservoirs, pump stations, pressure regulating stations, system valves, water meters, as well as ancillary infrastructure that delivers water to our customers.

Infrastructure Replacements	FY 2019-20 Achievements	FY 2020-21 Goals
Distribution mainlines (pipes 20 inches or less in diameter)	140,450	174,000
Trunk lines (pipes 20 inches or greater in diameter)	10,744	11,800
Large valves	5	5
Pressure regulator stations	10	10
Pumps/motors	12	12
Small meters	26,964	31,500

LADWP maintains a high level of water service reliability. Our leak rate averages 19 leaks per 100 miles of pipeline over the past five years, faring better than the national average of 25 leaks per 100 miles of pipes.

Seismically Resilient Pipe Network

LADWP was the first water utility in the nation to install earthquake resistant ductile iron pipe (ERDIP) within our water system beginning in 2013. In April 2014, we initiated a Resiliency Program to further strengthen Los Angeles' water infrastructure in the event of an emergency, such as an earthquake or other natural disaster. The program continues to build out a seismically resilient pipe network by installing earthquake resilient pipe (ERP) that includes specially designed ductile iron pipe with seismic joints and welded steel pipe.

LADWP is now installing ERP at critical locations that are vulnerable to large ground movement within Los Angeles. The Resiliency Program supports L.A.'s Green New Deal sustainability goals by ensuring a safe, secure, and reliable drinking water supply and distribution system. Since the start of the Resiliency Program, we have installed over 29 miles of ERP, with more projects strategically planned in the near future.

Los Angeles-Burbank Interconnection

LADWP and the City of Burbank celebrated the completion of the Los Angeles-Burbank Interconnection in early 2020. The project was a key milestone in a four-year effort to upgrade the RSC7 trunk line that is expected to be completed by April 2022. An important project to ensure future water supply reliability, the new trunk line replaces the existing RSC7, which was installed in the 1940s. When completed, RSC7 will have installed 13,325 linear feet of 78-inch diameter welded steel pipeline.

The connector pipeline enables Burbank to convey drinking water that is a blend of San Fernando Basin groundwater, treated at the Burbank Operable Unit, and water imported from the Metropolitan Water District of Southern California (MWD) to LADWP's distribution system. This partnership demonstrates yet another step LADWP is taking toward a more sustainable water future for Los Angeles by increasing our local water supply in place of costly imported water.

Learn more: LADWP.com/rsc7

Foothill Trunk Line-Unit 3

Among the current ERP projects is the replacement of Foothill Trunk Line-Unit 3, a major water artery that crosses the Sylmar Fault in the North San Fernando Valley. The original 1930s-era pipe, which ranges in diameter from 24 to 36 inches, will be replaced with nearly three miles of 54-inch diameter ERP trunk line.

The increased size will improve water quality and flow capacity as well as water system flexibility and reliability. To minimize impacts to the community, a new 12-inch diameter ERP distribution water mainline will be installed alongside the trunk line. The mainline will separate the water serving the local community from the trunk line. The construction includes 13,000 feet of open trenching and 3,430 feet of tunneling in six work areas to minimize impact to community and allow through traffic.

Learn more: LADWP.com/foothill

Century Trunk Line-Unit 1

The Century Trunk Line–Unit 1 Project is replacing approximately 7,600 feet of existing 36-inch welded steel pipe originally installed in 1937 on Century Boulevard in the vicinity of the Los Angeles International Airport. Operating past its useful service life, the old pipe is being replaced with 10,200 feet of 24- and 48-inch diameter ERP to increase resiliency during earthquakes. Construction on Unit 1 began in January 2020 and will be complete by May 2022.

Learn more: LADWP.com/CenturyTrunkLine

Water Strong

LADWP is committed to providing a water supply that is resilient, sustainable, reliable, high quality and cost effective as we confront extremes in weather conditions and address other challenges in managing our city's water supply. A key strategy to maintaining our water strength as a city is to continue diversifying and expanding our local water resources and to further reduce dependence on purchased imported water.

Los Angeles' water supply from outside the L.A. basin has been impacted by significant swings in hydrological conditions, including 15 years of extreme dry periods combined with increased environmental restoration obligations. Even with the record-setting snowpack and precipitation in 2017, our traditional Los Angeles Aqueduct water supply from the Owens Valley and Mono Basin has dropped to 50% of historic levels over the past 30 years.

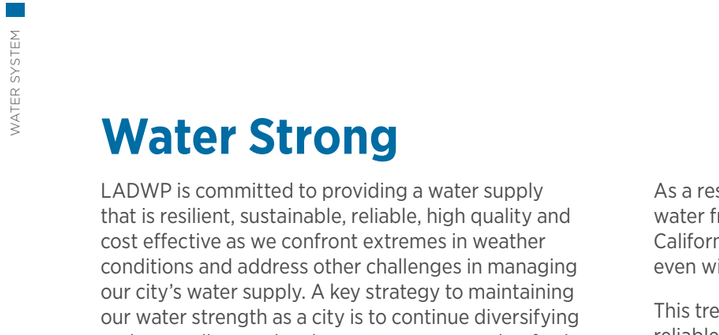
As a result, LADWP has had to purchase more imported water from the Metropolitan Water District of Southern California (MWD) to meet our city's water demands, even with increased conservation.

This trend highlights the need to develop a more reliable and sustainable local water supply, unaffected by hydrological variability and long-term trends in environmental regulation.

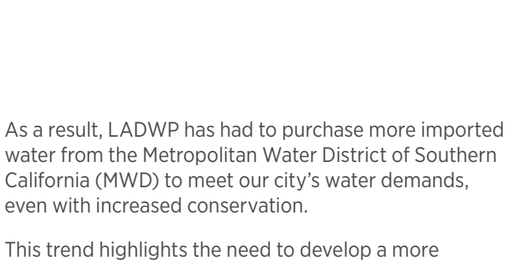
Looking to the future, we are focused on becoming "water strong" — building resilient, sustainable local water supplies through groundwater recharge, stormwater capture, additional conservation, maximizing water recycling, and developing a new local water source using purified recycled water. We call our plan to deliver purified recycled water Operation NEXT.

Learn more: LADWP.com/WaterStrong

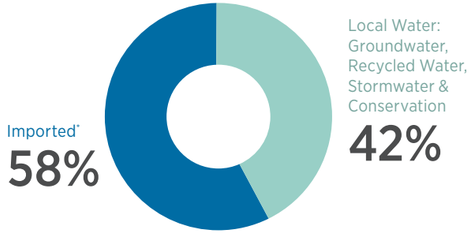
Expanding L.A.'s Local Water Supply



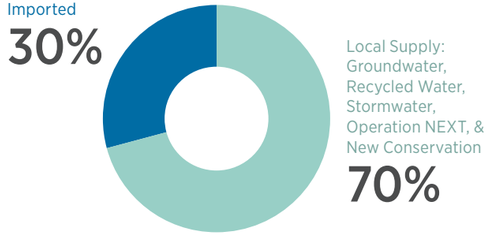
Current Water Supply
FY 2016-20 Average
Total Supply: 497,386 AF



Future Water Supply
(without Operation NEXT)
FY 2034-35 Average Hydrology



(Operation NEXT)
FY 2034-35 Average Hydrology**



*Ratio of imported water from the L.A. Aqueduct and MWD will vary due to hydrological conditions.
**Assumes completion of Operation NEXT, projected to produce up to 217 MGD of purified recycled water.

Operation NEXT

Water Supply Program

Operation NEXT is a new 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. Operation NEXT is a key strategy for achieving City of Los Angeles' goals of recycling 100% of available treated wastewater for beneficial reuse and sourcing up to 70% of L.A.'s water locally by 2035.

The program aims to maximize production of purified recycled water from the Hyperion Water Reclamation Plant to replenish our groundwater basins. Concurrently, LADWP is working with regulators to allow integrating purified recycled water with the drinking water system. The process, known as direct potable reuse (DPR), would further expand the use of purified recycled water from Hyperion and other city water reclamation plants as a supplemental water source.

Located in Playa Del Rey, the Hyperion plant will be retrofitted with advanced treatment processes (membrane bioreactors, reverse osmosis, and ultraviolet advanced oxidation), to produce up to 217 MGD of purified recycled water. That represents enough water to sustain 972,000 Los Angeles homes. Working with regional partners — Water Replenishment District of Southern California (WRD) and MWD — LADWP will use the purified recycled water as a sustainable and reliable source of local water supply for the city and the region.

Conveyance and Storage

In partnership with WRD, LADWP will determine optimal locations to convey purified recycled water from Hyperion into the underlying aquifers within the West Coast and Central Groundwater Basins. LADWP will also convey purified recycled water to replenish the San Fernando Groundwater Basin and potentially use the purified recycled water as a raw water source to blend with Los Angeles Aqueduct water and receive further treatment at the Los Angeles Aqueduct Filtration Plant.

Pilot Projects

LADWP is engaged in two pilot projects with LASAN to study the feasibility of converting Hyperion into a fully advanced water purification facility. LADWP and LASAN are collaborating on the Hyperion Advanced Water Purification Facility that will serve nearby Los Angeles International Airport. The pilot project will provide up to 1.5 MGD of advanced treated recycled water for heating, cooling, toilet flushing and other non-potable uses.

The second pilot project is to develop a 1 MGD Hyperion Membrane Bioreactor (MBR) Pilot Facility that will compare and monitor three MBR systems side-by-side. The goal is to determine the best treatment technology for the future full transformation of Hyperion to recycle 100% of the available wastewater for beneficial use.

Outreach

In early 2021, LADWP and LASAN began the environmental review process under the California Environmental Quality Act (CEQA) for a program environmental impact report (EIR). The EIR included scoping meetings to gather initial public feedback on the program. In addition, LADWP will conduct public outreach for Operation NEXT to inform communities about potential program impacts and benefits. The outreach will build upon relationships LADWP has developed through our Water System Stakeholder Engagement Group, which includes stakeholders in the public and private sectors, water agencies, business, community and environmental leaders.

WATER SYSTEM

Stormwater Capture

Expanding our capacity for capturing stormwater runoff is a key strategy to ensure our city remains Water Strong. Capturing and managing stormwater is a reliable and sustainable way to replenish local groundwater aquifers while reducing runoff, which also improves the quality of water that drains into our rivers, ocean and other water bodies. Historically, the average stormwater capture is about 21 billion gallons annually.

Our stormwater capture goal is about 49 billion gallons per year by 2035. In partnership with the Los Angeles County Flood Control District (LACFCD), City of Los Angeles Department of Public Works, and other governmental agencies and nonprofit organizations, LADWP has successfully completed several stormwater capture projects, with many more efforts underway.

Tujunga Spreading Grounds Enhancement Project

After nearly five years in the making, the Tujunga Spreading Grounds Enhancement Project was expected to be completed in 2021. LADWP and LACFCD partnered to improve the stormwater capture and groundwater recharge at the 150-acre Tujunga Spreading Grounds to increase local water supplies and reduce L.A.'s reliance on imported water. Work involved reconfiguring and deepening 20 existing stormwater capture spreading basins of varying sizes into nine deeper basins. This work will double the capture capacity of stormwater that percolates into the natural aquifer below and recharges the groundwater supply.

The last phase of construction will add enhancements such as walking paths, an outdoor classroom, educational signage, and a permeable pavement parking lot. Electric vehicle charging stations are also planned in the near future. The enhancements will help improve the environment and provide social equity by beautifying the community with native vegetation and open space. In 2020, work was completed on another phase of the project, building two new intakes to divert more runoff from the Tujunga Wash and the Pacoima Diversion Channel.

Funded through Proposition 84 and Proposition 1 grants, the Tujunga Spreading Grounds project received several awards in 2019 from the Western Council of Construction Consumers and the American Academy of Environmental Engineers and Scientists. Overall, the project will benefit the city's water supply by expanding the stormwater capture capacity from 2.6 billion gallons to about 5.2 billion gallons, enough water to supply more than 48,000 homes in Los Angeles annually.

Learn more: LADWP.com/TSG

Stormwater Capture at City Parks

LADWP is working to expand stormwater capture at nine city parks in the East San Fernando Valley to increase our local water supply. The Stormwater Capture Parks Program will collect surface water flows and divert stormwater runoff from the Tujunga Wash Central Branch storm drain to recharge the San Fernando Groundwater Basin.

Participating 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. When completed, the projects have the potential to yield about 945 million gallons of stormwater runoff per year using a variety of measures, including catch basins, bioswales, pre-treatment devices, pumps, storm drains, underground infiltration galleries, and other stormwater best management practices.

Design and public outreach for all nine parks projects are underway this year. Public outreach began in 2020 and will continue until construction is complete in 2026. Construction for the projects will be divided into three phases to limit community and environmental impacts. The first construction phase is expected to begin in the summer of 2022.

