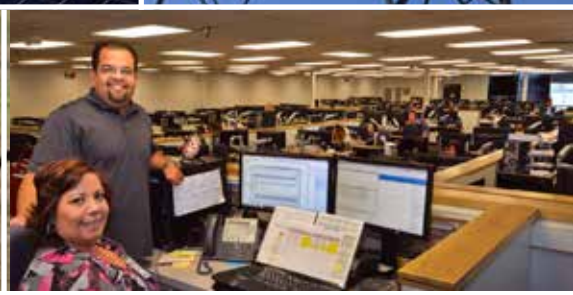
Los Angeles Department of Water & Power

2016 Briefing Book



Putting Customers First

Introduction

The Los Angeles Department of Water and Power (LADWP) is the nation's largest municipal utility, having provided water and power service to Los Angeles residents and businesses for over 100 years. More than 9,400 employees serve the City of Los Angeles with water and power in a cost-effective and environmentally responsible manner. LADWP is guided by a five-member Board of Water and Power Commissioners, appointed by the Mayor and confirmed by the City Council. LADWP is a proprietary agency of the City, with full responsibility for meeting the electric and water requirements of 4 million people in Los Angeles.

LADWP continues a major transition of its water and power supplies while working to maintain and improve reliability. Working together with the Mayor and City Council, LADWP is creating a clean energy future for Los Angeles and planning for a sustainable water future — one that addresses drought conditions by reducing reliance on expensive imported purchased water and increasing the local water supply as well as conservation.

In 2015, LADWP took the necessary steps to put forth a five-year water and power rate request, which was presented to the public over six months starting in July 2015. Led by General Manager Marcie Edwards, the Department engaged our customers, elected officials, neighborhood councils, the business community, environmental leaders and other stakeholders in a widespread education and outreach effort that encompassed more than 80 presentations and briefings throughout the city. The new rates, which were approved by the City Council in March 2016, went into effect April 15, 2016.

Key priorities for the rates request included:

- Replacing aging water and power infrastructure to ensure future service reliability
- Transforming water and power supplies to protect the water supply from drought and transform the power supply to meet clean energy mandates
- Continue improving customer service and keeping rates competitive

Based on input from the independent Office of Public Accountability/ Ratepayer Advocate and stakeholders, the water and power rate ordinances incorporate interim rate reviews and metrics reporting requirements to improve LADWP's performance, accountability and transparency.

This annual Briefing Book is designed to help frame the key initiatives and issues that drive the Department's operations, programs and policies.

LADWP Leadership

David H. Wright
General Manager

David H. Wright, General Manager

David H. Wright is the General Manager of the Los Angeles Department of Water and Power (LADWP), appointed by the Board of Water and Power Commissioners to the post on August 16, 2016. Mr. Wright provides leadership for the utility in providing reliable and competitively priced water and electricity while continuing to maintain and implement environmentally conscious policies and priorities.

Mr. Wright came to LADWP to serve as the Senior Assistant General Manager of the LADWP's Power System in February 2015. Shortly thereafter, he became the Chief Operating Officer, overseeing the Water and Power Systems, and operations of the Information Technology Services, Supply Chain Services, Human Resources, Fleet Services, Equal Employment Opportunity Services, the Communications and Marketing and Community Affairs Division, Project Management Division, and Customer Service Division.

Prior to joining the Department, Mr. Wright worked at the Las Vegas Valley Water District as Deputy General Manager and Chief Financial Officer from September 2013. He has a broad-based knowledge of both water and electric utility operations and worked for the City of Riverside, California for approximately 25 years, most recently as the Public Utilities General Manager, a position he earned after being Deputy Public Utilities Director and Public Utilities Chief Financial Officer for nearly 12 years. He joined the City of Riverside in 1988 and held a number of positions within the finance department, including serving as the City Controller.

He holds both a bachelor's and master's degrees in Business Administration, conferred upon him by California State University, Fullerton.

Mr. Wright has been a part of and has long-standing relationships with the leaders of various utility-related organizations such as the Southern California Public Power Authority (SCPPA): He was also SCPPA president in 2008; was president and is a long-standing member of the California Municipal Utilities Association (CMUA). He has also been on various committees of the Riverside Chamber of Commerce from 1998 to 2013.

Board of Water and Power Commissioners

Board President Mel Levine was appointed to the Board of Water and Power Commissioners by Mayor Eric Garcetti and was confirmed by the Los Angeles City Council on September 11, 2013. He was elected President of the Board on October 1, 2013. Mr. Levine joined the international law firm of Gibson, Dunn & Crutcher as a partner in 1993. He retired as a partner in the firm in 2012 but continues to act as Counsel. He served as a member of the United States Congress from 1983 until 1993 and as a member of the California Assembly from 1977 to 1982.

William W. Funderburk Jr., Vice President, was appointed to the Board of Water and Power Commissioners by Mayor Eric Garcetti and was confirmed by the Los Angeles City Council on September 11, 2013. He was elected as Vice President on October 1, 2013. Mr. Funderburk is a founding partner of Castellón & Funderburk LLP, a business litigation boutique.

Jill Banks Barad was appointed to the Board of Water and Power Commissioners by Mayor Eric Garcetti and was confirmed by the Los Angeles City Council on September 11, 2013. She is a recognized civic leader and businesswoman.

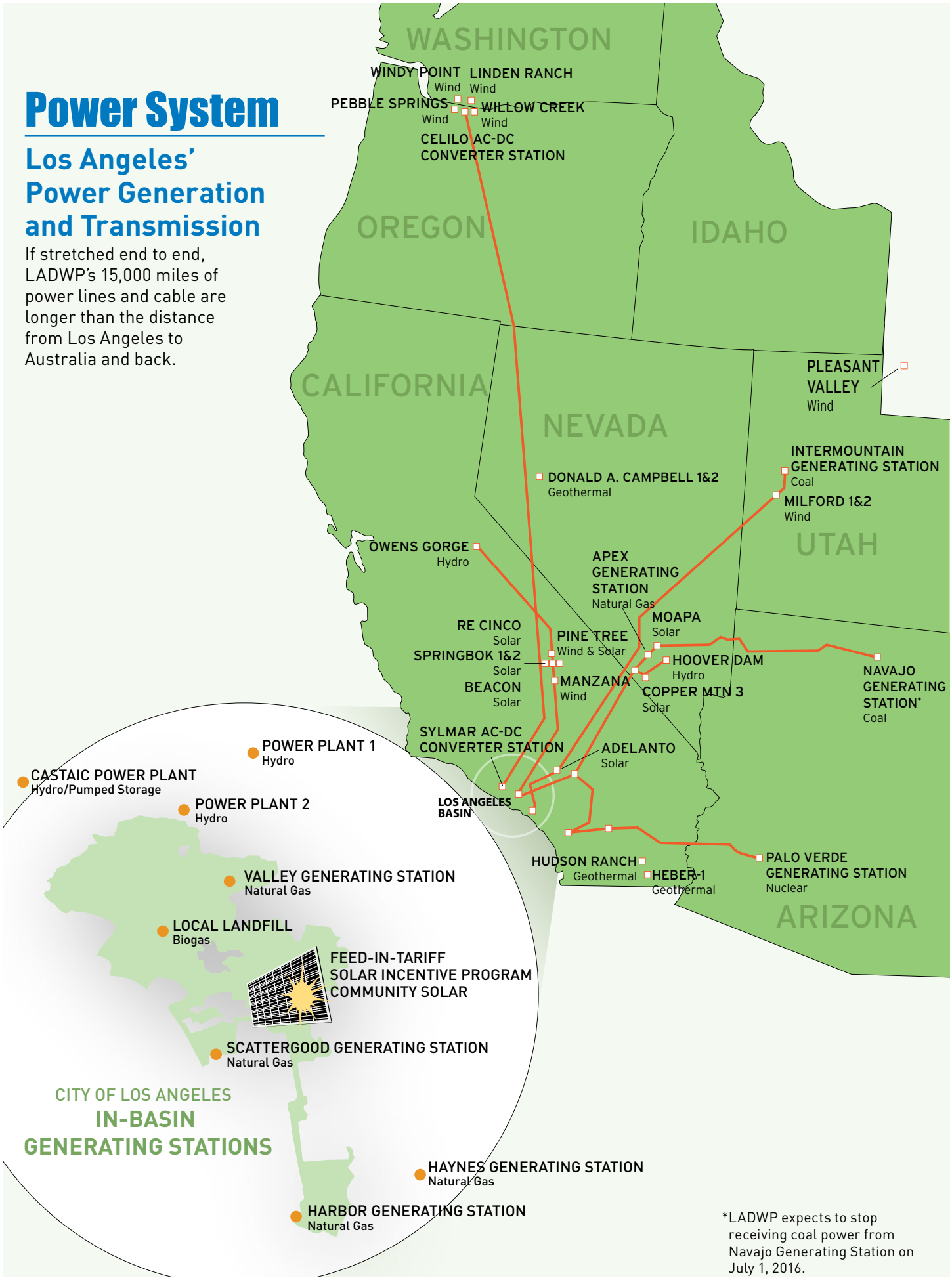
Michael F. Fleming was appointed to the Board of Water and Power Commissioners by Mayor Eric Garcetti and was confirmed by the Los Angeles City Council on September 11, 2013. Mr. Fleming is the Executive Director of the David Bohnett Foundation.

Christina Noonan was appointed to the Board of Water and Power Commissioners by Mayor Antonio R. Villaraigosa and confirmed by the Los Angeles City Council on August 10, 2010. She was re-appointed by the Mayor and then re-confirmed by City Council on August 12, 2011. She is a Senior Vice President of Jones Lang LaSalle's Los Angeles office.

Power System

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.



*LADWP expects to stop receiving coal power from Navajo Generating Station on July 1, 2016.

Power System

Andrew C. Kendall
Executive Director - Construction, Maintenance & Operations

Michael S. Webster
Executive Director - Engineering & Technical Services

LADWP's Power System is the nation's largest municipal electric utility, and serves a 465-square-mile area in Los Angeles and much of the Owens Valley. LADWP began delivering electricity in Los Angeles in 1916.

Power Facts and Figures

LADWP's Power System supplies more than 26 million megawatt-hours (MWh) of electricity a year for the City of Los Angeles' 1.4 million residential and business customers as well as over 5,000 customers in the Owens Valley.

Revenues & Expenditures

For fiscal year 2015-16, the Power System budget is $4.1 billion. This includes $1 billion for operations and maintenance, $1.6 billion for capital projects, and $1.5 billion for fuel and purchased power.

City Transfer

The Power System transfers 8 percent of its gross operating revenue (estimated at $265.6 million in (FY 2014-15) to the City's General Fund each year to provide critical City services such as public safety.

Electric Capacity

LADWP has over 7,640 megawatts (MW) of generation capacity from a diverse mix of energy sources.

Power Resources (2014)

(As reported to CEC)

Renewable energy	20%
Biomass & Biowaste	5%
Geothermal	1%
Small hydroelectric	1%
Solar	1%
Wind	12%
Natural gas	22%
Nuclear	9%
Large hydro	2%
Coal	40%
Other/Unspecified	7%

Power Use

Typical residential energy use per customer is about 500 kilowatt-hours (kWh) per month. Business and industry consume about 70 percent of the electricity in Los Angeles, but residents constitute the largest number of customers. The record instantaneous peak demand is 6,396 MW reached on September 16, 2014.

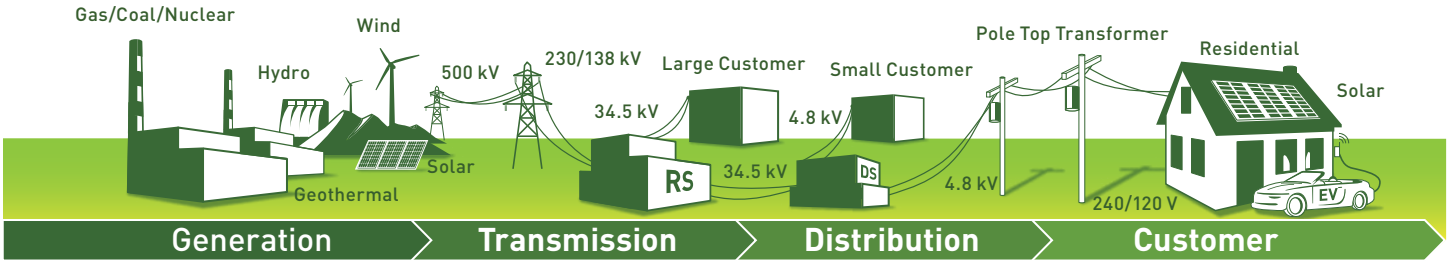
Power Infrastructure

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

Generation
4 in-basin thermal plants
14 small hydroelectric plants
1 large hydroelectric plant
1 wind plant
2 solar photovoltaic plants

Transmission
3,507 miles of overhead transmission circuits (AC and DC) spanning five Western states
124 miles of underground transmission circuits
15,452 transmission towers

Distribution
6,752 miles of overhead distribution lines
3,626 miles of underground distribution cables
160 substations
50,636 substructures
308,523 distribution utility poles
3,166 pole-mounted capacity banks
1.28 million distribution crossarms
31,728 utilitarian streetlights
128,693 distribution transformers



Power Supply Transformation

Over the next 15 years, LADWP will replace more than 70 percent of its existing power supply as well as rebuild and modernize much of its aging power grid infrastructure used to reliably deliver power to its customers.