Learn more: ladwp.com/parks

Silver Lake Stormwater Capture Project

The Silver Lake Stormwater Capture Project will capture and divert about 2 million gallons of stormwater runoff per year from the neighborhood surrounding the Silver Lake Reservoir Complex, and into the Silver Lake and Ivanhoe reservoirs. As of January 2021, the project's design is underway. Completion of project construction is expected in mid-2023.

The project involves installing new catch basins, storm drains, and six locations for transferring the stormwater to Silver Lake and Ivanhoe reservoirs. Prior to the stormwater entering the reservoirs, hydrodynamic separators will remove oil, sediment, and debris from the stormwater. Benefits of the project include alleviating local flooding, improving water quality, and maintaining the historic water elevation of Silver Lake Reservoir. This project is a joint partnership between LADWP and the Los Angeles Department of Public Works, Bureau of Engineering and LASAN.

San Fernando Valley Green Street Projects

The San Fernando Valley Distributed Stormwater Capture Projects (Green Street Projects) is a partnership with LASAN to use innovative techniques and emerging technologies to capture and recharge stormwater through a series of localized projects. By increasing stormwater capture, the Green Street Projects will help recharge groundwater, alleviate local flooding, reduce the amount of pollution in runoff after the first rain, and improve water quality downstream. The projects will feature enhanced access for walking as well as improved aesthetics along the existing right-of-way. They include the Ben and Victory Green Stormwater Infrastructure, Agnes Avenue Stormwater Capture, Victory-Goodland Street Median Stormwater Capture, Glenoaks and Fillmore Stormwater Capture, Lankershim Boulevard Great Street, and Van Nuys Boulevard Great Street projects. The Green Street Projects will yield approximately 167 million gallons of water per year when all are completed in 2021.

Arundo Strand Removal Project

LADWP partnered with the National Forest Foundation (NFF) and Council for Watershed Health (CWH) to eradicate Arundo in the Big Tujunga and Little Tujunga watersheds and Upper Los Angeles River Watershed, respectively. Arundo donax, commonly referred to as "giant reed," is an invasive, water-thirsty plant. The Arundo Strand Removal Project will treat approximately 150 acres and save about 977 million gallons of water annually. The project has been underway since 2016 and is due to be completed by 2023.

2020-21 BRIEFING BOOK

Groundwater Cleanup

Cleaning the San Fernando Groundwater Basin (SFB) is critical to increasing L.A.'s locally produced water supplies. LADWP is expanding remediation systems to remove contamination from the SFB and restore its beneficial use. The SFB contains a collection of aquifers made of gravel, silt and sand that store a large body of groundwater. Currently, nearly 50% of LADWP's active groundwater production wells are closed.

From 2014 to 2018, the SFB provided an average of 12% of our total drinking water supply, and up to 23% during extended dry periods when imported water was less available. Resolving the contamination problems and restoring the beneficial use of the SFB are essential to protecting public health and the environment, and to recovering LADWP's historical groundwater supply and valuable local water resource.

From 2009 to 2015, LADWP undertook an extensive remedial investigation and produced a Groundwater System Improvement Study to inform the SFB Remediation Program. The study characterized the groundwater basin contamination, and led to the installation of 26 new monitoring wells. These new wells, along with a network of 70 existing wells, provide data to evaluate groundwater quality in the northern portion of the SFB, which includes the city's most productive well fields. LADWP's current groundwater remediation efforts are focused on the North Hollywood West, North Hollywood Central, and Tujunga Well Field areas. Additional groundwater evaluation in the Southern San Fernando Basin Well Fields is also underway.

Our goal is to best address contamination in the basin, and document the investigations and analyses through remediation investigation, feasibility studies and related documents. The Board of Water and Power Commissioners approved the proposed remedial actions for North Hollywood Central Remediation project on December 11, 2018 and Tujunga Remediation project on January 22, 2019, following public review, comment periods, and analysis.

Groundwater Cleanup Agreements

To restore the SFB as a beneficial and long-term resource for drinking water, and mitigate the cost for our customers, LADWP and the U.S. Environmental Protection Agency (US EPA) have engaged in a coordinated effort to hold more than 20 responsible parties in the area accountable for their historic production of hazardous materials and the resulting SFB groundwater contamination.

Grants and Funding

LADWP continues to proactively seek local, state, and federal funding to offset potential rate impacts to customers.

Measure W

In October 2020, LADWP received $20.8 million in Measure W awards for stormwater capture projects at Fernangeles Park, Strathern Park North, and Valley Village Park. These multi-beneficial projects will capture approximately 1.9 million gallons of stormwater per year to augment local water supplies, improve regional water quality, and provide environmental benefits for underinvested communities in the San Fernando Valley. Measure W, the Safe Clean Water Program, was approved by Los Angeles County's voters in 2018, and provides a dedicated stream of funding for stormwater capture projects.

Proposition 1

LADWP has been awarded several grants funded through Proposition 1, the "Water Quality, Supply, and Infrastructure Improvement Act," approved in 2014. The measure provides funding for projects that improve water quality, including drinking water protection, and help meet the long-term water needs of California. As of January 2021, LADWP has received $6 million in Proposition 1 planning grants for the North Hollywood Central, Tujunga, and Pollock Well Field remediation projects. LADWP has also been awarded $277.2 million in Proposition 1 grants for construction of the North Hollywood West, North Hollywood Central, and Tujunga Remediation Projects; Tujunga Spreading Grounds Enhancement Project; Griffith Park South Water Recycling Project; Los Angeles Groundwater Replenishment Project Initial Phase – Ozone Demonstration Project; and the Institutional Water Use Efficiency Loan Program.

North Hollywood West Wellhead Treatment Project

The North Hollywood West Wellhead Treatment Project is an important part of LADWP's Interim Remedial Action for the North Hollywood West Operable Unit. The project involves constructing an Advanced Oxidation Process (AOP) treatment facility for the remediation of 1,4-dioxane (historically used as a solvent in industrial and laboratory applications, among other purposes) encountered in groundwater in the North Hollywood West Well Field. The project is expected to operate year-round and will be capable of treating 3.86 billion gallons of water per year. The project broke ground in January 2018 and is expected to be operational by spring of 2022.

North Hollywood Central and Tujunga Well Fields

Two interim groundwater remediation projects underway are the North Hollywood Central and Tujunga Well Field Response Action Treatment Facilities. The projects will provide the necessary treatment improvements to remove contamination in groundwater at the Rinaldi-Toluca Well Field and the Tujunga Well Field, respectively. Studies have identified the presence and/or threat of 1,4-dioxane and volatile organic compounds contamination at both locations.

The treatment equipment includes the use of AOP and liquid phase granular activated carbon vessels for groundwater remediation. Once completed, the treatment facilities will allow for the operation of the full well fields. Construction for both projects began in fall 2020 and is expected to be complete in summer 2023.

Water Conservation

Faced with extreme variability in precipitation from year to year, the City of Los Angeles has long recognized water conservation as the core of multiple strategies to ensure a sustainable water supply.

LADWP's water conservation goals call for residents to reduce water use by 22.5% by 2025, and 25% by 2035. LADWP works with the Mayor's Office, other City departments, non-governmental organizations, other utilities, and our customers to reduce water use across all sectors. LADWP is also actively engaging with the California Department of Water Resources and the State Water Resource Control Board on developing water use efficiency standards, methodologies, and objectives to help provide consistency across the state to make conservation a California way of life.

LADWP encourages 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 further reduce already low water leaks in our distribution system.

A Way of Life in L.A.

As LADWP continues to offer water rebates and efficiency programs, coupled with educational and outreach campaigns, the city's residents and businesses have made water conservation a way of life. Thanks to our customers' strong water-saving ethics, L.A.'s per capita water use was 106 gallons per day as of the end of FY 2019-20, even as the city has experienced warmer temperatures compared to the historical average. Water use overall has dropped by 20% compared to the last major dry spell that began in 2013 and continued through 2017. LADWP customers dilligently maintain their water-efficient habits and work towards the city's water conservation goals.

Learn more: LADWP.com/waterconservation

LADWP is proud of the progress our customers have made in conservation and water use efficiency. Due to dramatic declines in per capita water use, total water consumption in Los Angeles in FY 2019-20 was the second lowest it has been since 1970, despite a population increase of more than one million people.

Water Conservation Potential Study

In response to the findings of the 2017 Water Conservation Potential Study, LADWP has developed a long-term water conservation plan designed to cost effectively achieve our ambitious 2035 water use goals. Since the completion of the study, Angelenos have shown their commitment to water use efficiency by saving more than 2 millon gallons per year of the total 4.5 million gallons per year identified by the study as cost-effective and feasible water savings.

Boosting Rebates

Based on findings from the Water Conservation Potential Study, we increased our Turf Replacement Rebate to $3 per square foot and expanded the eligible area to 5,000 square feet in November 2019 for residential customers. Commercial customers receive $3 per square foot for the first 50,000 square feet. Since the program began, LADWP has incentivized the replacement of over 50 million square feet of turf in Los Angeles.

To promote indoor water conservation, LADWP also increased our residential high-efficiency clothes washer rebate amount to $400 in July 2018. Since then, we have provided over 10,000 high-efficiency clothes washer rebates. We promote this incentive directly to our customers through in-store advertising, social media and other marketing efforts.

Learn more: ladwp.com/save

California Friendly® Landscape Training

LADWP continues to offer Landscape Training Classes to help customers manage their outdoor water use by transforming their lawns into California Friendly® and drought-tolerant landscaping. In response to the COVID-19 pandemic, which restricted in-person interactions, the training program transitioned to an online classroom in May 2020. The one-hour virtual trainings are offered several times each month in both English and Spanish. Beginning in May 2021, the classes will also be offered in Mandarin.

Over 500 customers participated either in-person or online in the training classes during fiscal year 2019-20 and the first half of FY 2020-21. In addition to training classes, LADWP offers many free landscaping resources on our website, such as watering guides, planting templates and YouTube videos.

Learn more: LADWP.com/landscaping

Home Water Use Report

About 70,000 LADWP customers receive bi-monthly water use reports through our Home Water Use Report pilot program. Customers enroll online to receive individualized reports that help identify the water efficiency of their households in comparison to other similar households. Results from our pilot program show customers achieve savings by receiving individual water use consumption data and tailored messaging about how to save water. We aim to expand the program to all single-family residential customers in the coming years.

Owens Valley

For over a century, LADWP has had a significant presence in the Owens Valley. Construction of the First Los Angeles Aqueduct in 1913 and the second in 1970 have provided the majority of L.A.'s water supply historically from the Eastern Sierra. Today, LADWP maintains stewardship of nearly 315,000 acres of land throughout Inyo and Mono counties and abides by a long-held policy of making the land publicly available. LADWP's management of this land also requires stewardship of the plants and wildlife that reside upon it.

Aqueduct Operations

LADWP maintains and operates a number of key facilities involved in delivering water and power safely and reliably to the City of Los Angeles, as well as about 6,000 electric customers in the Owens Valley, and directly employs nearly 350 people in the Eastern Sierra area. In addition to our water and power operations, construction and maintenance forces, LADWP administers leases and other land-use activities ranging from ranching and grazing to campgrounds and golf courses, and from local businesses to homes.

Stewardship

LADWP is committed to maintaining, protecting, and enhancing the natural resources of Owens Valley and Long Valley. About 50% of the water that once flowed through the Los Angeles Aqueduct stays in the Eastern Sierra to meet environmental commitments and operational needs.

To date, LADWP has completed 512 mitigation projects resulting in re-greening and/or re-vegetation of approximately 3,300 acres of land in the Owens Valley. These projects have fostered 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. These include:

- Nearly $2.4 billion spent on dust mitigation at Owens Lake, including the establishment of a bird and waterfowl area recognized as a Western Hemisphere Shorebird Reserve Network site of international importance.
- Approximately $272 million spent on environmental mitigation projects, including many that are dedicated to public recreation, such as Buckley Ponds and Diaz Lake.
- Significant actions to protect the sage grouse, including a Sage Grouse Conservation Strategy in partnership with the U.S. Fish and Wildlife Service, and an adaptive management and monitoring plan. We are committed to maintaining and enhancing an important sage grouse habitat on 38,000 acres in the Long Valley region of the Eastern Sierra.
- Completion of the largest river restoration project of its kind in the nation by rewatering 62 miles of the Lower Owens River and enhancing approximately 2,000 acres of wetland and aquatic habitat for waterfowl use. Since the release of water in 2007, the Lower Owens River has evolved into a thriving ecosystem and a recreational area for hiking, kayaking, and other activities.
- In 2020, LADWP successfully planted approximately 16,000 native plants in Laws, a small town north of Bishop, to provide groundcover and dust control. Through the Laws-Poleta Revegetation Project, LADWP has planted over 185,000 native shrubs covering 255 acres of land.

Mono Basin

For nearly 40 years, LADWP has specifically worked with local partners to restore and preserve the natural beauty of the Mono Basin. During that time, the utility has invested in dozens of restoration projects.

In October 2020, LADWP announced it was advancing one of the largest environmental restoration projects in the Mono Basin. The project includes construction of a new spillway gate structure that allows for increased control of flows from Grant Lake Reservoir, through Rush Creek and into Mono Lake. The structure will be used during specific wet year conditions to deliver higher flows, as recommended by the state and outlined in the 2013 Settlement Agreement. Due to LADWP's efforts in the region, Mono Lake and its tributaries offer abundant resources for unique water birds and a healthy environment for plants and fish populations to thrive.

Community Investments

LADWP supports over 75 organizations annually in Inyo and Mono counties that host events, community programs, educational activities and workforce development opportunities.

In 2020, we launched the "LADWP in the Eastern Sierra" website. The site is a resource for information about LADWP operations, projects and programs in the Eastern Sierra. Residents, customers and visitors now have access to news, facility and land updates as well as information for Owens Valley electric customers.

Learn more: LADWPEasternSierra.com.

Recreating Responsibly

One aspect that makes the Eastern Sierra such an enjoyable place is its wide-open spaces. It represents some of the most accessible wilderness areas in California. The recreational opportunities on LADWP Eastern Sierra land include fishing, camping, golf, hiking, rock climbing and sight-seeing. When the COVID-19 pandemic became widespread in 2020, LADWP worked closely with local agencies and law enforcement to keep the Eastern Sierra safe and clean. In collaboration with partners such as the Bishop Chamber of Commerce and the Eastern Sierra Interpretive Association, LADWP promoted responsible recreation through outreach campaigns, facility and property signage, and co-hosted a socially distanced clean-up event in October 2020 for the Upper Owens River watershed.

Adopt-A-School

Our Adopt-A-School program extends all the way to the Owens Valley where LADWP Northern District staff has adopted six schools in Inyo County. Through this program, LADWP employees volunteer at schools in activities ranging from gardening programs to judging science fairs to speaking in classrooms during career days or other events.

Stewardship Clean-Up Events

When the COVID-19 pandemic forced closures of indoor facilities for entertainment and exercise, the Eastern Sierra saw an uptick in visitors and local residents taking advantage of safer outdoor activities. The aftermath of the increase in recreation left some areas in poor condition. To help keep the region safe and clean, LADWP partnered with local groups to host two socially distanced clean-up events in 2020 in the Upper Owens River and the Lower Owens River.

Ensuring Safe, High Quality Water

LADWP is committed to providing our customers and the communities we serve with clean, safe and cost-effective drinking water that meets federal and state standards. The water that comes out of our customers' taps has been put through rigorous treatment, testing and monitoring.

In 2020, we collected over 3,000 water samples and conducted more than 112,000 water quality tests throughout the drinking water system for compliance with safe drinking water standards. We have invested more than $1.5 billion in 33 major infrastructure projects to safeguard the city's drinking water and meet strict regulations. These regulations include the Long Term 2 Enhanced Surface Water Treatment Rule (LT2), which protects drinking water in reservoirs from microbiological contamination, and the Stage 2 Disinfectants/ Disinfection By-Products Rule (DBP2).

Learn more: ladwp.com/waterquality

A recently installed hydration station at the North Hollywood Metro Station

Expanding Hydration Stations

LADWP continues supporting a major citywide initiative to expand access to clean, drinking water by installing or refurbishing 200 drinking water hydration stations by 2022. The Hydration Station Initiative aims to promote free, clean and accessible drinking water for the enjoyment and health of all residents and visitors. At the same time, the program helps decrease reliance on single-use plastic water bottles to benefit the environment and L.A.'s diverse communities.

The new stations are being installed at locations throughout the city, such as municipally-owned buildings and parks, near transit stations, and other public places. In partnership with the Department of Recreation and Parks and the General Services Department, LADWP has facilitated the installation of 32 hydration stations as of January 2021. Over half of them are located in disadvantaged communities. LADWP is working to expand partnerships with other city agencies such as Streets LA, Los Angeles World Airports, Los Angeles Public Library, and the LA Zoo as well as other non-city organizations.

The stations feature reusable water bottle filling stations and some offer drinking bowls for pets. As the city prepares for the 2028 Olympics, hydration stations are planned for additional locations expected to attract large gatherings, offering an alternative to sugary drinks while promoting the benefits of L.A.'s drinking water.

Reservoir Compliance

Over the last 20 years, LADWP has actively improved the water quality for our customers and met stringent LT2 and DBP2 regulations. We have met the regulations by removing from service large uncovered reservoirs such as Encino, Lower Stone, Silver Lake and Hollywood; replacing them with tanks, bypass trunk lines and other infrastructure; and installing covers on other reservoirs such as Santa Ynez, Elysian and Upper Stone.

Headworks Reservoir

In 2020, LADWP continued constructing the Headworks Reservoir Complex. This new facility is comprised of the East and West tanks—two of the largest underground water storage tanks in the Western U.S. with a combined water storage capacity of 110 million gallons. Headworks replaces the Ivanhoe and Silver Lake open-air reservoirs with the two seismically resilient, buried reservoirs to better protect L.A.'s drinking water.

The Headworks East Tank became operational in 2014, while Headworks West is expected to enter service in 2023 along with a state-of-the-art flow control station. In addition, a modern water quality lab and direct potable reuse (DPR) demonstration facility will be constructed onsite. The new lab will replace LADWP's existing lab and completion is expected in 2027. The DPR facility will use treated wastewater from the Los Angeles-Glendale Water Reclamation Plant for conversion into drinking water. This facility is expected to be completed in 2028. The Headworks Reservoir Complex will help protect the city's drinking water supply and in turn, also provide an aesthetic, landscaped recreation area for public use once completed.

L.A. Reservoir UV Disinfection Plant

Construction continues on the Los Angeles Reservoir Ultraviolet Disinfection Plant (LAR UV). In combination with the existing Dr. Pankaj Parekh Ultraviolet Disinfection Facility, completed in 2014, and the deployment of nearly 96 million shade balls in 2015 on the surface of the Los Angeles Reservoir, the LAR UV plant will be the next major milestone in improving water quality for our customers. Per regulations, open-air reservoirs must be either covered, removed from service, or incorporate treatment of water before it enters the distribution system. The LAR UV will treat water leaving the LA Reservoir to meet requirements of the US EPA's LT2 and DBP2 regulations.

UV treatment provides essential disinfection while minimizing disinfection by-products and reducing the required chlorine dose. The LAR UV plant is designed to process 650 million gallons per day and includes a flow control station, 13 UV reactors, 5 seismic resilient vaults, and a chlorine injection vault. The $123.8 million facility is an important investment in the reliability and safety of L.A.'s drinking water infrastructure and will enhance the delivery of high quality tap water. The LAR UV is scheduled for completion in summer 2021.

Power System

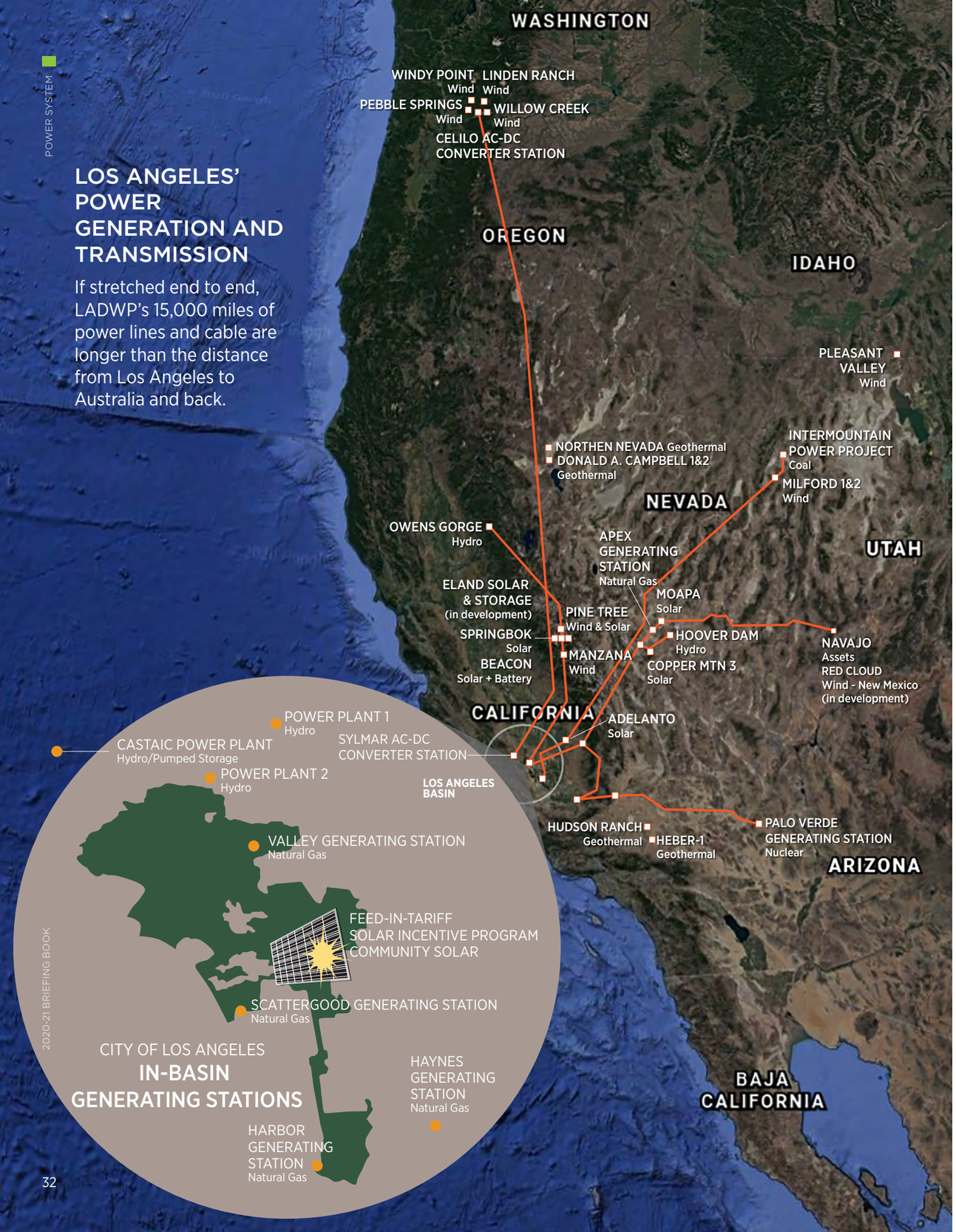
LADWP is the nation's largest municipal electric utility. In fiscal year 2019-20, we supplied more than 21,130 gigawatt-hours (GWH) to more than 1.5 million residential and business customers, as well as about 5,200 in the Owens Valley. We maintain a diverse and vertically integrated power generation, transmission and distribution system that spans five Western states, and delivers electricity to more than 4 million people in Los Angeles.

POWER SYSTEM

2020-21 BRIEFING BOOK

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.



Power Facts

Approved Power Budget (FY 2020-21)

Total: $4.5 billion

$1.4 billion for operations and maintenance
$1.6 billion for capital projects
$1.5 billion for fuel and purchased power

Electric Capacity

Net dependable generation capacity of 8,019 MW from a diverse mix of energy sources.

Power Resources*	2019	2020
Renewable Energy	**34%**	**37%**
Wind	10%	11%
Geothermal	9%	10%
Solar	12%	14%
Eligible hydroelectric	3%	2%
Biomass & Biowaste	0%	0%
Natural gas	**27%**	**24%**
Nuclear	**14%**	**14%**
Large hydro	**4%**	**4%**
Coal	**21%**	**21%**

*Submitted to the California Energy Commission for calendar year 2019. Preliminary estimates submitted for calendar year 2020.

Power Use (FY 2019-20)

The average electricity consumption per home was about 433 kWh per month. The median usage for residential customers was about 300 kWh per month.

Business, industry and government agencies consumed about 62% of the electricity in Los Angeles, while residents constituted 90% of total customers.