LA's clean energy future—a future with more efficient use of energy, greater reliance on renewable energy, and zero coal—is being built right now through a complete transformation of LADWP's power supply.

To transition to a clean energy future, LADWP is making unprecedented investments in:

- Coal Transition
- Energy Efficiency
- Renewable Energy
- Rebuilding Local Power Plants
- Power Reliability
- Electric Transportation

All of these elements are essential to replacing coal power and creating a clean energy future for LA.

Integrated Resource Plan

The Power Supply Transformation is guided by LADWP's Integrated Resource Plan (IRP), a roadmap for transitioning out of coal while maintaining a reliable power supply, and doing so in a cost-effective manner. The IRP has been developed through a collaborative process and is updated every two years with input from customers and stakeholders.

The IRP balances key objectives of:

- Maintaining a high level of service reliability
- Maintaining competitive rates
- Exercising environmental stewardship, including a reduced carbon footprint

➔ Go to **www.ladwp.com/powerIRP** to learn more.

Coal Transition

Legislative Requirement

The California Greenhouse Gas Emissions Performance Standard (SB 1368) sets a cap on the level of greenhouse gas emissions from power imported into the state. LADWP is required to stop receiving coal power from two coal-fired generating stations when their current contracts and agreements expire.

Coal Transition Strategy

The Power System Integrated Resource Plan calls for replacing the portion of coal that LADWP receives each year from Navajo Generating Station in Arizona and Intermountain Power Plant (IPP) in Utah by increasing energy efficiency to at least 15 percent by 2020, expanding renewable energy to 33 percent by 2020 and 50 percent by 2030 while integrating and balancing this power with efficient and cleaner burning combined-cycle natural gas as a "bridge fuel" to ensure reliability.

Recent Accomplishment

Coal Transition Progress

In March 2013, the LADWP Board approved a contract that will enable LADWP to completely transition out of coal power. In collaboration with participating power utilities, LADWP will convert IPP to a smaller natural gas-fired generating station by 2025 at the latest, with efforts to begin that transition by 2020. Reducing the size of IPP will also free up transmission capacity to bring more renewable energy into Los Angeles.

In 2015, LADWP sold its 477 MW share of coal power from Navajo Generating Station to Salt River Project and the sale will close on July 1, 2016. The Navajo and IPP actions are major steps toward the transformation of the LADWP's power supply to create a cleaner and more sustainable energy future for Los Angeles.

Through these actions, the City of Los Angeles became the first major city in the United States to commit to becoming coal free.

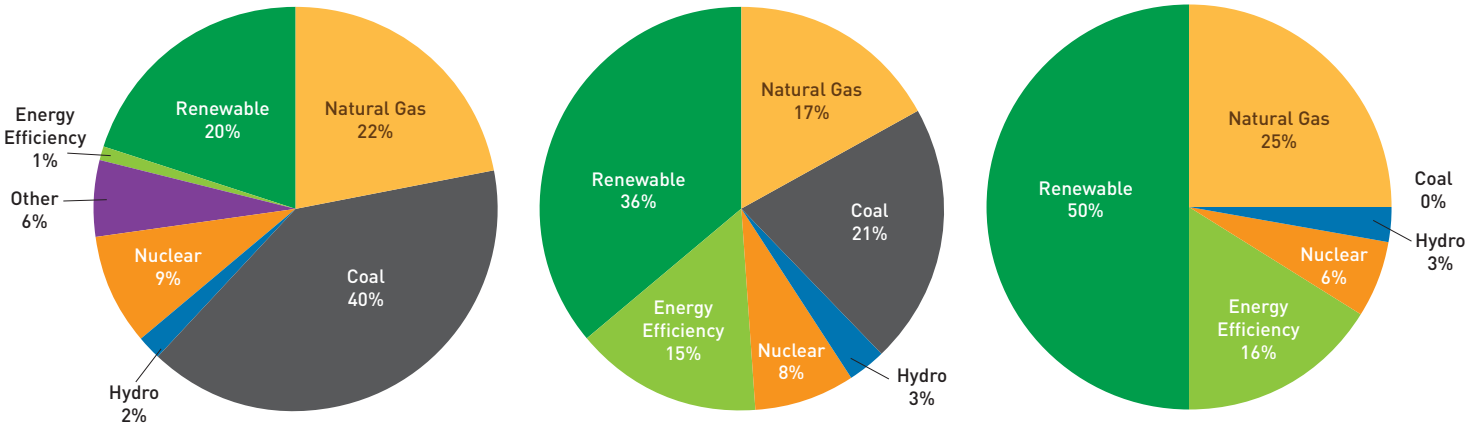
Reliability Through Integration

Completely eliminating coal from LA's power supply is a monumental step for LADWP. It is vital that policymakers, customers and stakeholders understand that this transition poses many challenges, and requires careful resource planning to maintain a steady flow of power to LA.

Coal power provides a reliable and steady flow of continuous baseload power, 24/7, while renewables such as wind and solar vary every day, throughout the day. Most renewables alone cannot replace coal as "baseload" power. For this reason, using clean and efficient combined-cycle natural gas is an important part of the coal replacement strategy. Cleaner burning natural gas provides a critical bridge fuel to ensure reliability.

All elements of LADWP's power supply transformation—energy efficiency, increased renewable energy, rebuilding its coastal power plants and securing new, cleaner burning natural gas—are needed to maintain reliability and ensure a successful and cost-effective transition out of coal.

LA's Future Power Supply Is Coal-Free



*Estimated percentages will differ from CEC reporting requirements (e.g. accounting for energy efficiency as a resource).

Road To Renewables

Legislative Requirement

State law (SB2 (1X) and SB350), as recently interpreted by the California Energy Commission (CEC), requires that California utilities meet the following Renewable Portfolio Standard (RPS) levels:

- Maintain average of 20% between 2011 and 2013
- 25% by 2016
- 27% by 2017
- 29% by 2018
- 31% by 2019
- 33% by 2020
- 40% by 2024
- 45% by 2027
- 50% by 2030 and thereafter

Recent Accomplishment

LADWP achieved 20 percent renewable energy delivered to customers in 2010, and is on track to meet 25 percent by 2016 and 33 percent by 2020.

A major focus of the 2015 and 2016 IRPs is to evaluate strategies to achieve the new goals established by recent state legislation (SB350) for 50 percent renewables by 2030.

RPS Expansion Policy

As LADWP expands its renewable resource portfolio, it is important that it do so in a cost-effective manner to minimize the impact on ratepayers. Some of the key considerations in selecting these resources include:

- Costs and operational impact of integrating renewables
- Technologies that deliver more energy during peak hours
- Preference for local projects
- Locating projects near existing transmission and other LADWP assets such as land and power infrastructure
- Diversification of resources

Recent Renewable Energy Projects

The following are renewable energy projects approved, under construction, and/or completed in the past two years that contribute to meeting LADWP's RPS goals:

Barren Ridge Renewable Transmission Project

Construction continued on a critical power transmission line that will enable LADWP to deliver additional renewable energy resources from the Tehachapi Mountains and Mojave Desert areas to Los Angeles. Crossing Kern and Los Angeles Counties, the Barren Ridge line will provide up to 2,000 MW of additional power transmission capacity to access vital wind and solar resources that are necessary to meet the RPS goals. The new line is scheduled to be in service by late summer 2016.

Recent Accomplishment

Barren Ridge and Haskell Switching Stations

After 2 ½ years of construction, Barren Ridge Switching Station Expansion was placed in-service in summer 2015. This critical station will connect the new Barren Ridge transmission line as well as several major solar projects (Beacon Solar – 250 MW, Springbok Solar 1 and 2 – 250 MW, and RE Cinco Solar – 60 MW) that are currently under construction or planned. Haskell Switching Station, the southern hub for the Mojave renewable corridor, is expected to be placed in service by April 2016.

Donald A. Campbell Geothermal Plant

Beacon Solar Project

In 2014, LADWP broke ground on the Beacon Solar Project, which will provide 250 MW of solar power. The project, which was already permitted for building ground-mounted solar photovoltaic systems, is situated adjacent to LADWP's Barren Ridge Switching Station in Kern County as well as the Pine Tree Wind and Solar projects. It will make use of the additional transmission capacity that will be available, making the area a renewable energy hub. The project, which is on schedule for completion by the end of 2016, is an excellent opportunity for large-scale solar and will create hundreds of green jobs in California.

Copper Mountain 3 Solar Project

In April 2015, the City of Los Angeles began receiving 210 MW of solar power from Copper Mountain 3, one of the largest solar arrays in the U.S. LADWP receives the majority of solar energy generated by Copper Mountain 3 in Boulder City, Nevada through the Southern California Public Power Authority (SCPPA), which has a long-term power sales agreement with the plant's owner, Sempra U.S. Gas and Power, to sell the power to LADWP.

Recent Accomplishment

Don A. Campbell Geothermal Power Plants I and 2

The Don A. Campbell 2 Geothermal Power Plant in Mineral County, Nevada was placed in service in September 2015, delivering 16.2 MW of important geothermal energy to Los Angeles homes and businesses. Completed 15 months ahead of schedule, the new plant is an expansion of the first Don A. Campbell plant, which has been delivering geothermal energy to Los Angeles since January 2014. Combined, the first and second phases of the plant are providing close to 30 MW of renewables for Los Angeles with an energy output of 245,000 megawatt-hours (MWh) annually—enough to serve 41,500 households and avoid 139,100 metric tons of carbon emissions, which is equivalent to removing 26,900 cars off the road.

Recent Accomplishment

Heber-1 Geothermal Project

Through another power purchase agreement, LADWP began receiving 34 MW of baseload, around-the-clock renewable geothermal energy from the existing Heber-1 Geothermal Project in Imperial County. LADWP started receiving power from the plant on an interim contract in December 2015. The 10-year contract began in February 2016.

Recent Accomplishment

Hudson Ranch 1 Geothermal Project

In 2015, LADWP entered into an agreement to purchase approximately 55 MW of renewable geothermal energy from Salt River Project's rights in the Hudson Ranch Geothermal Project located in the Imperial Valley of Southern California through 2021.

Manzana Wind Project

The Manzana Wind Project provides 39 MW of renewable energy to LADWP over a 10-year term effective December 2012. The power is generated by an existing 189 MW wind farm in Kern County. This project also provides a unique opportunity for LADWP to gain additional experience in working with the California Independent System Operator (CAISO), since the power is delivered to a Southern California Edison substation and then scheduled into the CAISO-controlled transmission system. Utilizing CAISO opens up more potential renewable projects and continues the spirit of cooperation as all California utilities find ways to meet the state's renewable energy requirements.