Peak Energy Demand

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

Power Infrastructure

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

Generation

4 in-basin thermal plants
1 out-of-basin thermal plant
14 small hydroelectric plants
1 large hydroelectric pumped storage plant
1 wind plant
1 out-of-state wind plant
2 solar photovoltaic plants

Energy Storage

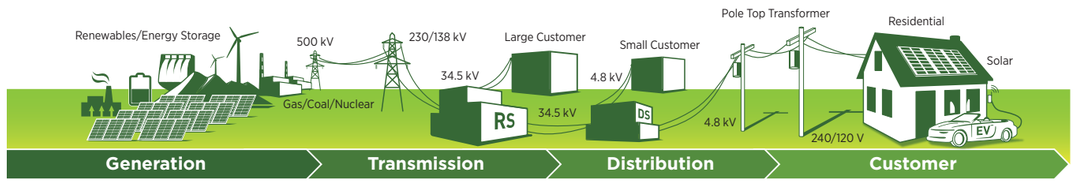
1.6 MW of City-owned energy storage
21.5 MW of utility-scale battery energy storage
1,265 MW of pumped hydro storage

Transmission

4,093 miles of overhead transmission circuits (AC and DC) spanning five Western states
130 miles of underground transmission circuits
15,452 transmission towers

Distribution

7,268 miles of overhead distribution lines
3,756 miles of underground distribution cables
303,983 distribution utility poles
3,214 pole-mounted capacitor banks
125,942 distribution transformers
177 distribution substations



Power Reliability & Resiliency

Providing reliable and safe electricity is woven into the fabric of LADWP's mission and strategic plan. LADWP's power reliability continues to beat national norms. On average, our customers experienced less than one outage and 103 minutes of power interruption during fiscal year 2019-20, according to the system average interruption frequency and duration indices, which are reported by most U.S. utilities.

Power Grid Upgrades—At a Glance

Infrastructure Replacements	FY 2019-20 Achievements	FY 2020-21 Targets
Poles	4,033	3,500
Crossarms	10,628	10,000
Transformers	876	850
Underground Cable (miles)	57	50
Vaults	20	20

Outage Notifications

As part of our mission to put customers first, LADWP launched an automated outage alert service in July 2019 to keep customers informed of the status of power outages in their neighborhoods. Customers can enroll online to receive texts, emails or both when there is a power outage affecting their neighborhood. Since the program went live, 41,282 customers have subscribed to receive outage notifications, and the system has proven effective during several significant outage events.

LADWP also continues to keep customers informed via social media, including Facebook, Twitter and Nextdoor during major outages.

Sign up: LADWP.com/OutageAlert

Infrastructure Upgrades

LADWP has invested significantly in the replacement and upgrade of aging and undersized electrical equipment through the Power System Reliability Program (PSRP), supported by annual rate adjustments from 2016 through 2020. LADWP invested approximately $3.7 billion from FY 2016-17 through FY7 2019-20, with over $1 billion budgeted in FY 2020-21. Through the PSRP, LADWP proactively inspects power equipment to identify needed repairs. In FY 2019-20, LADWP crews completed repairs on over 4,600 infrastructure-related jobs, and exceeded distribution equipment replacement targets for poles, crossarms, transformers, and underground cables.

Helping California Weather Heat Waves

In August and September of 2020, California experienced extreme high temperature events, including the worst heat wave in 14 years. The sustained heat resulted in record-setting temperatures and a soaring demand for electricity. During these heat storms, our power system crews and field staff worked 24/7 to keep the power on for our customers. Since LADWP had enough energy resources, we were able to provide surplus power to the California Independent System Operator (CAISO), helping the state agency to avoid rolling blackouts. Overall, LADWP provided nearly 43,700 megawatt-hours (MWh) of emergency power to state and local grid operators in California and Arizona to keep the power flowing for 20 million customers.

Wildfire Mitigation Plan

Wildfires have posed a significant threat to public safety, resulting in major changes in the state of California's fire prevention approach and requirements for electric utilities to prepare and implement a year-round wildfire mitigation plan. In December 2019, LADWP finalized our Wildfire Mitigation Plan, consistent with SB 901 and California Public Utilities Code 8387, describing the Department's actions to mitigate the threat of wildfires caused by electrical lines and equipment. In June 2020, we submitted the plan to the California Wildfire Safety Advisory Board (WSAB), which found it to be comprehensive through clear descriptions of relevant programs.

Our plan provides preventative strategies and programs that include system hardening through design and construction, vegetation management, operations protocols, and inspection and maintenance programs. As required, the plan will be updated each year. We expect to submit the next update to the WSAB by July 1, 2021.

Learn more: LADWP.com/wildfireplan

LAX Receiving Station Takes Off

LADWP and Los Angeles World Airports (LAWA) broke ground on Receiving Station X (RS-X) in November 2020 to mark an important power reliability project for LAX and the greater traveling public.

This critical piece of infrastructure demonstrates the strong collaboration and partnership between two Los Angeles sister agencies. RS-X will support LAWA's modernization plans by providing redundant power to all of the airport's major facilities.

RS-X is the first high-voltage receiving station built in the Los Angeles in 33 years.

VIC-LA Transmission Path Upgrade

As we strive to reduce greenhouse gas emissions and increase renewable energy, LADWP is upgrading a key East-West transmission line to support the addition of new renewable generation. Most of these environmentally friendly generating resources have been proposed east of the Victorville/Adelanto transmission line and will be conveyed to Los Angeles through the Victorville-to-LA Basin (VIC-LA) Transmission System. VIC-LA stretches 399 miles and includes three 500kV and two 287kV lines.

The VIC-LA project expands the path's capacity by about 450 MW, from 3,850 MW to 4,300 MW, and includes 12 projects at various facilities along the route. LADWP has successfully completed the installation of five transformers, three 500kV circuit breakers, three 500kV disconnect switches, 14 towers, and 13.6 circuit miles of upgraded transmission line. The entire project is on track to be in service by December 31, 2022

Sylmar Converter Station

Fifty years ago, the 846-mile Pacific DC Intertie (PDCI) became the longest DC transmission line in North America. While it is no longer the highest voltage DC line, it can boast that its southern anchor, the Sylmar Converter Station, has recently increased its capacity from 3,100 MW to 3,220 MW following a $223 million facility upgrade. This modernization project—a partnership with Southern California Edison and the municipal utilities of Pasadena, Glendale and Burbank—was designed to extend the facility's lifespan for 40 more years, ensuring continued reliability of power transmission between the two regions.

LA100

ACHIEVING 100% RENEWABLE ENERGY IN LOS ANGELES

LA 100 High-Level Findings

- All LA100 scenarios include significant deployment of renewable and zero-carbon energy by 2035, accounting for 84%–100% of energy and a decline of 76%–100% greenhouse gas (GHG) emissions from power plant operations in 2035 compared to 2020,
- Wind and solar resources—enabled by storage—are fundamental to providing the majority of energy required to meet future load: 69%–87% depending on the scenario.
- New in-basin, firm generation—using renewably produced and storable fuels, can come online within minutes, and can run for hours to days—will become a key element of maintaining reliability.
- Across all scenarios, there is a need for new transmission to accommodate future growth in renewable energy and meet increased energy demand to maintain a reliable power grid.
- Customers will need to play a bigger role in managing their energy use to help reduce costs and reduce load during peak periods.

POWER SYSTEM

Historic LA100 Study Shows Pathways to 100% Renewables for Los Angeles

In March 2021, LADWP joined with Mayor Eric Garcetti, U.S. Secretary of Energy Jennifer Granholm, leading energy scientists, and local elected officials to announce the results of the Los Angeles 100% Renewable Energy Study (LA100) — an unprecedented analysis of various pathways to achieve a 100% renewable energy grid while prioritizing reliability, equity, and affordable rates for our customers.

This independent and unbiased study, led by a team of renewable energy experts at the U.S. Department of Energy's National Renewable Energy Laboratory (NREL), affirmed that LADWP can achieve the City of Los Angeles' aggressive goal to be fully powered by 100% renewable energy by 2045, and even by 2035 in the fastest scenario.

At the same time, the study shows LADWP can reach 100% renewables while remaining true to our core principles of reliability, environmental stewardship, environmental justice, resiliency, and affordability.

NREL, working together with an L.A.-based Advisory Group, analyzed four distinct pathways, or scenarios, that explore how different choices would impact the L.A. power system. These four scenarios were modeled using three different levels of customer electric demand—moderate, high and stress levels—and incorporate all known, viable renewable power technologies and other clean energy solutions, such as energy efficiency, demand response measures, and local distributed energy resources. The scenarios also vary by how much new transmission should be built, whether to use biofuels for gas turbine combustion, and whether to allow renewable energy credits (RECs). (See page 42 to read more about the scenarios.)

For each scenario, the study analyzed the impacts on power reliability, cost, air quality improvement and greenhouse gas (GHG) reduction related to health benefits, the potential for high quality careers and equitable local economic development, and environmental justice through the transformation to 100% renewable energy resources.

The study also underscores the need for LADWP to continue investing in local distribution infrastructure through our power reliability program to keep up with the growth in energy demand expected from building and transportation electrification.

Community and customer input has been a vital part of the study. The LA100 Advisory Group included 108 members representing 47 organizations from academia, government, business and workforce, Neighborhood Councils, environmental groups, premiere accounts, and utilities. The group convened quarterly in-person and transitioned to virtual meetings after the COVID-19 pandemic required social distance measures.

In January 2021, NREL conducted the first round of virtual community outreach meetings, presenting a high-level view of the study findings on air quality, health benefits, environmental justice, electricity rates, and impacts to jobs and the economy related to the transition to 100% renewable energy sources. A second round of outreach meetings took place in May, jointly presented by NREL and LADWP. NREL provided insight on the study's key findings while LADWP offered a summary of the rate impacts of various scenarios as well our critical next steps toward achieving 100% renewable energy.

LA100

ACHIEVING 100% RENEWABLE ENERGY IN LOS ANGELES

LA100 Scenarios

LA100's scenarios were modeled on three possible levels of customer electricity demand. All were designed to achieve the 100% target by 2045 except for "Early & No Biofuels," which evaluated an accelerated target of 100% by 2035. As determined at the outset of the study, NREL did not make a recommendation on the best scenario.

SB100

- Follows the requirements of Senate Bill (SB) 100, requiring renewable energy and zero-carbon resources to supply 100% of electric sales by 2045.
- Insights: Only scenario based on the energy provided to customers as opposed to the energy generated. Includes natural gas generation and allows RECs so it achieves net zero carbon power resources.

Transmission Focus

- Assumes low barriers to building new transmission lines and upgrading older ones, and doesn't allow nuclear or natural gas generation.
- Insights: Builds more renewable generation out of state and optimizes the use of local power plants because power can move more freely within the L.A. Basin.

Limited New Transmission

- Prohibits new transmission capacity not already planned by LADWP, and does not allow natural gas or nuclear generation.
- Insights: More clean energy could be built locally, but still adds solar and wind outside the city, where resources are cheaper and more abundant.

Early & No Biofuels

- Reaches 100% clean energy target the fastest — by 2035 — and is the only scenario that does not allow biofuel combustion generation.
- Insights: Builds more plants that rely on hydrogen gas; potentially more expensive with less mature technologies; reduces emissions more quickly.

Learn more: LADWP100.com

Critical Next Steps

All LA100 scenarios point to actions that we can take now to stay on track to 100% renewable energy and significantly reduce emissions (76%–99%) by 2030.

Across all scenarios, there will be a need to:

- **Rapidly increase renewables.** We will work to expand large-scale wind and solar power, solar on customer rooftops, and more energy storage, such as batteries.
- **Accelerate new transmission.** We will need to build 10 transmission projects in the next 10 years to maintain grid reliability and meet increasing electricity demand due to greater electrification of transportation, buildings, the Port of L.A. and LAX.
- **Transform local generation.** We will study the potential for building green hydrogen combustion turbines and storage to provide firm (always ready) capacity for limited periods in the L.A. basin to maintain reliability.
- **Accelerate distributed energy resources equitably**. Expanding customer-focused programs to increase energy efficiency, electrification and flexible demand management will be crtical to achieving 100% renewables. New programs will target customers in disadvantaged communities so that everyone benefits from the clean energy transition.

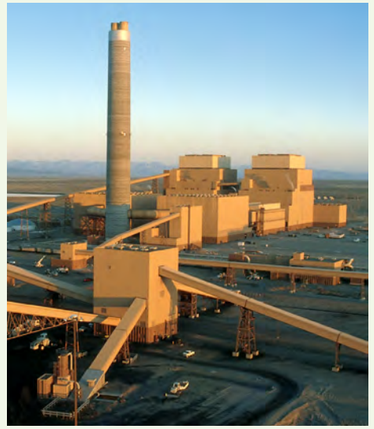
Determining a Path

Strategic Long-Term Resource Plan

To continue on the road to 100% renewable energy, LADWP plans to incorporate key takeaways from the LA100 Study into our next Strategic Long-Term Resource Plan (SLTRP), beginning in the summer of 2021. Working with community partners, LADWP will develop and recommend an optimum long-term pathway that supports our core principles of power reliability, sustainability, affordability and equity for our customers.