Recent Accomplishment

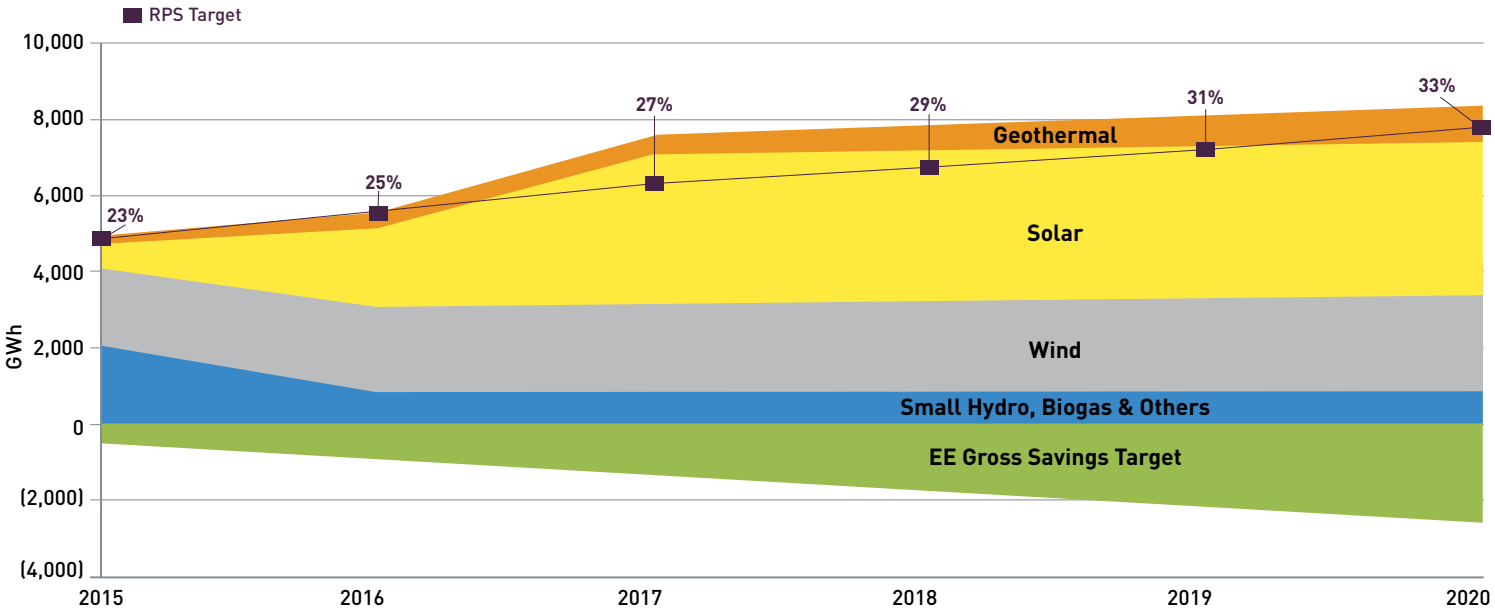
Moapa Solar Project

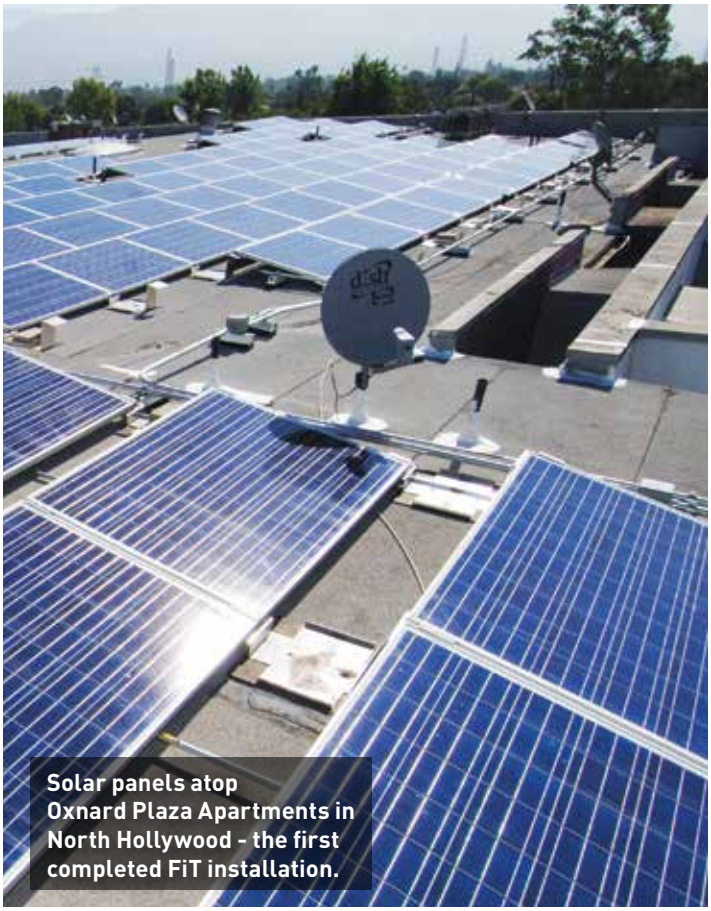
LADWP has entered a contract with the Moapa Southern Paiute Solar Project to deliver clean, solar energy for 25 years from a new utility-scale solar plant, which is under construction and expected to be complete in June 2016. LADWP will receive up to 250 MW of solar power from the new facility, located on approximately 2,000 acres on the Moapa River Indian Reservation in Clark County, Nevada.

Springbok Solar Power Projects 1 and 2

Power purchase agreements for Springbok 1 and 2 were approved by the Board in 2014 and 2015, respectively. Springbok 1 and 2 will generate 100 MW and 150 MW, and are expected to be in operation by the end of 2016.

Increasing Renewable Energy and Energy Efficiency





Solar panels atop Oxnard Plaza Apartments in North Hollywood - the first completed FiT installation.

Local Solar Programs

A key element of LADWP's renewable energy program is the development of local solar, particularly customer-based programs that tap into the city's abundant sunshine. Local solar projects help to meet LADWP's renewable energy targets and reduce the carbon footprint created by fossil fuel-burning power plants. Solar is also expected to be a vital catalyst for creating jobs and stimulating the green economy in Los Angeles.

Local solar projects are also beneficial to Los Angeles because they are "distributed generation," functioning like mini power plants that generate energy right where it is being used.

LADWP offers two local solar programs: the Solar Incentive Program and the Feed-in Tariff (FiT) Program. LADWP expects to launch a pilot Community Solar Program in 2016.

Solar Incentive Program

Legislative Requirement

In September 2007, LADWP revised its earlier Solar Incentive Program (SIP) guidelines to comply with SB1, the California Solar Initiative. Under this requirement LADWP committed to provide $313 million to support solar photovoltaic (PV) projects through 2016, with a goal of achieving 280 MW of solar PV by the end of that period.

Early in the program, LADWP's customer incentives were set higher than the State-mandated minimums in order to encourage greater participation in solar given LADWP's lower electric rates as compared to other California utilities.

As participation grew dramatically in response to increased availability of tax credits and dropping solar prices, the Board of Water and Power Commissioners lowered future incentive levels to be more in line with the State-mandated minimum levels. LADWP anticipates that by the end of the SB1 program in 2016, the Department will be very close to achieving its goal of 280 MW of customer solar generation.

Record Levels

In September 2011, LADWP relaunched SIP with a new incentive structure designed to increase customer participation while keeping the program at a manageable pace. Since then, LADWP has seen record levels of program participation. In 2015, customers submitted an average of 600 applications per month, compared to 40 per month in 2007 and 2008.

Recent Accomplishment

Solar Achievement

As of December 31, 2015, LADWP has paid approximately $272 million to customers in solar incentives. This amount includes $55 million provided prior to implementing the SB1 required program, and $217 million under SB1.

There are over 19,500 customer-installed solar systems connected to the grid. This represents 152 MW of solar capacity and generates 250,000 MWh per year.

Recent Accomplishment

Program Improvements

Responding to requests to speed up solar interconnections, LADWP revamped the SIP process to enable customers to get their new solar PV system up and running faster by separating the meter installation and interconnection process from the rebate process, among other changes. Effective December 4, 2015, customers, contractors and installers no longer have to wait for rebate applications to be processed in order to turn on a new solar system. Customers and installers may apply directly for the net meter installation and interconnection through a new website, www.ladwp.com/nem.

Among other changes designed to reduce delays, LADWP has modified its online reservation system so users can receive instantaneous reservations of incentive funds. In addition, the electrical requirements for systems under 10 kilowatts have been simplified to expedite meter installations and reduce installation costs.

➔ Go to **www.ladwp.com/solar** to learn more.

Feed-in Tariff Solar Program

Legislative Requirement

State legislation SB1332 requires utilities to provide a Feed-in Tariff (FiT) program that enables third parties to develop solar, or other renewable energy, and sell the power to the utility. LADWP's share of the statewide program is 75 MW.

Program Launched

LADWP has initiated the nation's largest municipal solar FiT program for up to 150 MW, which is more than the State's requirement, to expand solar energy in Los Angeles and boost the local economy. The program, which evolved through external meetings and discussions with over 500 stakeholders, was launched as a 10 MW demonstration program. After the pilot, LADWP launched the full 150 MW FiT program, including a 100 MW set-pricing program and a 50 MW program that bundles small local solar installations with a large-scale solar project on LADWP-owned land in the Mojave Desert.

FiT Demonstration Program

Designed to test the pricing structure and refine other program elements, the Demonstration Program garnered 26 applications for 7.2 MW of solar power. Out of these applications, three projects for 1.6 MW have been installed and will generate 3,100 MWh per year.

Recent Accomplishment

FiT100 Program

Since approving the 100 MW FiT Set Pricing Program in 2013, LADWP has offered five allocations totaling 100 MW for solar and other eligible renewable energy. Through the FiT Program, LADWP purchases power from third parties at a fixed price per kWh (based on a declining scale) under a standard offer power purchase agreement.

Since the program began, 23 FiT solar projects have been placed in service with an energy capacity of 14 MW. An additional 12.4 MW of solar FiT projects have approved contracts and are pending construction. As of February 2016, a total of 327 MW of solar projects have been reviewed and 64.6 MW of those projects are being considered for final approval.

FiT50/Beacon Bundled Solar Project

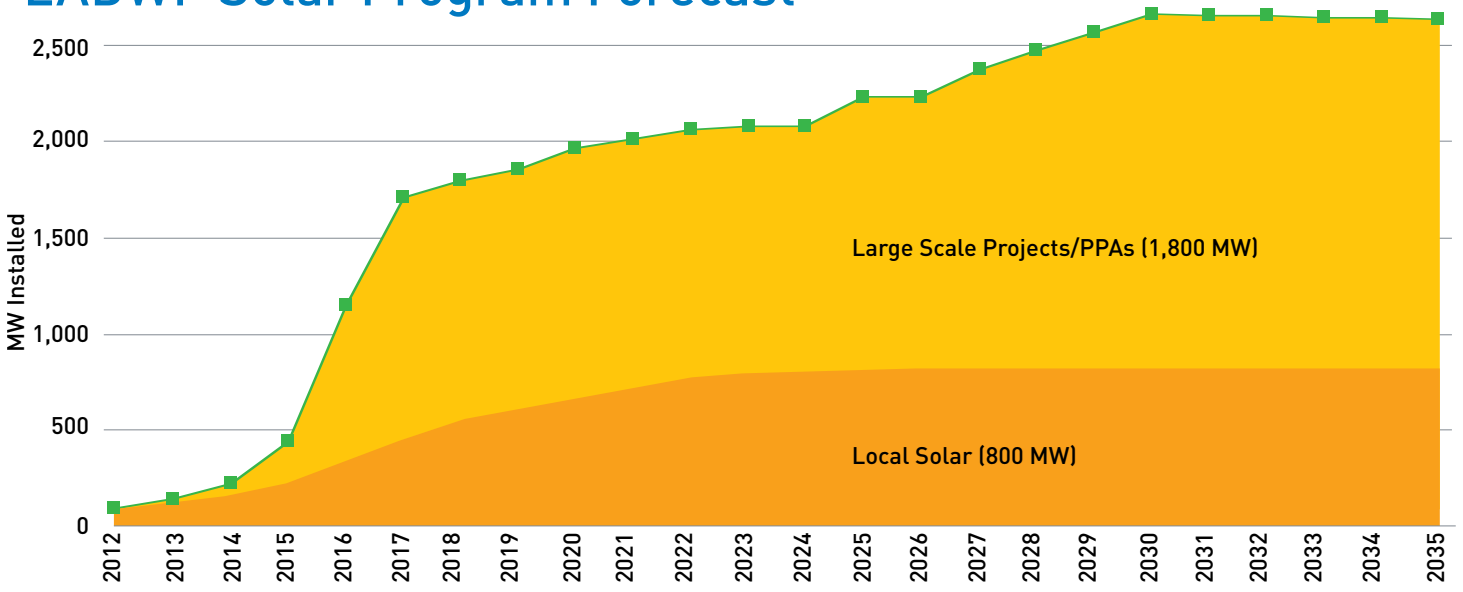
Approved in April 2013, this innovative program bundles 50 MW of local FiT solar projects as a requirement for bidding on the large-scale Beacon Solar Project, which has a total capacity of 200 MW available. This is a competitive pricing program aimed at developers interested in building large scale solar, and leveraging their resources to also expand rooftop solar projects within Los Angeles. The FiT 50 projects are in development and expected to be complete in February 2017.

Expanded FiT Program

In fall 2014, LADWP began developing an Expanded FiT Program. Paced at 50 MW per year, the Expanded FiT Program will be priced in a manner that is responsive to program participation. If approved by the Board of Water and Power Cummissioners and City Council, LADWP would launch the Expanded FiT Program by mid-2016.

➔ Go **to www.ladwp.com/FIT** to learn more.

LADWP Solar Program Forecast



*Local Solar combines energy from the SIP, FIT

Rebuilding Local Power Plants

Regulatory Issue

Once-Through Cooling (OTC) is the process of drawing ocean water and pumping it through a generating station's cooling system, then discharging it back into the ocean. The impact of OTC on ocean habitat is governed by the Federal Clean Water Act Section 316(b), administered by the State Water Resources Control Board, which developed a statewide policy in 2010 to reduce or minimize the impact of OTC on marine life.

Therefore, LADWP is eliminating the use of ocean water for cooling at its three coastal power plants—Scattergood, Haynes and Harbor Generating Stations—by 2029. This requires major capital projects, costing about $2.2 billion, employing complex engineering and design, and building in tight quarters without disrupting neighbors.

The repowering projects are especially challenging because they require concise timing in their planning and execution. No generating unit can be removed from service before its replacement is online.

Repowering Strategy

LADWP is pursuing a strategy to comply with state policy while also reconfiguring and modernizing its oldest generating units to increase reliability and to integrate renewable energy.

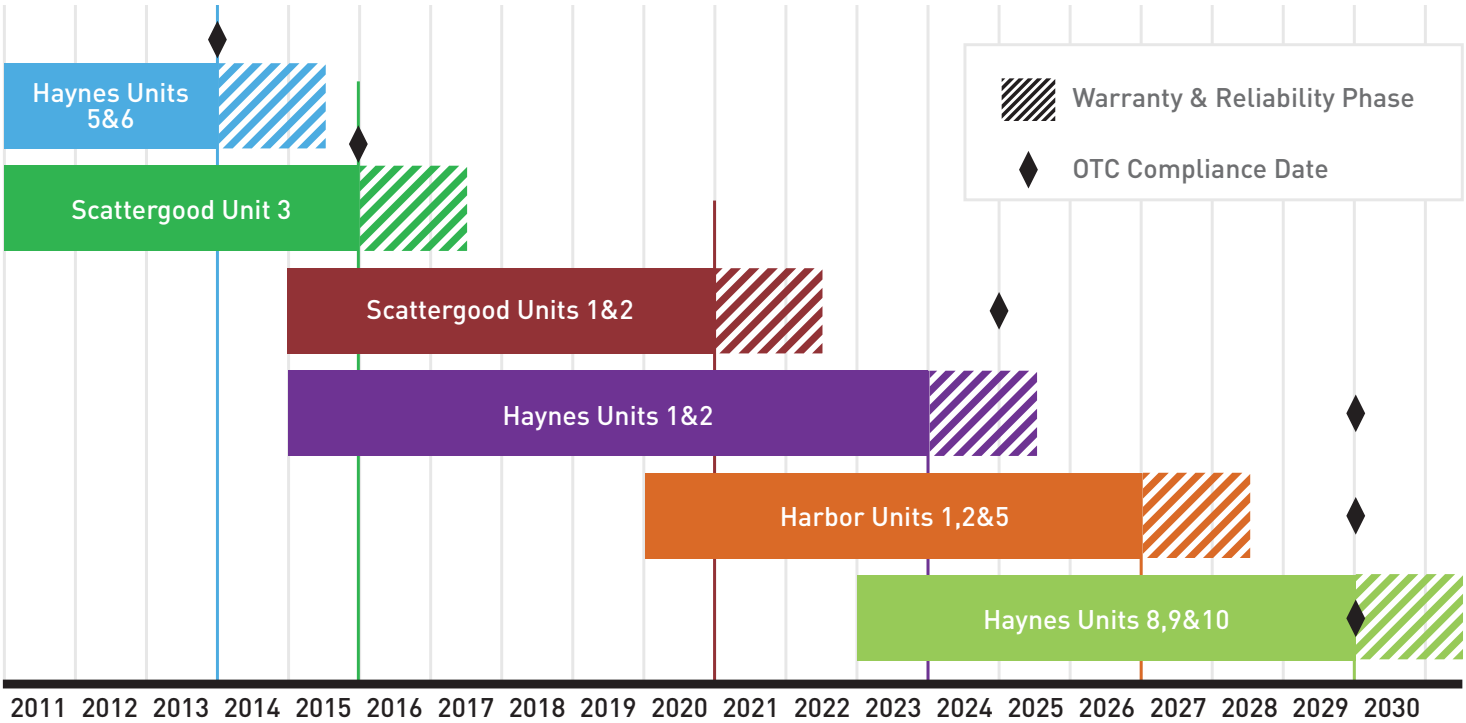
As LADWP works to expand renewable energy and eliminate coal power to achieve a clean energy future for Los Angeles, natural gas provides important "bridge fuel" to ensure efficient but reliable power supply. This is necessary because the most abundant renewable resources, solar and wind, are both variable. They do not produce energy if the wind is not blowing or the sun is not shining. Until more energy storage technology can be developed, natural gas is necessary to firm and back up renewables to ensure continuous, reliable power to LADWP customers 24/7.

Recent Accomplishment

Scattergood Generating Station

In December 2015, LADWP completed the first phase of modernizing Scattergood Generating Station in Playa Del Rey, replacing a 1970s-era conventional steam turbine with advanced power generation technology that will increase fuel efficiency and reduce emissions by 33 percent, while improving reliability and flexibility to ramp up to full power at a faster pace to meet peak demand periods. The Scattergood repowering will also reduce harmful impacts on marine life by replacing ocean cooling with an advanced air-cooling system. Scattergood Unit 3 has been replaced with 533 MW of a highly efficient gas-fired generation system consisting of a combined cycle system (natural gas and steam) and two quick-start turbines that can ramp up within 10 minutes from cold iron to full power. As a result of the rebuilding efforts, the flow of ocean water through Scattergood generating units has declined by over 54 percent, from approximately 495 million gallons per day (MGD) in 1990 to 224 MGD as of December 31, 2015.

Timeline for Rebuilding Local Power Plants



LADWP's schedule for OTC compliance.

With Phase 1 of the Scattergood Repowering Project complete, LADWP will focus its efforts on Phase 2, replacing and repowering Scattergood Units 1 and 2 with a combined-cycle generating unit that will utilize air-cooling in lieu of ocean water cooling. The old Scattergood Unit 3 will be demolished to create the construction area for the new generating unit, which is expected to be constructed by December 2020.

▼ **Scattergood Generating Station repowered with highly efficient generating system**

Haynes Generating Station

LADWP completed the first project to eliminate ocean cooling at Haynes Generating Station in June 2013. LADWP replaced two aging generating units with six 100 MW quick-start turbines that use air, rather than ocean water, for cooling. As with the new turbines at Scattergood, the faster units improve operational flexibility, using rapid start technology to ramp up to full power within 10 minutes.

Investing in Energy Efficiency

Legislative Requirement

Under AB 2021, publicly-owned utilities such as LADWP must identify, develop and implement programs for all potentially achievable, cost-effective energy efficiency savings and establish annual targets.

Transformation Element

Recognizing energy efficiency is a key element in the power supply transformation and aligning with the State legislation, LADWP has increased its goal to 15 percent cumulative energy savings by 2020, based on the most recent potential study completed in 2014. The new cumulative energy savings target, covering a 10-year period through 2020, is equivalent to powering about 61,500 homes annually.

Increased Investment

To achieve the 15 percent energy reduction by 2020, LADWP has significantly increased investment in energy efficiency over the past four years.

Guiding Principles

Since August 2012, LADWP has applied 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 (i.e. low-income residents, small businesses)
- Achieving tangible economic benefits for low-income customers
- Leveraging programs to support jobs for local workforce
- Working collaboratively with partner agencies on outreach and education, and to reach a broad and diverse customer base through a Southern California Gas Co. (SoCalGas) partnership
- Operating transparently and reporting results regularly

Efficiency Solutions

LADWP's Efficiency Solutions Business Group continues to develop cutting-edge, beneficial programs that cover the gamut of residential and commercial consumer rebates, direct installations for hard-to-reach customers, technical assistance, and incentives for commercial lighting and refrigeration efficiency measures.

Southern California Gas MOU

LADWP and SoCalGas have formed a unique public-private partnership that has expanded the reach of efficiency programs for both LADWP and SoCalGas customers. To date, 16 joint programs have been launched and several others are under development, or being considered.

➔ Go to **www.ladwp.com/energyefficiency** for more detailed information about LADWP Efficiency Solutions programs.

Greenhouse Gas Reductions

Legislative Requirements

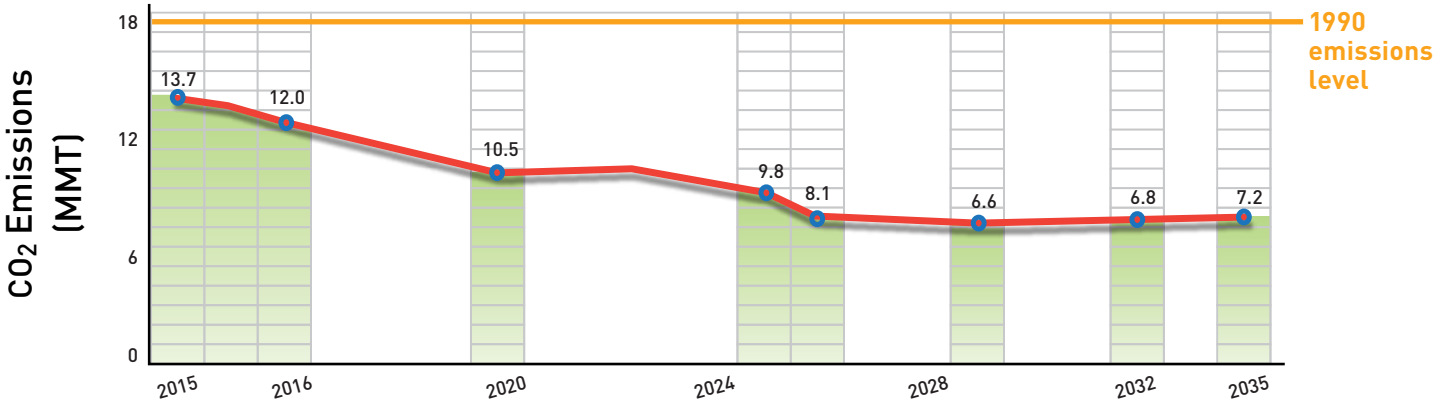
As previously mentioned, SB 1368 establishes a greenhouse gas emission performance standard at the level of, or below, the emission rate of gas-fired combined cycle units. Another piece of legislation, AB 32, the California Global Warming Solutions Act of 2006, calls for reducing the state's CO_2 emissions to 1990 levels by 2020.

Under the final regulations for the greenhouse gas emissions cap and trade program, LADWP receives allowances based on projected greenhouse gas emission reductions. This allows revenues generated through customer rates to be invested into renewable energy and energy efficiency projects that meet the RPS and energy efficiency goals.

On August 3, 2015, the U.S. Environmental Protection Agency finalized the Clean Power Plan, which will reduce

The Result: Creating a Clean Energy Future for LA

LADWP's CO_2 emissions are 23% below LADWP's 1990 level, and expected to be 55% below the 1990 level in 2025.
1990 Emission Level: 17.9 MMT



In 2025, LADWP will have reduced CO_2 emissions by 9.8 million metric tons, compared to the 1990 baseline level, equivalent to removing 2.1 million cars from the highway.

carbon pollution from electric generating units by 32 percent below 2005 levels by 2030. The Clean Power Plan establishes emission goals and guidelines for the electric generating units and requires states to develop plans to implement the guidelines.

Progress in GHG Emissions Reduction

LADWP has reduced its greenhouse gas emissions to 23 percent below its 1990 level due to the shutdown of the Mohave Coal Power Plant in 2005, ongoing repowering programs that began in the 1990s, and increased development of renewable resources.

LADWP's greenhouse gas emissions will decline dramatically as it progresses with plans to eliminate coal power, increase renewable energy and energy efficiency, and rebuild local power plants to be more efficient. Greenhouse gas emissions are expected to be 55 percent below the 1990 level by 2025—the equivalent of removing 2.1 million cars from the highway.

Power Reliability

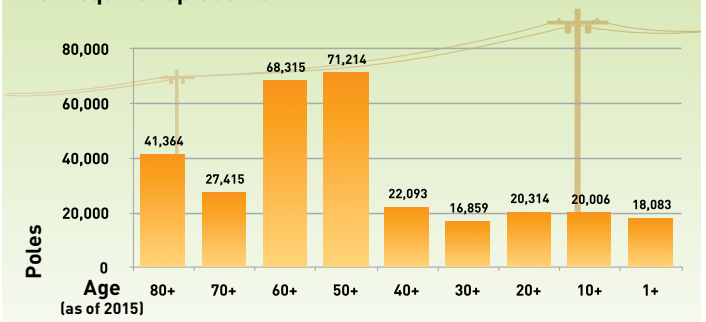
A significant ongoing issue for LADWP's Power System is the need to upgrade or replace critical aging power infrastructure to ensure continued reliability for its customers.

While a significant amount of work has been accomplished on LA's generating facilities, the power distribution infrastructure, such as poles and underground cables, remains a major focus, since this equipment is aging rapidly and requires increased investments going forward.

The majority of LADWP's power poles was installed during the city's rapid growth—1940s through 1960s. For example, if LADWP were to replace 5,000 poles a year, it would take over 25 years to replace all of the poles that are 60-plus years old (the average expected pole lifespan). During that time another 110,000 poles will become 60-plus years old, which would take another 22 years to replace. While not all poles over 60 years of age will need to be replaced, some newer poles may need to be replaced due to other factors.