The SLTRP will consider the near-term and long-term steps to meet our aggressive new target of a 100% carbon-free power supply by 2035 and interim targets of 80% renewables and 97% carbon-free by 2030. The planning process will also include a community advisory group, similar to the LA100 Advisory Group, to ensure our plans reflect the input of the communities and customers we serve.

Learn more: LADWP.com/cleanenergyfuture



IPP Renewed: From Coal to Green Hydrogen

The Intermountain Power Project (IPP), the last remaining coal power plant in LADWP's energy portfolio, is turning green. LADWP and our partners in the Intermountain Power Agency (IPA), which owns IPP, are developing a new state-of-the art 840 MW combined-cycle generating system that will use green hydrogen as a fuel source.

Dubbed "IPP Renewed," the facility will be capable of operating with a fuel blend of 30% green hydrogen and 70% natural gas starting on Day 1 of operation, expected in mid-2025, and up to 100% by 2045. It will also feature a seasonal energy storage system that could hold up to 100,000 MWh of renewable hydrogen for months at a time. The renewable hydrogen will be stored in caverns, each about the size of the Empire State Building, built within a giant natural salt dome near IPP.

IPP Renewed marks an important step in LADWP's progress toward 100% carbon-free energy. The new facility will be capable of producing and storing carbon-free energy that is also dispatchable, meaning it can generate a steady flow of reliable and dependable power. This steady flow of power is needed to support the Southern Transmission System, an existing transmission line coming from IPP to the Los Angeles basin. It will also tap into existing and potential renewable energy in the region, including about 2,300 MW of solar and 1,500 MW of wind power.

An OEM contract for the generating units was established in 2020, and a two-stage RFP is underway to secure the green hydrogen fuel supply and storage. IPP Renewed will also help lead the way to making green hydrogen an economically viable carbon-free power supply.

Renewable Energy Rising

In calendar year 2020, LADWP achieved an estimated 37% renewable energy from wind, solar, geothermal, and eligible hydroelectric power. We exceeded the state-mandated target for electric utilities in California of 33% in 2020, and are on track to meet state and local goals, including the our goal of 80% renewables by 2035.

Red Cloud Wind Project, 331 MW

LADWP entered into a power purchase agreement with Pattern Energy in November 2020 for a 331 MW wind facility located in New Mexico. The Red Cloud Wind project is under construction and is expected to reach commercial operation in December 2021. The energy will be delivered to Los Angeles via the Navajo 500 kV Switching Station and existing transmission.

When operating at full capacity, Red Cloud will produce enough wind energy to serve 222,300 homes and offset approximately 464,000 metric tons of CO_2 emissions annually from fossil fuel power plants. That amount of avoided GHG emissions is like removing 100,000 gas-fueled vehicles from the highway for a year.

Large-Scale Solar

As of calendar year 2020, LADWP has 1,120 MW of large-scale solar generation in our renewable portfolio through long-term power sales agreements, producing 2,875 GWH for Los Angeles. That includes 660 MW in the Mojave Desert along the Barren Ridge Renewable Corridor—Beacon Solar (250 MW) + Battery (20 MW/10MWh); Springbok Solar (350 MW), and RE Cinco Solar (60 MW). We also built and maintain Pine Tree Solar (8.5 MW) and Adelanto Solar (10 MW) facilities. Outside of California, we receive solar from the Copper Mountain 3 Solar Plant in Nevada (210 MW) and Moapa Southern Paiute Solar in Southern Nevada (250 MW).

Eland Solar + Storage Center, 400 MW Solar + 300 MW/1,200 MWh Battery

The Eland Solar and Storage Center, considered the nation's largest combined solar power and battery energy storage system (BESS), will be capable of dispatching power to meet peak demand, even after the sun sets. Located off Highway 14, north of Mojave, California, the Eland Solar and Storage Center will consist of two large-scale solar facilities totaling 400 MW of single-axis solar photovoltaic system, integrated with 300 MW / 1,200 MWh BESS energy. Glendale Water and Power (GWP) is participating with LADWP in Eland 1 and will receive 12.5% of the total solar and battery storage system.

When operating at full capacity, Eland 1 and Eland 2 will produce enough solar energy to serve 283,330 homes and offset approximately 727,000 metric tons of CO_2 emissions annually from fossil fuel power plants. That amount of avoided GHG emissions is like removing 148,700 gas-fueled vehicles from the highway for a year. The project is slated to begin commercial operation by December 31, 2023.

Energy Storage

Expanding energy storage is integral to creating a clean energy future for Los Angeles. LADWP is developing large-scale battery and alternative energy storage projects that will provide a carbon-free, clean energy solution to integrating renewable energy onto the power grid. Similar to the Eland Solar and Storage Center, all new agreements for large solar projects will feature a battery energy storage component.

In addition to utility-scale energy storage, LADWP recognizes the important role of local customer-owned energy storage. We have introduced standards that allow customers to safely install energy storage systems, including those paired with rooftop solar systems. As of November 2020, LADWP has interconnected over 11.3 MW of customer-owned energy storage systems. This type of equipment will allow customers to both produce and store solar power for use later in the evening, and help them to better manage their energy use.

Springbok Solar Battery

In 2019, a pilot battery project was initiated at the Springbok Solar facility through a joint effort of LADWP, the Electric Power Research Institute (EPRI), and 8 Minute Energy. The project will demonstrate improved solar generation forecasting, inverter and battery controller functionality at the Springbok 3 site. The outcome will allow LADWP to bridge the gap between old technologies and new technologies and help us transition to 100% renewables.

JFB Battery Energy Storage Pilot Project

In operation since November 2019, the John Ferraro Building (JFB) Battery Energy Storage System consists of two types of battery technologies—one lithium-Ion and one flow battery system being studied through a pilot project with EPRI. Each battery is capable of generating 100 kW for four hours. The study will help inform future decisions regarding large-scale energy storage within our service territory.

In 2021, we expect to complete the evaluations and determine best uses of the battery technology to meet our clean energy goals.

Maximizing L.A. Sunshine

Local solar is an important part of our plans to achieve 100% renewable energy, and L.A.'s Green New Deal calls for 900 to 1,500 MW of local solar by 2025. Local solar programs provide residents and businesses with opportunities to generate their own clean, renewable power. They also support the city's green economy and provide equity for all customers to enjoy the benefits of a healthy, clean environment.

Small-scale solar projects enhance grid reliability by providing a distributed energy resource, functioning like mini-power plants that generate energy right where it is being used. LADWP's suite of local solar programs include customer net energy metered solar (NEM), Feed-in Tariff (FiT), community solar, and utility-built solar, through which LADWP installs solar on rooftops of LADWP and City-owned buildings. As of December 2020, approximately 473 MW of local solar was supporting L.A.'s clean grid.

Expanded Feed-in Tariff

LADWP's FiT program, the largest offered by any municipal utility in the nation, creates revenue for LADWP's commercial customers while also contributing to the green economy by supporting sustainable businesses and local jobs. The program enables customers or other third parties to enter into an agreement with LADWP to develop solar, or other renewable energy resources, within the utility's service areas, and sell the energy to LADWP for distribution on the city's power grid.

Responding to increased demand and to benefit more customers, LADWP launched an expanded FiT program in January 2020 that provides an additional 300 MW of renewable energy projects on top of the current 150 MW program, which is now fully subscribed and has a wait list.

Another expansion of FiT, known as the FiT Plus pilot program, was launched in early 2021. Through this program, LADWP will add up to 10 MW of distributed energy resource (DER) projects to the grid. FiT Plus encourages the development of combined solar and battery energy storage systems close to where the customer is using power. Creating more local solar, combined with batteries, avoids energy losses that otherwise occur when energy is conveyed over long distances as well as improves the reliability and resiliency of the power grid.

Learn more: LADWP.com/FIT

Removing Barriers: Virtual Net Energy Metering

Residential customers living in multifamily housing have limited opportunities to enjoy the benefits of solar projects. LADWP's Virtual Net Energy Metering (VNEM) Pilot Program, approved by the Board of Water and Power Commissioners and City Council in early 2021, represents a continued commitment to expand programs to populations with low solar participation rates.

Launched in March 2021, VNEM will help remove barriers to solar benefits and make it easier for renters to manage their electrical bills over time. VNEM is similar in structure to the FiT program, but available to residents of multifamily housing, a sector with great potential for rooftop solar systems. Developers will sell the output of local solar projects directly to LADWP. Proceeds from the energy sales will be financially divided among tenants, project developers, and property owners.

Community Solar

Since launching the Community Solar Program (CSP) in 2015, LADWP has been developing innovative business models to better serve our customers and help create the grid of the future, meet renewable energy mandates, increase solar equity, and empower communities in the clean energy transition. The CSP includes the Solar Rooftops and Shared Solar Programs. It came about in response to findings of LADWP's Equity Metrics Data Initiative (EMDI), which identified a lack of solar in disadvantaged and underserved communities. Community Solar programs offer an opportunity for all Angelenos to access the health and environmental benefits of solar power.

Shared Solar

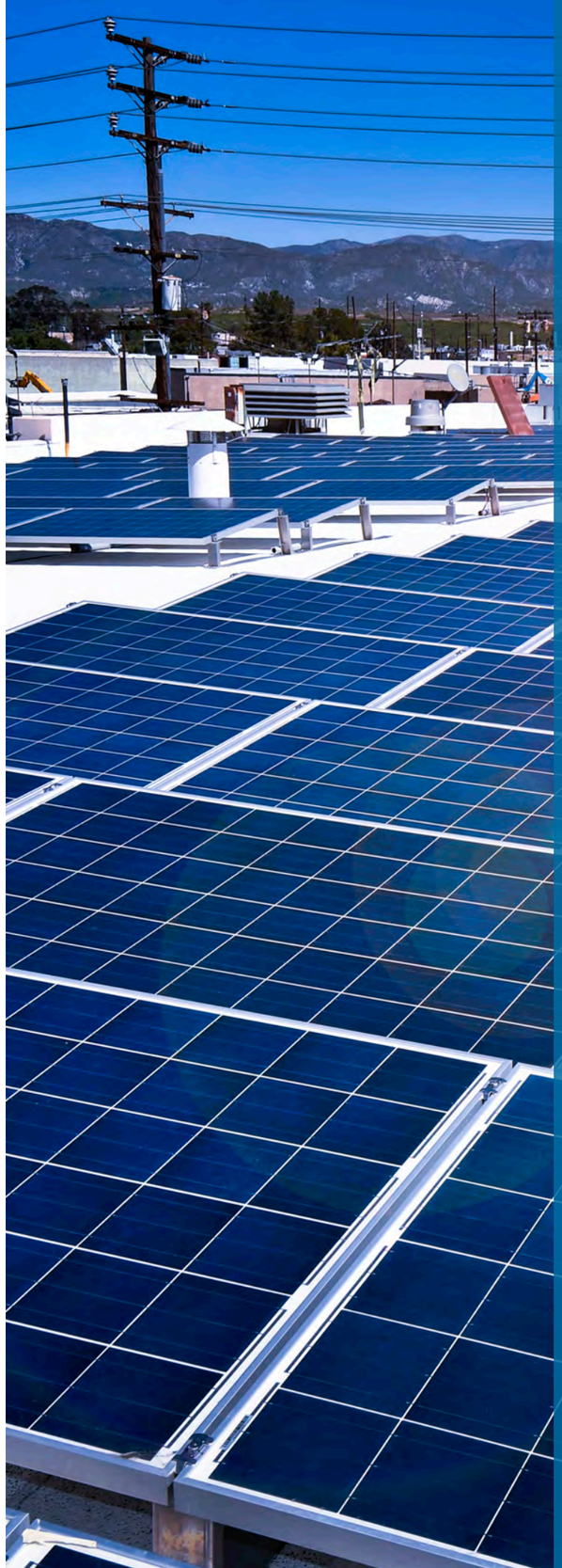
The Shared Solar Program was designed specifically for residential customers living in multifamily dwellings. Launched in May 2019, Shared Solar allows apartment or condo dwellers to participate in the economic benefits of solar while supporting a cleaner and healthier environment. Through Shared Solar, participants are charged a fixed cost for a portion of their electric bill, guarding against rising utility costs for up to 10 years. Program participants can subscribe to 50 kWh or the maximum of 100 kWh of solar power on a monthly basis. The blocks of clean electricity come from new solar power plants constructed in or near the L.A. basin.