Another area of concern is the backlog of temporary repairs awaiting permanent repair. There are approximately 53,000 of these "fix-it tickets" in the queue, and the number is growing by about 1,000 jobs per year.

Power poles are among the critically aging infrastructure that require replacement.



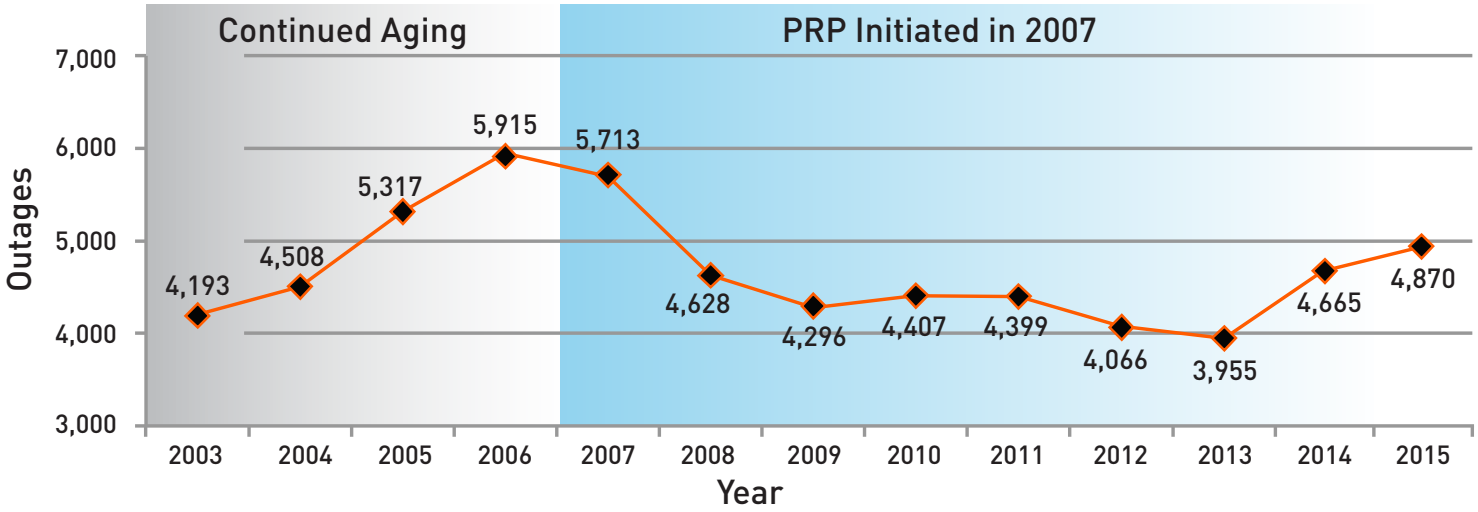
Note: approximately 3,917 poles do not have install dates

Recent Accomplishment

Power System Reliability Program

To address the problem of aging infrastructure, LADWP has: 1) expanded the original Power Reliability Program (PRP) to encompass all major functions of the Power System, including generation, transmission, substation, and distribution; 2) cost effectively prioritized reliability expenditures; 3) accelerated the replacement of aging Power System equipment; and 4) initiated a process to use contractors to assist in replacing its aging poles and cables.

Power Outages Relative to Investment Level



Electric Transportation Program

LADWP is a leader in fostering electric vehicle (EV) technology. The benefits of electrification include reducing the city's carbon emissions, saving costs for drivers because charging up vehicles is less expensive than gas, and helping integrate renewable energy into the LADWP power grid.

Recent Accomplishment

Charge Up LA! Rebate Program

To encourage Angelenos to buy or lease an electric vehicle, LADWP offers the "Charge Up LA!" EV Charger Rebate Program for residential, commercial and public agency customers. From June 2013 through November 2015, the Department paid over $2.8 million in EV charger rebates for 1,970 chargers under the program.

In February 2016, the Board of Water and Power Commissioners renewed the program with a higher rebate for commercial customers—up to $4,000 per installed charger—to foster more widespread charging opportunities at work and other public locations as well as for condominium and apartment complexes. The idea is to build confidence among EV drivers that they can travel farther from home without fear of running out of power. The updated program, which will run through June 2018, continues offering rebates of up to $500 to residential customers for the first home charger and an additional $250 if the customer installs a dedicated electric service for an EV.

Recent Accomplishment

Public Charging Stations

LADWP has worked with customers to install over 300 chargers located on City of Los Angeles property and at private, publicly accessible locations. LADWP has also installed 14 DC fast chargers at publicly accessible locations, and also received grant funds to install 104 more.

In addition, new EV chargers have been installed at LAX, the LA Department of Transportation parking garages, and the LA Zoo. Electrical infrastructure upgrades will help reduce both the frequency and duration of power outages, and to support the increased power demand necessary for EV charging.

Recent Accomplishment

LADWP EV Fleet

LADWP operates one of the largest plug-in fleets in the City with 67 vehicles. Along with passenger vehicles, LADWP has invested in heavy-duty vehicles including plug-in hybrid bucket trucks and digger derrick trucks.

➔ Go to **www.ladwp.com/ev** to learn more.

Advanced Metering Initiative

The Smart Grid Regional Demonstration Program, called Smart Grid LA, is a joint effort of LADWP, the US Department of Energy (DOE), and a consortium of the region's top research institutions, including USC, UCLA, and JPL. The goal is to deploy and test a host of new technologies, such as automated switches, monitors, controllers, and meters that will relay information to each other through a near-real-time communications network. The Demonstration Program, initiated in 2010, will be completed in 2016. It features a web portal allowing participating customers to share efficiency achievements, receive notifications to reduce energy during peak demand periods, and help meet energy use targets.

Since the Demonstration Program is largely complete, LADWP is investigating the feasibility of a full-scale Advanced Metering Infrastructure (AMI) program. Over the next several years, the prospective program will phase in the systemwide deployment of advanced meters and the underlying communication network that comprises the infrastructure. During the first phase, LADWP expects to initiate broader demand-response offerings and other customer programs that will be expanded in subsequent phases.

The AMI aims to empower LADWP's customers with the proper knowledge and tools to manage their usage and costs, providing them superior reliability and value in their electric service, and continuing to provide responsible environmental stewardship. LADWP will focus on these objectives while engaging in a new partnership with our customers. Ultimately, the program will be broadened to include smart grid technologies for water distribution to improve leak detection and help customers better manage their water use.

➔ Go to **www.ladwp.com/smartgrid** to learn more.

Jobs: Utility Pre-Craft Trainee Program

To create a path for young and new workers into utility careers, LADWP, IBEW Local 18 and other local agencies introduced the Utility Pre-Craft Trainee (UPCT) Program. The training program paves the way for career-path jobs while addressing the issue of rising retirements and the need for new skilled employees. An integral part of the green jobs pipeline for Los Angeles, the UPCT program provides pre-apprenticeship training for entry-level workers who are looking for long-term positions in the water and power utility fields.

Among other jobs, UPCT employees are utilized to perform energy efficiency work, solar installations, and rotate through water, power, and support services, to try other types of work. By offering these positions, LADWP is preparing new workers to fill critical vacant jobs throughout the Department.

Electric Rates and Finance

2016-2020 Electric Rate Request

In March 2016, LADWP received approval of its 2016-2020 power rate changes, which will provide electric rate increases over the next five years. For a typical residential customer using 500 kWh per month, the power rates will increase an average of 1.56 percent each year, or about $5.85 per month annually at the end of five years. For all LADWP customers, including residential, commercial, industrial and governmental customers, the power rates will increase an average of 3.86 percent annually over the five years.

The new rates, which became effective April 15, 2016, will provide about $720 million in new revenues to meet mandates and clean energy goals. Among the various mandates are increasing renewable energy sources, expanding energy efficiency programs, modernizing coastal generating units to eliminate ocean water cooling, eliminating coal and reducing greenhouse gas emissions. Additional revenues will also help ramp up the replacement of aging electrical infrastructure to ensure future reliability.

Rate Structure Changes

The approved electric rate ordinance includes several additional changes in the rate structure developed to meet financial and policy goals. These include:

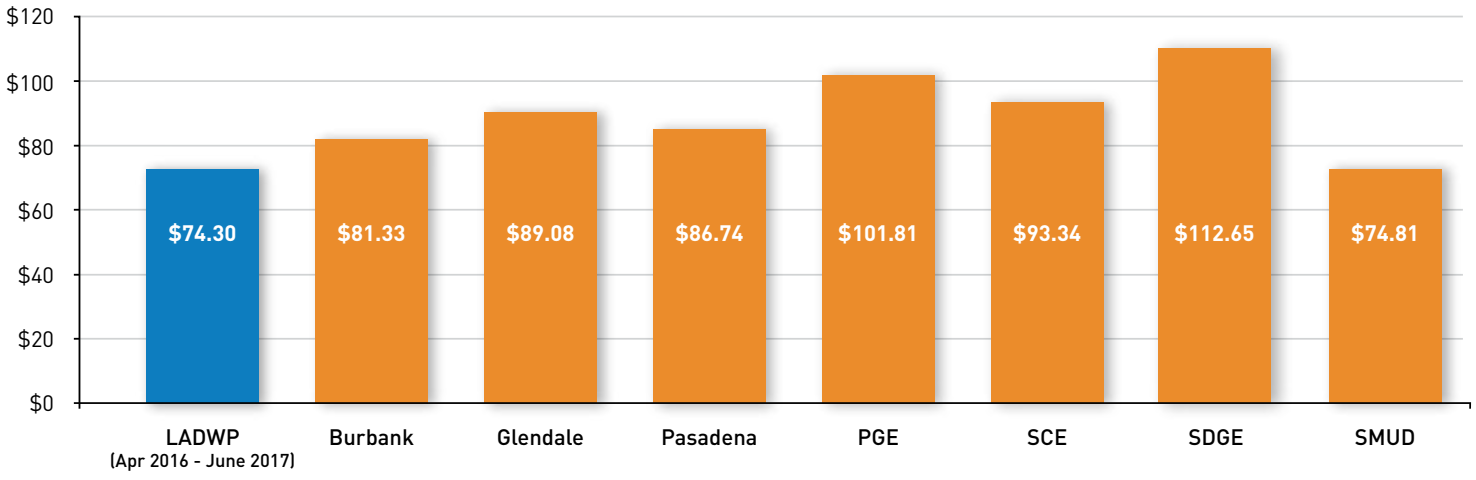
- Adding a power reliability "pass-through" factor to pay for power infrastructure improvements
- Adding a Power Access Charge to cover the fixed costs of operating the power grid based on how much energy a customer consumes
- Rebalancing the rates among customer sectors according to the recent Cost of Service Study
- Adding a Base Rate Revenue Target (BRRT) to encourage conservation while covering LADWP's fixed cost

Comparison of Rates

While rate increases are never easy, LADWP's new rates still remain among the lowest in California. A typical electric customer in LADWP's service area pays approximately 10 to 30 percent less than similar customers served by investor owned utilities in Southern California. LADWP is undertaking the largest capital investment program in its history, while keeping competitive rates by maintaining favorable financial metrics.

➔ Go to **www.myLADWP.com** to learn more.

Comparison of Typical Residential Monthly Bill*



*Based on using 500kWh/month, as of March 2016

Los Angeles Department of Water & Power

Water System

Los Angeles' Water Sources

Water System

Marty Adams
Senior Assistant General Manager - Water System

LADWP's Water System is the nation's second largest municipal water utility, and serves a population of 4 million people within 473 square miles. The Water System supplies approximately 167 billion gallons of water annually and an average of 458 million gallons per day for 681,000 residential and business water service connections.

The availability of water has significantly contributed towards the tremendous growth and development of Los Angeles. Since 1902, when the population in Los Angeles was approximately 146,000, until today, the Water System has worked tirelessly to ensure that Angelenos receive a safe and reliable water supply.

In 2016, now in the fifth year of drought in California, LADWP continues its water conservation efforts. The city has been successful in meeting water conservation mandates established by Mayor Eric Garcetti and the state.

The Water System has identified three areas as its top priorities: **safety** of drinking water, **reliability** of water infrastructure, and **sustainability** of water supplies.

Water Facts and Figures

The Water System is responsible for supplying, treating, and distributing water to the City of Los Angeles.

Revenues & Expenditures

For fiscal year 2015-16, the Water System budget is $1.69 billion, including $462 million for operations and maintenance, $956 million for capital projects, and $272 million for purchased water.

Water Supply Sources (5-year average)*

LA Aqueduct (Eastern Sierra Nevada): 29%
Purchased water (MWD): 57%
- Bay Delta 48%
- Colorado River 9%

Groundwater:.....12%
Recycled water: 2%

*FY 2011-15

Water Use

Average Daily Use Per Capita: 113
Gallons Per Day (GPD)

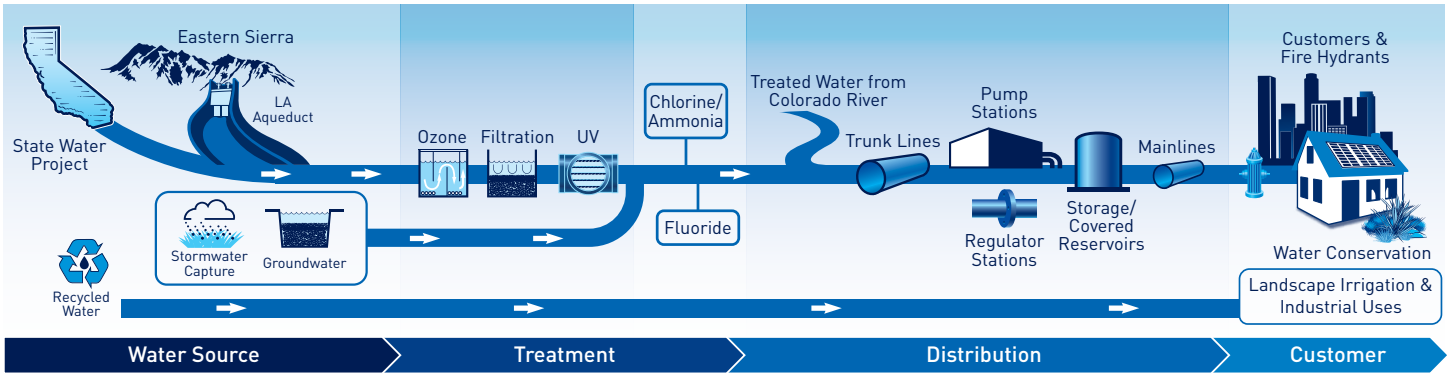
Residential Customers
347,000 acre-feet (428 million cubic-meters) per year, or 310 million GPD

Commercial/Industrial/Institutional Customers
160,000 acre-feet (197 million cubic-meters) per year, or 143 million GPD

Annual Water Sales to Customers
(as of FY 2014-15)
167 billion gallons (or 632 billion liters)
Water Service Connections (Active):..... 681,000

Water Infrastructure

Tanks and Reservoirs:..... 119
Pump Stations: 96
Ammoniation Stations:.....9
Chlorination Stations: 25
Regulator Stations:.....325
System Pressure Zones:..... 113
Distribution Mains and Trunk Lines (miles): 7,337
Fire Hydrants:..... 60,714
Total Storage Capacity (acre-feet):..... 315,245



Sustainability

Recent Accomplishment

Urban Water Management Plan

LADWP's Urban Water Management Plan (UWMP) provides a framework for developing a sustainable water future. The UWMP is updated every five years and analyzes the water supply and changes in demand for the next 25 years. The goal is to meet new demand for water through additional conservation and local resource development. LADWP is preparing the 2015 UWMP and when completed, the long-term water supply strategy will focus on:

- Expanding water conservation
- Expanding water recycling
- Enhancing stormwater capture
- Cleaning up the San Fernando groundwater basin

With the projected significant increases in conservation and local water supplies, Los Angeles expects to meet the Mayor's Sustainable City pLAn goals, including reducing Metropolitan Water District (MWD) purchases of imported water in half by 2025, and increasing local water sources to more than 50 percent by 2035.

➔ Go to **www.ladwp.com/water** to learn more.

Recent Accomplishment

Mayor's ED 5 and State Goals

As a record statewide drought continues into its fifth consecutive year, LADWP is working to meet aggressive conservation targets established by Mayor Eric Garcetti and the State to reduce water usage.

- The Mayor's Executive Directive No. 5 (ED5) calls for a reduction in water use per capita of 10 percent by July 1, 2015, 15 percent by January 1, 2016, and 20 percent by January 1, 2017.
- The State Water Resources Control Board (SWRCB) Emergency Conservation Regulation mandated that LADWP reduce water use by 16 percent from June 2015 through February 2016. The State revised LADWP's water conservation target to 14 percent as of March 1, 2016.

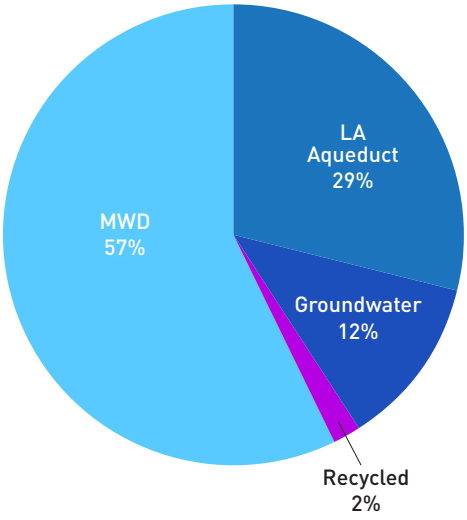
LADWP is on track to meet both of these mandates. LADWP met the Mayor's first two milestone targets for July 1, 2015 and January 1, 2016. As of the end of 2015, LA's water use was 107.6 gallons per capita, which puts LADWP on track to meet the Mayor's 20 percent reduction target. From June to December 2015, LADWP reduced water use by 16.7 percent, which exceeded the State Emergency Conservation Regulation's target. These impressive water savings were achieved through a combination of aggressive conservation outreach, increased enforcement of water restrictions, and a wide array of rebates and incentives.

LADWP has also increased efforts to replace lawns at its own facilities. As of December 2015, LADWP had retrofitted 49 facilities with water-wise landscape, totaling 406,363 square feet of turf removed and over 827,449 square feet of total California Friendly® landscaping installed.

Water Supply

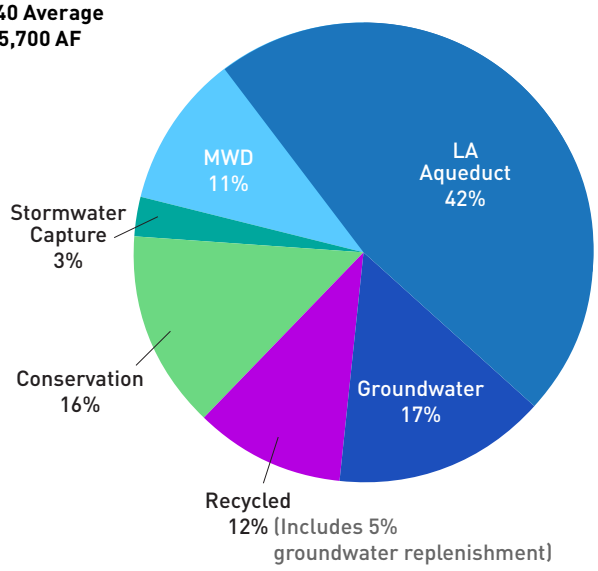
Present

FY 2011-15 Average
Total - 550,355 AF



Future

FY 2039-40 Average
Total - 675,700 AF



Recent Accomplishment

Water Conservation

With critical drought conditions persisting in Los Angeles and Southern California, LADWP continues to urge customers to use water wisely. Historically, Angelenos have a strong conservation ethic. The City of Los Angeles has long recognized water conservation as the core of multiple strategies to improve overall water supply reliability. Los Angeles has one of the lowest water use per capita levels of any major US city. Water use is about the same as it was in the 1970s, despite a population increase of over 1 million people.

Recent Accomplishment

Outreach and Rebate Programs

On April 9, 2015, the new "Save the Drop" Water Conservation Outreach Campaign was launched. This campaign is a partnership between the Mayor's Office and LADWP. Outreach materials include public service announcements, radio spots, event handouts, and signage on the sides of Bureau of Sanitation trucks. The campaign also partnered with celebrities such as Steve Carrell, Jaime Camil, and Moby for public service announcements airing on TV, cinema, and radio. The campaign focused on behavioral changes and rebates to help meet the Mayor's Executive Directive No. 5.

LADWP continues to offer a myriad of rebate options to customers to help them respond to the call to conserve water. LADWP's current rain barrel rebate is $100 per barrel, its cistern rebate is $400, and turf removal rebate is $1.75 per square foot for residential customers and up to $1.00 per square foot for commercial customers. The turf removal rebate that LADWP has offered boosted the popularity of the program tremendously, and in fiscal year 2014-15, a new record was set with 14.7 million square feet of turf removed. Since the program started in 2009, LADWP customers have removed over 43.9 million square feet of turf, including 33.5 million square feet since ED5 was issued in 2014. In 2015, LADWP residential customers' participation in water conservation rebate programs grew by 503 percent compared to 2014. Commercial rebate programs increased by 601 percent compared to the prior year.

Recent Accomplishment

Home Water Report Pilot Study

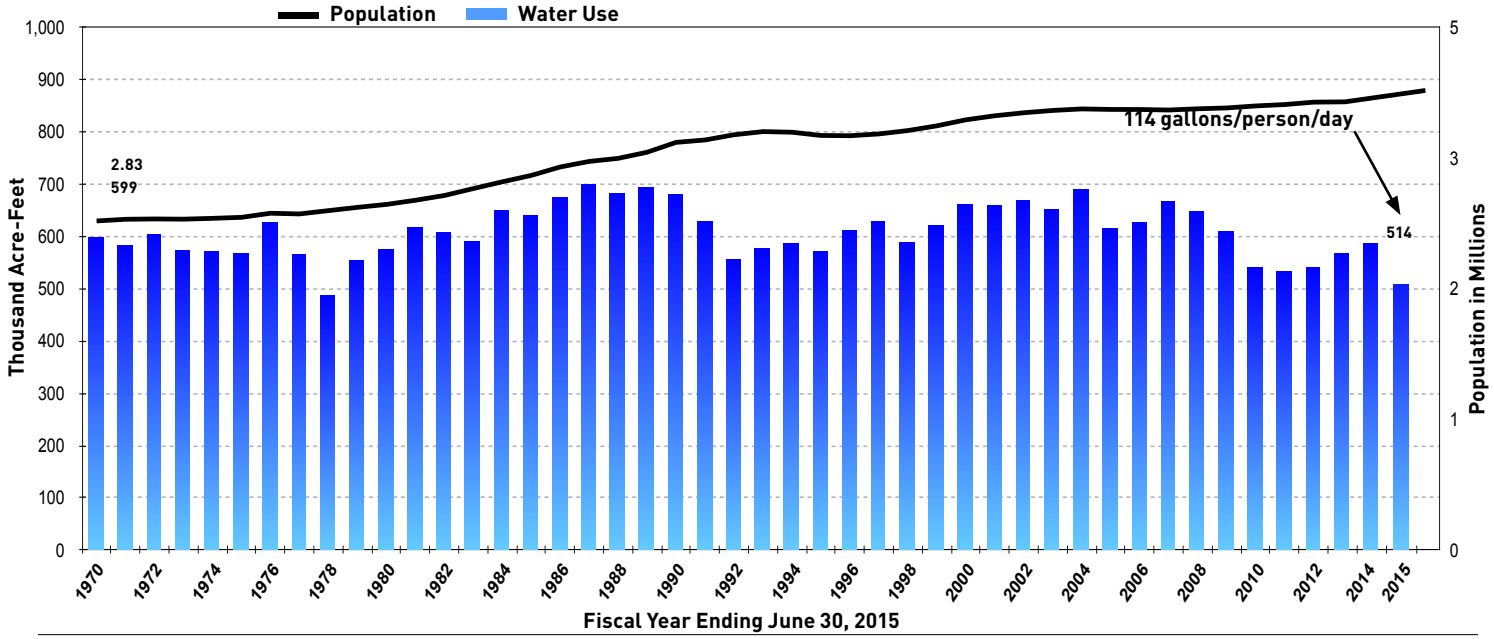
In December 2014, LADWP started its Home Water Report Pilot Study, a water conservation engagement program that provides customer-specific education and outreach. Through the program, approximately 72,000 single-family customers are receiving bi-monthly home water reports. These reports provide the customers with easy-to-understand information on their water usage, statistics on how they compare to similar households with average and efficient water use, and customized water saving tips and rebate recommendations.

After the pilot is completed in 2017, LADWP will analyze results to determine the savings potential and cost-effectiveness of the program. The results of the pilot will assist LADWP in planning a long-term program that targets all single-family residential customers.

Water Conservation Response Unit

LADWP's Water Conservation Response Unit (WCRU) has stepped up visibility by patrolling the city in bright blue cars that say "Keep Saving Water L.A.!" and actively responding to complaints about water waste. In 2015, the WCRU handled 16,848 complaints, mailed 12,244 educational warning letters, and conducted 3,173 in-person inspections.

Historic and Projected Water Use and Population



Recycled Water

Recycled water is a critical element of LADWP's local water supply strategy. Since 1960, the City has recognized the potential for water reuse and invested in recycled water treatment that meets Federal and State standards (Title 22) for non-potable water uses, including irrigation, industrial and environmental uses, and in infrastructure (commonly known as purple pipes) to convey recycled water to customers.