Net Energy Metering

Residents and businesses in Los Angeles continue demonstrating their enthusiasm for going solar. The Net Energy Metering Program enables customers to install their own solar system and connect to the city's electric grid. Customers benefit by receiving a credit on their bill for the amount of power that their solar system provides to the grid. Through the program, LADWP provides customers with a solar net energy meter and works with them on connecting the meter to the power grid.

Although the solar incentive program is no longer available, customers can still take advantage of the Federal Tax Credits until the end of 2021.

Learn more: LADWP.com/Solar



Local Solar – By the Numbers

(As of December 31, 2020)

Over 51,677 customer-installed solar systems connected to the grid.

Net Energy Metering/Solar Incentive Program:

- $336.5 million in solar incentives for 34,573 systems since the program launch in 1999*
- $279 million in incentives for 277 MW under state legislated program SB1*
- Total net-metered solar: 391.6 MW from 51,678 systems, generating 772,000 MWh per year

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

Feed-in Tariff Program:

- 108 renewable projects in service, totaling 81.1 MW*
- The energy produced from these projects is enough to supply nearly 23,000 homes

*Includes 4 MW installed in the Owens Valley and 2.95 MW comprised of renewable landfill gas

Solar Rooftops Program:

- 32 installations completed
- 116.4 kW of solar power being delivered
- 15 projects (63.9 kW) are expected to be installed in early 2021

Shared Solar Program:

- 555 customers enrolled
- 43,200 kWh per month supplied

Utility Built Solar

- 47 installations completed totaling 26 MW*

*Includes 44 in-basin projects totaling 6.6 MW

Learn more: LADWP.com/solar

Charging Forward: #1 in Commercial Charging Stations

LADWP has met and exceeded our goal of supporting the installation of 10,000 commercial EV charging stations throughout the city. Los Angeles has an estimated 11,045 commercial charging stations, the most of any city in the United States. L.A.'s extensive charging network provides expanded options for the city's growing EV community, with an estimated 62,850 EVs registered as of January 2021. This milestone was surpassed in October 2020, almost two years earlier than L.A.'s Green New Deal goal of 10,000 commercial EV charging stations by 2022.

The city's commercial EV charging stations include 2,477 that are publicly accessible as well as 8,568 non-public charging stations at workplaces, fleet operations and multi-unit dwellings. Within Los Angeles, there are 10,779 commercial Level 2 charging stations and 266 DC fast chargers. A large portion of the charging stations received funding incentives through LADWP's commercial EV charging station rebate program. We have issued over 8,000 rebates to date, with over 60% going to residential multi-unit dwellings.

Learn more: LADWP.com/EV

Charge Up L.A.!

Through our electric transportation infrastructure deployment, rebates and programs, we are creating electric vehicle (EV) communities across Los Angeles. LADWP encourages customers to plug in and save through EV rebate programs, expanding citywide charging infrastructure, and other strategies. The benefits of electrification include reducing the city's carbon emissions and other tailpipe emissions, improving local air quality, and saving costs for drivers because charging up vehicles can be less expensive than gas. EVs and other forms of electric transportation can also help integrate more renewable energy into the city's power grid and improve power reliability when owners charge up their vehicles at the appropriate time.

Electric Transportation Goals

After surpassing the goal of 10,000 commercial chargers in the city in 2020, Los Angeles is on track to meet our next electric transportation milestones, including 25,000 commercial charging stations by 2025 and 28,000 by 2028. LADWP's efforts will support the goal of 500,000 EVs in the city and provide EV infrastructure for the 2028 Summer Olympic and Paralympic Games.

Charging Up Disadvantaged Communities

LADWP is continuing to enhance our Charge Up L.A. EV rebate programs, focusing on increasing access in disadvantaged communities. In November 2020, we began offering an additional $1,000 rebate for eligible commercial Level 2 charging stations installed in underserved communities, and we are working on increasing the rebate for income-qualified customers who purchase used EVs. Our used EV rebate program provides up to $1,500 toward the purchase of a used battery electric or plug-in hybrid vehicle. In 2020, a year that was heavily impacted by the COVID-19 pandemic, LADWP customers applied for 1,092 used EV rebates.

Learn more: LADWP.com/usedEVrebate

Charging Up LADWP Facilities

Through the end of 2020, LADWP installed more than 904 Level 2 charging stations at our facilities, including 15 DC fast chargers (DCFCs) at publicly accessible locations. We are planning to install 766 more charging stations on LADWP properties over the next two years.

The Van Nuys Customer Service Center project, which broke ground in August 2020, is part of a larger plan to create EV fast charging hubs at LADWP and City facilities. The center will offer four DCFCs and 14 Level 2 charging stations. Also in 2020, we began work on the DS-136 fast charging project, which will include three DCFCs accessible to nearby residents in Woodland Hills once completed.

Clean Fuel Reward

In November 2020, LADWP and other California electric utilities teamed up with the California Air Resources Board (CARB) to introduce the California Clean Fuel Reward (CCFR), a point-of-sale price reduction of up to $1,500 for the purchase or lease of any eligible new battery electric or plug-in hybrid vehicle from a participating automotive retailer. Since its launch, over 1,500 LADWP customers benefited from the CCFR program, which can be combined with other local, federal and state incentives. The CCFR is funded by electric utilities, such as LADWP, participating in CARB's Low Carbon Fuel Standard (LCFS) Program.

Learn more: www.cleanfuelreward.com

Electrifying Public Transportation

LADWP and the Los Angeles County Metropolitan Transportation Authority (L.A. Metro) have been coordinating closely since 2018 to deploy the electric services and charging infrastructure needed to electrify the transit buses of the G-Line (formerly known as the Orange Line). The Department is supporting L.A. Metro's effort through our commercial EV charging station rebate program, which provides funding for medium- and heavy-duty chargers. These incentives will help install high powered DCFCs at L.A. Metro's Chatsworth bus depots as well as charging stations at three other bus stations along the G-line.

Investing in Energy Efficiency

Energy efficiency is a key strategy for transitioning our power supply to 100% renewable energy, providing a cost-effective way to reduce GHG emissions and other pollutants. Energy efficiency supports system reliability and resiliency while enabling customers to better manage their power. We offer a menu of rebates for energy-efficient appliances and other measures that are tailored for all customer sectors to enjoy benefits, including lower energy bills, enhanced productivity, and helping reduce greenhouse gas and other emissions from fossil fuel generation. Our programs are also designed to support clean jobs and the Los Angeles economy.

Learn more: LADWP.com/save

Guiding Principles

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

- Promoting energy efficiency programs for all customer sectors.
- Targeting "hard-to-reach" customers, such as low-income residents and small businesses.
- Achieving tangible economic benefits for low-income customers.
- Leveraging programs to support jobs for the local workforce.
- Working collaboratively with partner agencies on outreach and education to reach a broad and diverse customer base.
- Operating transparently and reporting results regularly.

Energy Efficiency Goals

We achieved our target of 15% cumulative energy savings from 2010 through 2020, based on findings of the 2014 Energy Efficiency Potential Study. After receiving an updated potential study in late 2020, LADWP adopted a new goal to reduce energy use by another 15% from 2020 through 2030, representing 4,200 GWh in energy savings. At that pace, by 2030, we will have doubled our prior target for 2020.

Putting Customers First

With the challenges introduced by COVID-19, providing excellent customer service is more important than ever. As we navigate the new normal in our workplace and personal lives, LADWP employees continue putting customers first as we strive to provide respectful, responsive, and dependable customer service. Metrics alone cannot illustrate the intangible ways in which we have worked to serve our customers, especially during this very difficult time.

All our customers are our partners, and we continually seek innovative ways to make it easier to work with us. We are committed to providing information, assistance and services so that interactions with us are safe, effortless and as efficient as possible, especially during the pandemic. In early 2020, we quickly and decisively innovated and adapted our services to bring crucial support to our financially struggling customers. We introduced contactless methods to perform water leak surveys, allowed customers to pay by appointment to ensure safe social distancing, and retrained customer service representatives to work even more proactively with customers affected by the pandemic.

We continue to increase customers' awarenes of their bill payment options, and energy efficiency and water conservation programs that can help offset their costs. We are a neighborhood utility that is looking out for our customers' best interests.

By the Numbers FY 2019-20

1.8 million	37,143	179,015	1.3 million	1 minute 36 seconds	3 minutes 19 seconds
Calls handled	Emails handled	Online signups	In-person visits (includes dropbox payments after centers closed in March 2020)	Average call wait time (July 1, 2019 – February 29, 2020)	Average call wait time (FY 2019-20)*

*When the pandemic hit in March 2020, we experienced longer call wait times as we modified office space for social distancing and transitioned to telecommuting.

PUTTING CUSTOMERS FIRST

Scam Awareness

Scams are a growing problem for utilities across the nation, and imposters are known to strike more frequently during crises. LADWP belongs to a national organization, Utilities United Against Scams (UUAS), through which we work together on nationwide campaigns to increase awareness and protect our customers from scams.

When the pandemic occurred, we stepped up messaging on our social media channels to caution customers about potential scams. We reinforced the message that we were not severing service for non-payment and that no one from LADWP would come to customers' homes or businesses demanding payment. We renamed our past due notices to "Payment Reminders" to tell customers that we were not disconnecting service for non-payment and to call us if they needed payment options.

Customer Service Centers

Although Customer Service Centers were originally closed when the city and state invoked "Stay at Home" orders, we reopened our doors for appointments, understanding that many customers prefer or need to conduct business with us in person. To better serve our communities, we plan to move to new locations in Mission Hills and Watts to replace the existing service centers. These new locations, opening in late 2021, will be more spacious and convenient. Amenities will include customer consultation areas, ample parking, and EV charging stations. We will implement the new queueing system, which allows our customers to take a seat or peruse the displays until a customer service rep can assist them.

2020 Business Customer Champion

LADWP was recognized as a 2020 Business Customer Champion by a national survey conducted by Escalent, a leading customer satisfaction and analytics firm. The survey identified 23 utilities in the U.S. with the highest Engaged Customer Relationship (ECR) scores. The ranking is based on a national survey of commercial customers published in a 2020 Cogent Syndicated Utility Trusted Brand & Customer Engagement™: Business Study. LADWP continues to receive high scores in many categories, including customer and field service, billing and payment, and communications effectiveness, all of which contributed to receiving this recognition.

Recognizing the unique challenges that our business customers faced during the pandemic, LADWP increased focus on our customers' online experience by continuously updating and sharing pertinent information about water and power service, payment assistance programs, and other COVID-19 related resources through social media channels, our corporate website, and through our commercial account liaisons.

Learn more: LADWP.com/COVID19Response

CoreSite's downtown Los Angeles facility, LA2, earned 1st Place in the Energy Efficiency Excellence Award category at LADWP's 2020 Sustainability Awards, along with a $3 million rebate check from LADWP helping to defray the cost of the efficiency measures. CoreSite conducted an extensive cooling retrofit that replaced its chilled water-cooling system with a new, centralized water chiller system consisting of four 1,500-ton water cooled chillers. The project also included installation of variable speed cooling towers, variable speed chilled water and condenser water pumps and water-side chiller heat exchangers. The efficiency upgrades are expected to save nearly 10 GWh annually.

Customer Savings and Sustainability

Sustainability Awards

LADWP hosted the 5th Annual Sustainability Awards via a web-enabled virtual ceremony on September 10, 2020. The awards honor our largest customers and partners that achieved significantly positive environmental impacts through participation in LADWP rebate programs. These efficiency efforts help participating organizations save on costs, conserve our natural resources and greatly contribute to environmental goals set for the city of Los Angeles.

Through their outstanding commitment to sustainability, these organizations conserved approximately 74 million gallons of water and reduced CO_2 emissions by 10,285 tons annually.

Awards were presented to 24 customers in five categories. Leadership Awards are based on absolute water and energy savings, and Impact Awards are based on how much water and energy was saved compared to their annual average use.

Energy Efficiency 1st Place Winners

- Leadership: CoreSite (see description above).
- Impact: Wiltern Center, conducted extensive retrofits such as upgraded lighting, reducing annual electric use by nearly 75%.

Water Conservation 1st Place Winners

- Leadership: Anheuser-Busch, installed microfiltration and reverse osmosis, providing high-quality reclaimed water for industrial use.
- Impact: Hotel Palomar, installed 528 plumbing flow control valves for their 264 guest rooms, reducing their water use by close to 9% annually.

Transportation Electrification 1st Place Winner

- Shelly Sterling, installed 441 Level 2 Chargers at 34 locations under the Charge Up LA! Program.

Learn more: LADWP.com/SAP

Power Savers

LADWP introduced a new demand response program for residential and small business customers in the summer of 2020. The program asks customers to "bring your own thermostat" to participate. Customers receive an incentive upon enrollment and for each year of participation. In 2020, over 18,000 residential customers (with over 20,000 thermostats) participated in the program, contributing to a 10 MW portfolio. Through 10 Power Savers events in 2020, customers achieved 212 MWh of energy savings. In 2020, LADWP paid over $3.17 million in incentives to participating customers, and plans to scale up the program to 25 MW by summer 2022.