Under the draft 2015 Urban Water Management Plan, LADWP's proposed goal is to use 75,400 acre-feet per year (AFY) of recycled water by 2040.

Recent Accomplishment

Recycled Water Expansion

Recycled water was first used in Los Angeles in 1979 for park and landscape irrigation. LADWP used 10,421 acre-feet (AF) in 2014-15 for irrigation, industrial and seawater barrier intrusion prevention. LADWP serves recycled water to 200 customers, including Griffith Park, seven City-owned golf courses, Loyola Marymount University, Los Angeles World Airports, Valley Generating Station, Playa Vista Development, Forest Lawn Memorial Park, CalTrans, and NBC Universal. LADWP's newest customer is Hansen Dam Golf Course, which was brought online in January 2015 and aimed to save 500 AFY of potable water.

LADWP also provides about 38,000 AFY of treated wastewater to West Basin Municipal Water District to further treat and provide recycled water to municipalities in west Los Angeles County. An additional 27,000 AFY of recycled water is used for environmental purposes at Lake Balboa, the Donald C. Tillman Japanese Garden, and the Wildlife Lake.

Implementation of LADWP's recycled water program continues to move forward with the addition of new purple pipe. Agreements recently approved will expand the Terminal Island Water Reclamation Plant in the Harbor, and create new connections to Burbank's recycled water lines to provide recycled water to North Hollywood. LADWP is also evaluating a partnership with Las Virgenes Municipal Water District to provide recycled water in Woodland Hills.

LADWP is also moving forward with the Recycled Water Consumer Capital Incentive Program. This program will provide funding assistance for customers who have on-site costs associated with converting to recycled water.

Recycled Water Master Planning

In 2012, LADWP completed its Recycled Water Master Planning documents which details the Department's plans to increase the supply of recycled water to offset potable water demands. The Recycled Water Advisory Group, a caucus of engaged community members, was recognized jointly by the Board of Water and Power Commissioners and the Board of Public Works for advancing recycled water as a local, safe, and reliable supply for the city. December 2014 marked the five-year anniversary of the launch of the Recycled Water Advisory Group. LADWP and the Bureau of Sanitation actively sought stakeholder involvement during the development of the Recycled Water Master Planning documents through ongoing outreach strategies since 2009. These strategies included public forums, elected official briefings, and presentations to Neighborhood Councils and community groups.

Groundwater Replenishment

LADWP is pursuing the Los Angeles Groundwater Replenishment Project to use up to 30,000 AFY of highly purified recycled water to recharge the San Fernando Groundwater Basin. This effort will help maintain the reliability of the City's local water supply and reduce the need for imported water. The Draft Environmental Impact Report for the GWR Project was released in early 2016. Project completion is expected in 2024.

Stormwater Capture

Stormwater is an underutilized resource in Los Angeles. Capturing and reusing more stormwater is a natural way to replenish local groundwater aquifers while improving water quality in our ocean, rivers and other water bodies.

Currently, the average stormwater capture is about 64,000 AF annually. By 2035, the annual stormwater capture is expected to more than double to 132,000 AF.

Recent Accomplishment

Stormwater Capture Master Plan

In August 2015, LADWP completed the final Stormwater Capture Master Plan to guide efforts to enhance the beneficial uses of stormwater runoff as a supplemental water resource for Los Angeles.

Stormwater enhancement efforts include larger, centralized projects that will increase groundwater pumping by an estimated 15,000 AFY in the San Fernando Groundwater Basin. Smaller, localized stormwater capture projects will provide an additional 2,000 AFY.

Stormwater Projects

In partnership with the Los Angeles Flood Control District (LAFCD) and other governmental and non-governmental agencies, LADWP has completed several major stormwater enhancement projects while others are underway. A few of the major projects underway include enhancing the Tujunga and Hansen Dam spreading grounds.


Purple Pipe Bridge at Hansen Dam Golf Course


Rain barrels help capture stormwater

Hansen Dam Golf Course

Tujunga Spreading Grounds Enhancement Project
A two-year construction project is expected to begin in July 2016 to enhance the Tujunga Spreading Grounds, which is owned by LADWP and operated by the District. The enhancements will include relocating and automating the current intake structure on Tujunga Wash, installing a second automated intake to receive flows from the adjacent Pacoima Wash, and reconfiguring the existing spreading basins, among other upgrades. LADWP will provide $27 million to LAFCD for construction. Once complete, the project is expected to increase stormwater capture by 8,000 AFY.

Hansen Spreading Grounds Enhancement Project
LADWP provided $4.2 million to LAFCD to reconstruct the basins to increase the capacity and efficiency of the spreading grounds. Improvements to the intake structure were completed in January 2013, and are expected to increase average stormwater capture by 2,000 AFY.

Groundwater Cleanup

Man-made pollution, caused by industrial activities beginning in the 1940s, has severely impaired the quality of San Fernando Basin groundwater, forcing closure of over half of LADWP's production wells. LADWP is taking action to remove the contamination from the groundwater to restore the beneficial use of the aquifer, which once provided adjudicated water rights of 87,000 AFY.

To begin the remediation and cleanup of the local groundwater resources, LADWP has completed the construction of 25 groundwater monitoring wells in various areas of the eastern San Fernando Basin where the city's major wellfields are located.

The wells, along with a network of more than 70 existing wells, are being used to characterize the basin's groundwater quality in order to design and construct groundwater remediation facilities for removing contamination from the city's major wellfields in the San Fernando Basin.

Water samples collected from the production and monitoring wells were analyzed to determine the nature and extent of the pollution. The location of each well was selected in coordination with drinking water regulators to measure the water quality along specific groundwater flow paths which lead toward LADWP wellfields.

The groundwater sampling effort was completed in 2014, and the initial findings of the characterization study were determined in early 2015. Preliminary findings have been reviewed with the State Water Resources Control Board, Division of Drinking Water (DDW), and LADWP expects to seek DDW approval to construct major groundwater remediation facilities. These facilities, expected to be operational by 2021, will be designed to remove contamination from the local groundwater to protect the environment and the public.

Owens Valley

LADWP has maintained a significant presence in the Owens Valley for over 100 years. Since the early 1900s when the City of Los Angeles began purchasing land in the Owens Valley to secure water rights, the City has been the single largest landholder on the valley floor. Since construction of the First Los Angeles Aqueduct (LAA) in 1913, a major portion of LA's water supply has come from the Owens Valley.

LADWP manages nearly 315,000 acres of land in the Eastern Sierra to protect the city's watershed. Throughout the past century, LADWP has followed a consistent policy of making Owens Valley lands available for recreation, ranching, horse and mule packing, and use by businesses, schools, and public agencies.

The Water System operates and maintains water supply facilities in the Eastern Sierra, including the First and Second LAA, several reservoirs, and hundreds of miles of canals and ditches.

Recent Accomplishment

Protecting the Owens Valley Environment

The year 2015 marked the worst drought in California's recorded history, yet LADWP was able to meet its environmental commitments in the Owens Valley through some innovative engineering. After using what little water was available in the Eastern Sierra to meet its commitments in the Owens Valley for the irrigation season, LADWP removed a temporary dam it had placed in the Los Angeles Aqueduct. The earthen and concrete structure was put in place in April 2015 near the south end of Owens Lake to hold back Eastern Sierra runoff water in the Owens Valley for environmental purposes during this period of extreme drought. The first-of-its-kind dam enabled LADWP to successfully meet its environmental and other water commitments in the Owens Valley.

The total Eastern Sierra water supply on an average year is approximately 541,000 AF. Of this amount, approximately 220,000 AF are typically exported from the Eastern Sierra region to Los Angeles. The rest remains in the Owens Valley for uses including environmental mitigation, recreation, habitat enhancement, irrigation and dust mitigation on the Owens Lake, among others. Due to extreme drought, only about 27,000 AF of water gathered from the Eastern Sierra were exported to Los Angeles in 2015, which is only 12 percent of what is typically exported during a year with normal hydrology.

Lower Owens River Project

The Lower Owens River Project (LORP) is the largest river restoration effort of its kind in the United States. Begun in December 2006, the LORP encompasses re-watering a 62-mile-long stretch of the Owens River that was essentially dry after diversions into the Los Angeles Aqueduct began in 1913. In addition to creating new riverine-riparian habitat, the project also includes the 20,400 acre Blackrock Waterfowl Management Area, several off-river lakes and ponds, and the Owens River Delta Habitat Area. Since its completion, the effort has seen the resurgence of willow and cottonwood trees; songbirds, waterfowl and shorebirds are increasing in numbers; and recreational opportunities for anglers, botanists, hunters, hikers, boaters and bird watchers have also been enhanced.

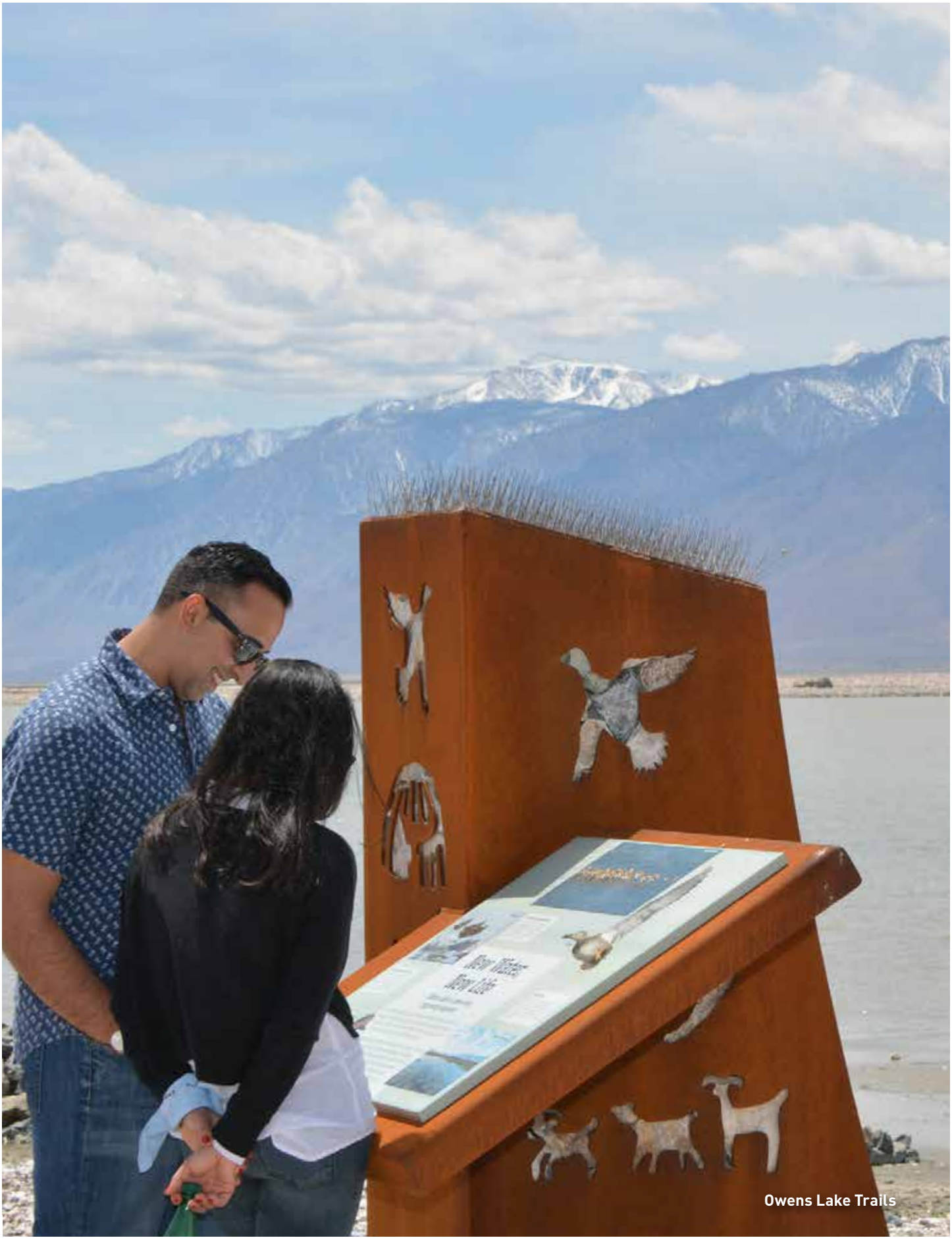
Environmental Efforts on Owens Lake

Since 2001, LADWP has devoted immense financial and water resources to live up to its obligations to mitigate dust emissions at Owens Lake related to its water diversions. LADWP customers have funded the largest dust-control project in American history, covering more than 45 square miles of the lakebed with water, vegetation or gravel. The project has required massive construction, operation and maintenance efforts by LADWP—as well as over 80,000 acre-feet in 2013 alone—at a total cost of more than $1.6 billion to date. This has resulted in substantial and enduring environmental progress, leading to a 96 percent reduction in dust emissions from Owens Lake with 99 percent projected in the coming years.