Through our portfolio of energy efficiency rebates, upgrades and other programs, residential and commercial customers saved nearly 448 GWh cumulatively for the FY 2019-20. That amount of energy savings is comparable to offsetting electricity for 80,287 homes and reducing GHG emissions by 140,622 metric tons annually, which equates to removing 33,353 gasoline-fueled cars from the road.

Residential Rebate and Incentive Programs

LADWP's Consumer Rebate Program (CRP) promotes the use of energy efficient products by offering financial incentives to residential customers. This program is designed to educate LADWP residential customers about the benefits of energy efficiency and help them to purchase and install qualifying products in their home.

To encourage customers to drive electric, we continue offering a variety of rebate programs for residential and commercial vehicle charging stations and used EVs. The LADWP Electric Vehicle Programs include the Residential Electric Vehicle Charging Station Rebate Program, the Commercial Electric Vehicle Charging Station Program, and the Used EV Rebate Program.

The programs offer financial incentives to promote the adoption and use of electric vehicles and electric vehicle chargers to stimulate the implementation of low/zero emission alternatives. Expanding EV infrastructure is key to increasing EV adoption and achieving state targets and our clean energy goals for LADWP and the city of Los Angeles.

Continuing Services and Rebates During the Pandemic

While forced to temporarily suspend customer programs that require face-to-face contact, such as free efficiency upgrades for homes and businesses, we continued to provide program updates to customers through emails and phone messaging. At the same time, we recognized the importance of processing and mailing our rebate checks to help customers in such a time of economic uncertainty. We adjusted our administrative processes to continue tracking and distributing rebates. As a result, processing rates and payments have moderately improved compared to pre-COVID performance.

The Consumer Rebate Program processed 21,777 applications in FY 2019-20 resulting in over $25 million in rebates to customers. During that same period, 2,498 EV Program applications resulted in over $24 million in rebates.

Summer Savings Campaign

During hot weather, energy and water use—along with bills—typically increase, adding to financial hardships people may already have been experiencing due to the COVID-19 pandemic. To help customers offset the financial impact of the pandemic while benefiting the environment, LADWP implemented a widespread summer marketing campaign from July through October 2020 to promote energy efficiency and water conservation. Targeting residential customers, the campaign focused on saving energy and water to reduce consumption, help customers manage and afford their water and power costs, and conserve precious resources.

We connected with customers through social media channels, traditional media, and other communications strategies to promote rebate programs for energy or water-saving devices that research shows can make a real impact on costs. We also sought to educate customers about easy ways to reduce their water and power use, receive free water-saving devices, and LADWP's bill pay assistance programs.

Efficient Product Marketplace

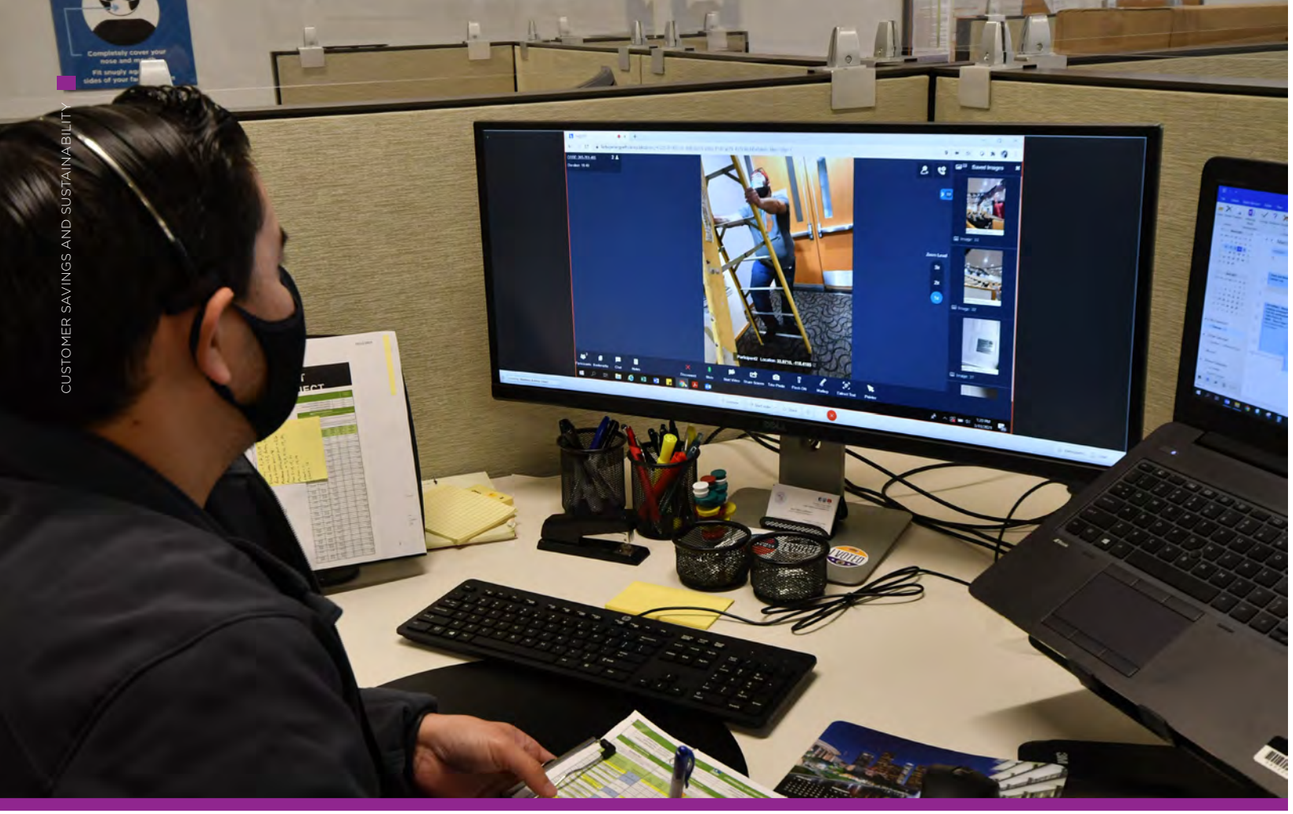
LADWP's Efficient Product Marketplace (EPM) Program is a convenient online marketplace that offers a variety of popular energy efficient products from different stores and online retailers with pricing and rebate information. EPM was enhanced with a new feature called "Checkout," which enables customers to receive earned rebates instantly, as a point-of-sale credit, for the purchase of eligible energy efficient products. EPM also offered monthly specials with even deeper rebates for energy efficient appliances and devices, including smart, programmable thermostats and advanced, energy-saving power strips and surge protectors.

Learn more: LADWP.com/EPM

Water Conservation

Similar to energy efficiency programs, water conservation programs that require face-to-face interactions were temporarily suspended due to the COVID-19 pandemic. To adapt to the crisis, LADWP piloted the Virtual Leak Detection Tour Program in July 2020, and many customers who were pre-identified based on usage took advantage of this service. Additionally, we provided instructions to participating customers for do-it-yourself meter inspections.

Our popular landscape trainings, designed to help customers plant drought tolerant and California Friendly® landscapes, were transitioned to the virtual classroom. All water conservation rebate programs continued throughout the COVID-19 pandemic. LADWP and MWD, which administers many of the water conservation rebate programs, jointly decided to pay rebates using virtual inspections for quality assurance and verification of projects. LADWP staff used various web-based interactive platforms to virtually inspect projects and approve rebates.



Savings for Large Customers

Remote Inspections Kept the Rebate Checks Flowing

When social distancing requirements went into effect, LADWP Efficiency Solutions worked swiftly to design, develop and launch a Remote Inspection Pilot Program to continue our Commercial Lighting Incentive and Custom Performance programs for commercial, industrial and institutional (CI&I) customers. Using virtual inspections, we were able to verify that energy efficiency measures are properly installed, and continue processing rebates throughout the pandemic.

The first LADWP Remote Verification Pilot inspection for a subterranean parking garage in downtown L.A. was completed on April 21, 2020. Cellular signal boosters were located throughout the garage to provide stable 4G connectivity throughout the verification. As of December 31, 2020, LADWP's program field staff completed 161 remote verifications that have resulted in potential incentive payments of approximately $7.8 million.

LADWP's Custom Performance Program team worked with engineering service providers to develop remote verification procedures. The Remote Verification Pilot has kept CI&I programs running effectively and uninterrupted during the COVID-19 pandemic.

Efficiency Upgrades at Local Schools

To keep our programs running during the COVID-19 pandemic, LADWP'S Efficiency Solutions field support team coordinated with our Custom Performance Program and LAUSD to prioritize projects associated with the California Clean Energy Jobs Act (Proposition 39) K-12 Program.

Staff developed an efficient and streamlined method to process projects, employing procedures designed for quick processing. The new method includes designating a liaison with LAUSD, scheduling remote verifications with multiple contractors, and training field representatives.

In 2020, remote verifications were conducted for 43 LAUSD schools. More than $1.5 million in incentives were paid, saving approximately 1,247,000 kWh. That amount of energy savings is enough to power 208 homes for a year.

Universities See Big Savings

As a member of the University of California (UC) and California State University (CSU) Partnership, LADWP offered a flat rate incentive to the university facilities in Los Angeles for energy efficiency projects. As a result of this incentive rate, the Commercial Lighting Incentive Program and Custom Performance Program have 55 UC and CSU projects in queue. Together, they will potentially save 18 GWh annually and receive approximately $3,725,000 in rebates.

UC and CSU campuses in Los Angeles also benefitted from additional funding through LADWP's Savings By Design Program, which incentivizes efficiency measures in new construction. In FY 2020-21, five developments remain in the queue with estimated savings of 640,000 kWh annually.

LADWP has also partnered with two prominent private Los Angeles universities on 39 energy efficiency projects slated to be completed and paid in FY 2020-21. The estimated energy savings are about 3.5 GWh with $875,000 in rebates projected.

Altogether, the potential energy savings of these projects is equivalent to removing 583 homes off the grid and avoiding 1,197 metric tons of greenhouse gas emissions.

Upstream HVAC Savings

Despite the pandemic and challenging economic conditions, Efficiency Solutions' Upstream Heating, Ventilation and Air Conditioning (HVAC) program has continued its momentum. For FY 2019-20, the program exceeded our goal of 9 GWh by nearly 18%, bringing in over 10.6 GWh in energy savings and contributing 4,281 kW in demand reduction. The program paid $2,386,031 in incentives for over 2,100 high-efficiency HVAC units. Thanks to a large program offering and continuous market engagement, the Upstream HVAC program finished the year strong and has continued that trend into FY 2020-21.

At the midpoint of FY 2020-21, the program was eclipsing its prior year savings with over 5.7 GWh energy savings so far—about 53% of the program goal. In addition, the Upstream HVAC program has broadened its reach by bringing in major retail hardware stores, such as Home Depot, Lowes, and HD Supply. Each developed their own business service offerings for commercial customers through LADWP's HVAC program.

Finance & Corporate Performance

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 cost 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 the FY 2020-21, the budgets approved by the Board of Water and Power Commissioners are consistent with our strategic plan, reflecting continued cost controls and prioritization of resources that address our customer-driven priorities.

Corporate Performance: Ensuring Transparency and Accountability

LADWP established the Corporate Performance Office within the Financial Services Organization to improve our accountability, transparency, and ultimately operating, financial, and customer service performance. The Corporate Performance Office conducts data driven analysis and reports on Department-wide key performance indicators (KPIs), benchmarking, and other special studies.

Meeting Targets

In accordance with the Water and Electric Rate Ordinances that went into effect in April 2016, and in conjunction with the Office of Public Accountability/ Ratepayer Advocate (RPA), LADWP developed a set of rates metrics aimed at fostering transparency and accountability across our major programs, initiatives, and budgets. The performance results for rates metrics have been reported to the RPA every four months and to the Board on a semi-annual basis since January 2017.

During FY 2019-20, LADWP reported on 57 rate metrics of which more than two-thirds met or exceeded their targets. In the Power System, we met our required renewable energy goals and stayed within spending levels for wind, solar, and geothermal resources. We exceeded our power reliability replacement targets for critical power equipment such as poles, transformers and cables, and also stayed within spending goals. In the Water System, we met the spending targets for water quality as well as the Sustainable City pLAn goal of 20% reduction in GPCD.

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, and this enables us to access low-interest borrowing and achieve cost-effective capital projects, which saves money for our customers.

Since 2011, LADWP has refunded $6.7 billion of debt and yielded $1.1 billion in present value savings. To maintain our financial health and protect our ratepayers, LADWP also adheres to Board approved financial planning metrics including debt service coverage, operating cash, and capitalization ratios.

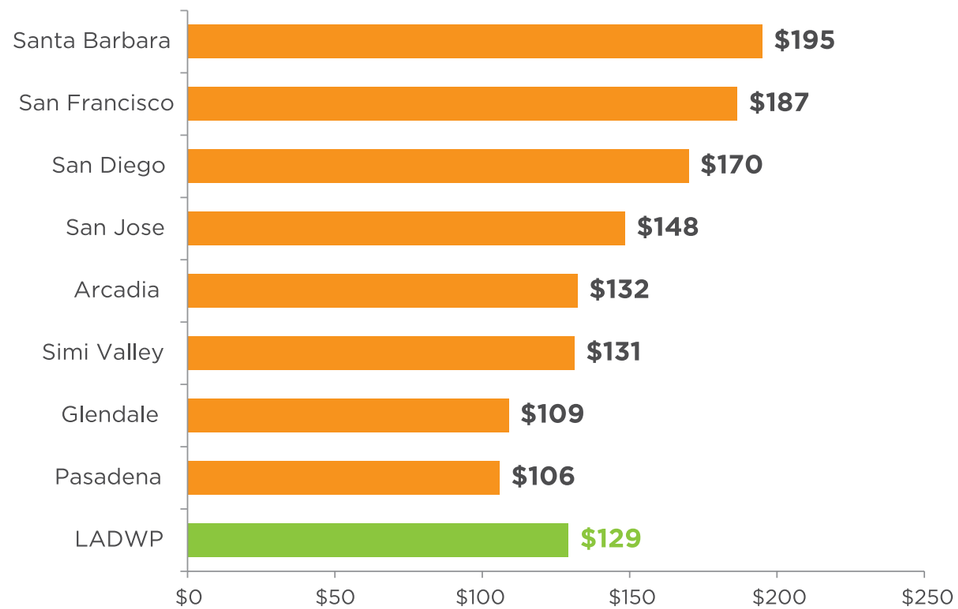
Ensuring Equity

LADWP has worked to improve the equity of our programs and services for all customers through the Equity Metrics Data Initiative (EMDI). Since January 2017, we have used equity metrics to assess how well programs, services, resources, and investments are distributed and utilized. The metrics cover key areas such as water and power infrastructure investment, customer incentive programs, procurement, and employment. The metrics are reported to the Board of Water and Power Commissioners semi-annually.

Based on what has been learned through EMDI, LADWP has expanded many programs in disadvantaged communities. Data-driven, map-based analysis found those communities had less solar installations and publicly accessible EV charging stations. We have since created Community Solar Programs, expanded electric vehicle chargers and offered rebates for used EVs. In 2020, we conducted virtual outreach meetings to receive input on new metrics that enhance equity in underserved areas.

Learn more: LADWP.com/equitymetrics

Our Water and Power Rates Are Competitive



Residential combined monthly water and power bills, as of January 2021
*Based on the midpoint of all residential electricity use of 300 kWh per month and the midpoint of water use of 10 HCF per month.

Financial Data

This provides an overview of the financial activities of the LADWP for fiscal years 2015-16 through 2019-2020.

For the complete financial statements:
LADWP.com/financialinfo

WATER SERVICES FACTS IN BRIEF

	FY 2020	FY 2019	FY 2018	FY 2017	FY 2016
Use of Water					
Average Los Angeles Population Served	4,010,684	4,040,079	4,054,400	4,021,488	3,985,114
Average daily use per capita (gallons)*	105	105	112	102	104
Water Sales for Fiscal Year (Millions of Billing Units of 100 cu. Ft)	199.9	195.4	205.3	196.0	199.2
Water Supply (Millions of Billing Units of 100 cu. Ft.)					
Local supply	15.0	14.0	9.5	22.3	34.4
DWP Aqueduct	127.2	136.1	134.0	92.6	22.3
MWD	67.0	60.0	79.6	95.7	150.6
Recycled Water	4.2	3.3	4.3	3.5	4.3
Gross Supply	213.4	213.4	227.4	214.1	211.6
Diversion from (to) local storage	-0.3	-0.7	-0.1	-3.4	1.0
Net supply to distribution systems	213.1	212.7	227.3	210.7	212.6
Bond Ratings					
Moody's/S&P/Fitch	Aa2/AA+/AA	Aa2/AA+/AA	Aa2/AA+/AA	Aa2/AA+/AA	Aa2/AA+/AA

ENERGY SERVICES FACTS IN BRIEF

	FY 2020	FY 2019	FY 2018	FY 2017	FY 2016
Number of Customers					
Residential	1,404,768	1,396,643	1,385,470	1,378,172	1,370,137
Commercial and Industrial	126,153	125,673	123,680	122,841	122,734
All Other	7,010	6,484	6,391	6,651	7,002
Total customers of all classes	1,537,931	1,528,800	1,515,541	1,507,664	1,499,873
Power Use					
Sales to Ultimate Customers - kilowatt (kW) hours	21,127,502,753	21,961,382,983	22,383,310,345	22,490,122,681	23,278,785,593
Sales to Other Utilities - kW Hours	1,050,536,000	626,058,000	532,293,000	1,425,847,000	1,880,402,376
Average annual kW hours per residential customer	5,335	5,252	5,248	5,285	5,450
Net dependable capacity, megawatts	7,981	7,937	7,850	7,787	8,038
Bond Ratings					
Moody's/S&P/Fitch	Aa2/AA/AA-	Aa2/AA/AA	Aa2/AA/AA	Aa2/AA-/AA-	Aa2/AA-/AA-

WATER AND POWER (CONSOLIDATED) FINANCIAL FACTS IN BRIEF

($ Billions)	FY 2020	FY 2019	FY 2018	FY 2017	FY 2016
Financial Data					
Total Assets	29.0	28.3	26.9	26.7	25.6
Total Net Position	9.1	8.8	8.4	8.9	8.6
Total Annual Operating Revenue	5.1	5.3	5.0	4.8	4.6
Total Annual Budget	6.3	5.7	6.1	6.3	6.4
Retiree Benefits Data Based on Market Value of Assets					
Unfunded Pension Liability	1.1	0.8	0.9	1.3	2.2
Funded Pension %	92.3%	94.0%	93.1%	89.4%	82.2%
Unfunded Retiree Medical Liability	0.2	0.5	0.4	0.4	0.6
Funded Retiree Medical %	92.5%	82.8%	84.5%	81.4%	72.5%

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

WATER SERVICES SELECTED FINANCIAL DATA AND STATISTICS

($ Millions)	FY2020	FY 2019	FY 2018	FY 2017	FY 2016
Operating Revenue					
Residential	$537.6	$515.2	$509.6	$450.4	$458.0
Multi Dwelling	402.0	396.0	352.1	338.6	339.8
Commercial and Industrial	253.2	262.3	254.7	264.7	277.8
Other	82.3	80.0	73.7	64.9	56.2
Total Operating Revenue	$1,275.1	$1,253.5	$1,190.2	$1,118.6	$1,131.7
Operating Income	317.3	309.1	339.0	261.1	251.8
As % of operating revenues	24.9%	24.7%	28.5%	23.3%	22.2%
Change in Net Position*	$208.6	$167.2	$200.3	$140.5	$154.2
Balance Sheet					
Net utility plant	$8,926.0	$8,436.8	$8,033.0	$7,554.0	$7,013.0
Capital additions, net	504.5	455.8	479.0	541.0	499.3
Capitalization					
Net Position	3,394.0	3,185.4	$3,018.3	3,136.2	2,995.7
Long-term debt	6,281.6	6,139.4	5,786.4	5,569.2	5,249.6
Interest on debt	218.4	214.5	205.3	194.5	181.3
Key Financial Planning Metrics					
Debt Service Ratio	1.85	1.71	1.82	1.74	1.95
Number of Days Cash on Hand	259	253	183	165	154
Debt to Capitalization %	65%	66%	65%	64%	63%
Operations					
Gallons sold (billions)	149.5	146.2	153.6	146.5	149.0
Customers - average number (thousands)	689	687	683	680	678
Average Revenue per hundred cu. ft. Sold (in dollars)					
Residential	$7.15	$7.07	$6.48	$6.21	$6.30
Multiple Dwelling	6.37	6.45	5.62	5.54	5.46
Commercial and Industrial	5.89	5.94	5.53	5.89	5.88
Water Supply (millions of billing units of 100 cu. ft.)					
Local supply	15.0	14.0	9.5	22.3	34.4
DWP Aqueduct	127.2	136.1	134.0	92.6	22.3
Metropolitan Water District	67.0	60.0	79.6	95.7	150.6
Recycled Water	4.2	3.3	4.3	3.5	4.3
Gross Supply	213.4	213.4	227.4	214.1	211.6
Diversion from (to) local storage	-0.3	-0.7	-0.1	-3.4	1.0
Net supply to distribution systems	213.1	212.7	227.3	210.7	212.6

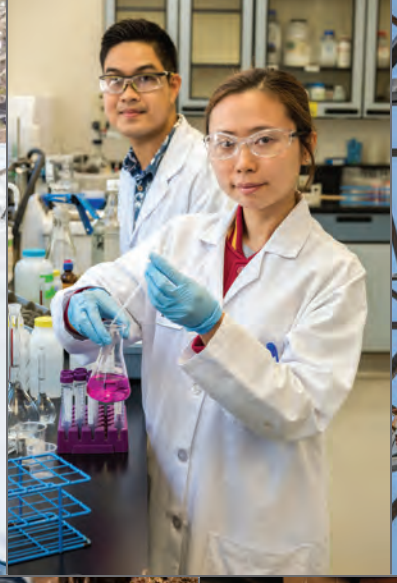
*The Change in Net Position amount under Fiscal Year 2018 excludes the cumulative effect of change in accounting for post retirement benefits other than pensions under GASB 75.

ENERGY SERVICES SELECTED FINANCIAL DATA AND STATISTICS

($ Millions)	FY2020	FY 2019	FY 2018	FY 2017	FY 2016
Operating Revenue					
Residential	$1,360.6	$1,376.3	$1,265.7	$1,179.5	$1,126.7
Commercial and industrial	2,372.5	2,560.1	2,429.3	2,331.6	2,308.2
Sales for resale	61.5	111.5	91.4	88.1	72.9
Other	12.7	22.9	17.8	98.7	9.2
Total Operating Revenue	$3,807.3	$4,070.9	$3,804.2	$3,697.9	$3,517.0
Operating Income	364.0	512.3	725.3	611.7	524.6
As % of operating revenues	9.6%	12.6%	19.1%	16.5%	14.9%
Change in Net Position*	$90.1	$226.9	$278.2	$176.9	$175.3
Balance Sheet					
Net utility plant**	$12,826.9	$12,173.8	$11,377.5	$10,772.6	$10,322.5
Capital additions, net	695.2	715.1	634.7	479.2	429.0
Capitalization					
Net Position	5,702.0	5,611.9	5,384.9	5,767.9	5,591.1
Long-term debt	10,707.5	10,370.1	9,772.3	9,519.3	9,154.5
Interest on debt	370.1	355.4	348.3	326.0	299.7
Transfers to City of Los Angeles	229.9	232.6	241.8	264.4	267.0
Key Financial Planning Metrics					
Debt Service Ratio	2.11	2.40	2.59	2.37	2.68
Number of Days Cash on Hand	211.00	204	176	206	267
Debt to Capitalization %	65%	65%	63.6%	61.4%	61.3%
Full Obligation Ratio	1.74	1.90	1.88	1.63	1.83
Operations					
Kilowatt hours sold (billions)	22.3	22.6	23.0	24.0	25.3
Customers - average number (thousands)	1,538	1,529	1,516	1,508	1,500
Average Revenue per kWh Sold (in cents)					
Residential	18.9	18.8	17.4	16.2	15.1
Commercial and Industrial	16.9	17.5	16.0	15.2	14.5
Energy production (billions in kWh)					
Total generation	17.9	16.9	14.0	14.6	14.4
Purchases	7.3	9.0	12.3	12.2	13.1
Total production	25.2	25.9	26.3	26.8	27.5
Net system dependable capability (thousand megawatts)					
Power System-owned facilities	4.8	4.8	4.8	4.8	4.7
Jointly owned and firm purchases	3.2	3.1	3.1	3.0	3.4
Total	8.0	7.9	7.9	7.8	8.1

*The Change in Net Position amount under Fiscal Year 2018 excludes the cumulative effect of change in accounting for post retirement benefits other than pensions under GASB 75.

**A reclassification has been made to the 2018 Net Utility Plant amount to conform to the 2019 financial statement presentation.



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