Owens Lake Trails

On April 29, 2016, LADWP, along with many stakeholders and agencies in the Owens Valley, dedicated the Owens Lake Trails. A component of the Owens Lake Dust Mitigation Program, the trails will enhance public access, recreation, and wildlife habitat at Owens Lake. The project also provides public education about LADWP's dust control efforts on the lake.

➔ Go to **www.ladwp.com/losangelesaqueduct** to learn more.



Owens Lake Trails

Sea of 96 million shade balls at LA Reservoir

Safety

Water Quality

Ensuring the city's water quality meets the highest Federal and State standards is paramount to LADWP's water operations.

LADWP is investing in major infrastructure projects to meet drinking water regulations, such as the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) and the Stage 2 Disinfectants/Disinfection By-Products Rule (DBP2). LADWP's major efforts to comply with these regulations include addressing its three remaining open reservoirs, enhancing the city's water supply disinfection system with UV treatment, and changing the distribution system disinfectant from chlorine to chloramine. Failure to comply with these drinking water requirements is not an option for LADWP.

➔ Go to **www.ladwp.com/waterquality** to learn more.

Reservoir Projects

LADWP has determined the path forward for bringing the three remaining open reservoirs into compliance with the LT2 water regulation. Headworks East is now online to help replace storage at Silver Lake and Ivanhoe reservoirs, and construction has begun on Headworks West. Elysian and Upper Stone reservoirs will remain in service and receive floating covers. Lower Franklin Reservoir will have its floating cover replaced and Eagle Rock Reservoir has had a new floating cover installed. Los Angeles Reservoir will also remain in service with a new ultraviolet (UV) treatment plant to disinfect water leaving the reservoir, and 96 million shade balls to assist in controlling disinfection byproducts and algae.

Recent Accomplishment

Upper Stone Canyon and Elysian Reservoir Projects

In January 2012, the Board approved the Final Environmental Impact Report for a floating cover on Upper Stone Canyon Reservoir and followed with a similar action in April 2012 for the Elysian Reservoir. After much deliberation, the Board approved the most practical and cost-effective solutions for each reservoir— floating covers which will save the Department over $100 million. Final design for Upper Stone Canyon is anticipated to be completed by April 2016. Final design for Elysian was completed in January 2015 and construction began in October 2015.

Recent Accomplishment

Los Angeles Reservoir Project

A new ultraviolet treatment facility is currently in development to disinfect water leaving the LA Reservoir and satisfy the LT2 water quality regulation with construction expected to begin in 2017. In addition, LADWP completed the deployment of 96 million shade balls on LA Reservoir to help meet the bromate drinking water standard and control algae in the reservoir.

Recent Accomplishment

Ivanhoe and Silver Lake Reservoirs

The Headworks Reservoir Complex, including East and West, will completely replace Ivanhoe and Silver Lake reservoirs' storage capacity.

Headworks East was completed in November 2014, and construction of Headworks West began in July 2015. Completion is expected by May 2018.

Recent Accomplishment

Lower Franklin Reservoir Project

LADWP is moving forward with plans to replace the old floating cover on Lower Franklin Reservoir. Expected to be in construction early 2016, the new cover will satisfy water quality requirements and improve reliability. Construction is also underway inside the reservoir to improve operation and maintenance.

Eagle Rock Reservoir Project

In December 2015, LADWP completed construction of a replacement cover for Eagle Rock Reservoir. The new floating cover, which spans approximately 360,000 square feet, replaced the deteriorated existing cover to comply with California Department of Public Health requirements.

Recent Accomplishment

Citywide Chloramination

In May 2014, LADWP expanded the use of chloramine disinfection to most of our water distribution system to comply with the new DBP. Chloramine is formed by mixing chlorine and ammonia. Both chlorine and chloramine are approved disinfectants for use in drinking water by the United States Environmental Protection Agency and the California Department of Health. Due to the size and complexity of our system, the expansion was conducted in phases. Areas with the highest disinfection byproduct (DBP) levels were converted first. The last phase will be completed in 2017 with the conversion of the Green Meadows and Watts areas. These areas historically have lower DBP levels.

The advantages to the chloramine expansion include:

- Compatibility with purchased water from MWD
- Improving system reliability
- Providing water free of a chlorine taste or smell
- Lower DBP formation
- Longer lasting protection as the water moves through the pipes to your tap, because chloramine is more stable than chlorine

Recent Accomplishment

Grants and Loans

To help fund these large-scale projects, LADWP has been awarded approximately $956.5 million in grants and loans from the Safe Drinking Water State Revolving Fund, including $45 million in grants through the American Recovery and Reinvestment Act, and $14 million in grants from the State Revolving Fund. These awards have helped reduce the potential rate impacts to customers from these projects while improving water quality.

Reliability

Infrastructure Replacement and Upgrade

LADWP maintains a vast array of infrastructure that is critical for reliably delivering high-quality water to Angelenos. With a significant amount of pipe installed at the turn of the century, LADWP is facing challenges in keeping pace with the replacement and upgrade needs of these aging water mains and riveted-steel trunk lines.

The Water System has developed a Water Infrastructure Plan, which utilizes an Asset Management Program to prioritize efforts, develop strategies, and determine the resource needs. However, because more than 27 percent of the city's pipes are over 80 years old, and the average lifespan of an iron water main is 100 years old, infrastructure reliability challenges are imminent. Moving forward, LADWP must take additional actions to accelerate the replacement and upgrade of its aging infrastructure.

Financial Plan

Toward this end, the Water System's financial plan calls for investing over $2.2 billion in the next 10 years for infrastructure reliability. A significant amount of these expenses—about $1 billion—will go toward replacing mainlines that have undergone a thorough assessment and have been prioritized as vulnerabilities within the water distribution system. Additional expenses will be incurred 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 required to deliver water to its customers.

Infrastructure Replacement Goals

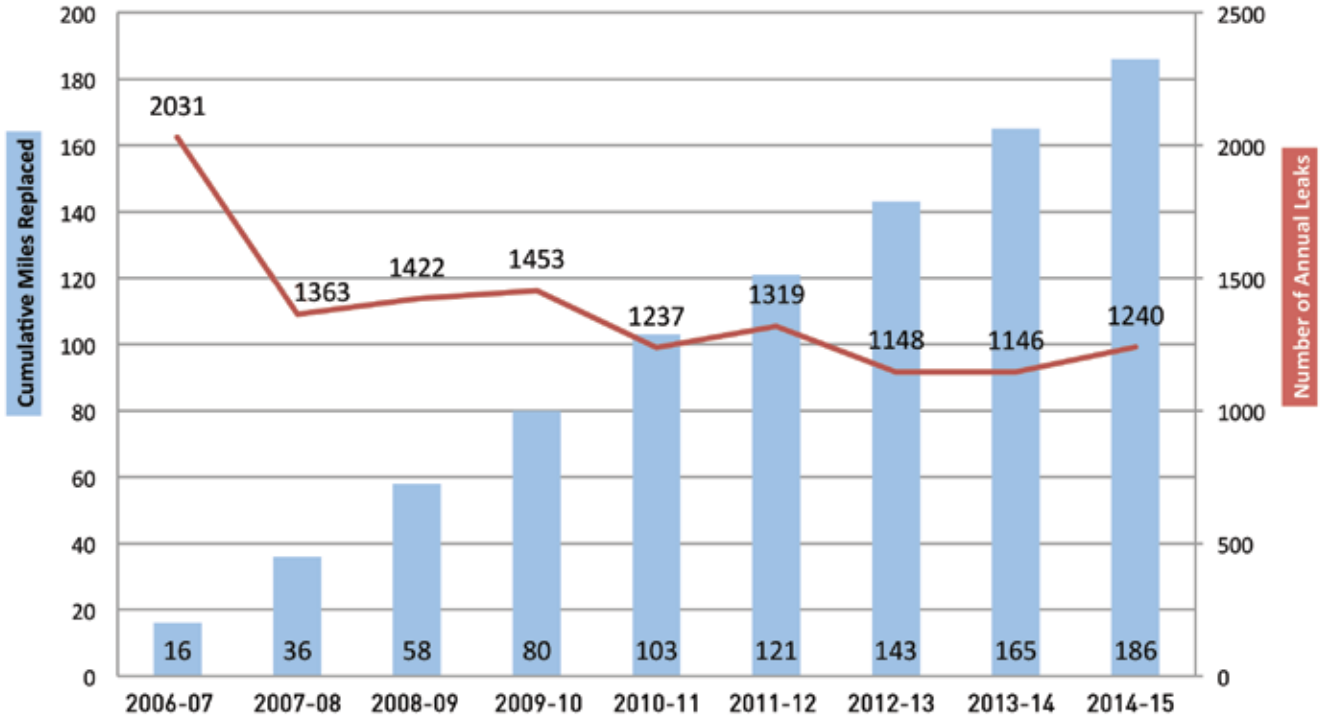
The Water System sets goals for infrastructure that are deemed critical for delivering reliable water supplies. These goals are tracked and reported on a monthly basis.

Infrastructure goals for FY 2015-16 include:

- Mainline Replacement: 150,000 feet
- Small Meter Replacement: 25,000 meters
- Large Valve Replacement: 5 valves
- Corrosion Protection Anode Stations Replacement: 200 stations
- L.A. Aqueduct Concrete Top Replacement: 15,800 feet
- Pressure Regulator Station Retrofit: 4 stations
- Pumps and/or Motor Replacement or Rehabilitation: 12 pumps/motors
- Water Tank Cleaning and Rehabilitation: 6 tanks

Significant challenges exist to replace and upgrade LADWP's infrastructure. Despite these challenges, LADWP maintains a high level of reliability, and its pipeline leak rate is below the national average of 25 leaks per 100 miles of pipeline. Through the Asset Management Program, LADWP is working to prioritize its efforts on infrastructure asset replacement and upgrade to maximize benefits and minimize reliability risks to our customers.

Mainline Replacement Program (Fiscal Year)



Crews work with Earthquake Resistant Pipe

Recent Accomplishment

Earthquake Resistant Pipe Pilot Project

On April 8, 2016, LADWP completed the installation of 6,500 feet of high-tech Earthquake Resistant Ductile Iron Pipe (ERDIP) on streets surrounding Northridge Hospital Medical Facility. The ERDIP installation is part of an LADWP pilot project that adheres to the Mayor's Resilience Plan and is only the third ERDIP project in the United States. The pipe's innovative, segmented design provides flexibility that allows up to 1 percent axial movement and up to 8 degrees rotation to deal with the strains associated with earthquakes, landslides, and temperature changes. Forces exceeding 1 percent of the pipe length cause a locking mechanism to activate to keep pipe joints from pulling apart.

With the completion of the Northridge project, LADWP has installed a total of 12,500 feet of ERDIP pipe throughout Los Angeles, all within the past three years. ERDIP pipe has been installed in the East Valley, West Valley, Harbor, Central, and Western areas of the city. Moving forward, LADWP plans to install an additional 75,000 feet of ERDIP throughout the city. These future projects will target critical facilities such as hospitals, shelters, and schools.

Water Rates and Finance

Approved in March 2016, LADWP's new water rate changes will provide necessary investments to accelerate the pace of replacing aging water infrastructure and protect against drought conditions by expanding local water sources and reducing dependence on imported purchased water.

From 2016 through 2020, a typical residential customer (using an average of 12 HCF, or hundred cubic feet, per month) will see an average increase of just over $3 on their monthly bill, or 4.76 percent per year. For all LADWP customers, including residential, commercial, industrial and governmental customers, the water rate change represents an average annual increase of 5.26 percent over the five years. During the first two billing cycles of the rate change, water rates will be slightly higher than average because of the higher cost of purchased water based an extremely low snowpack in 2015. The higher rates reflect the fact that LADWP has had to purchase significantly more, higher-priced water from the Metropolitan Water District during fiscal year 2015-16 due to the drought. The water cost is expected to be adjusted again on July 1, 2016 to reflect somewhat lower cost of purchased water based on this year's moderately improved snow levels. This will be reflected on customers' bills beginning July 1.

New Water Rate Tiers

The new water rate structure expands the rate tiers from two to four for single-family residential customers. The expanded tiers reflect the higher cost of supplying water to customers who use higher amounts. The tiered rates allow LADWP to recover the costs of providing water to high users while also having the effect of encouraging customers to conserve. The new water rate ordinance also incorporates a mechanism known as "decoupling," which allows for conservation by enabling the utility to recover fixed costs of providing basic water service. If revenues are above the sales target, the excess funds will be returned to customers. If year-end revenues are below the target, they will be recovered through a pass-through adjustment over the next year.

LADWP conducted over 80 community presentations

As with the power rates, the water rate ordinance also includes a pass-through factor to pay for water infrastructure improvements.

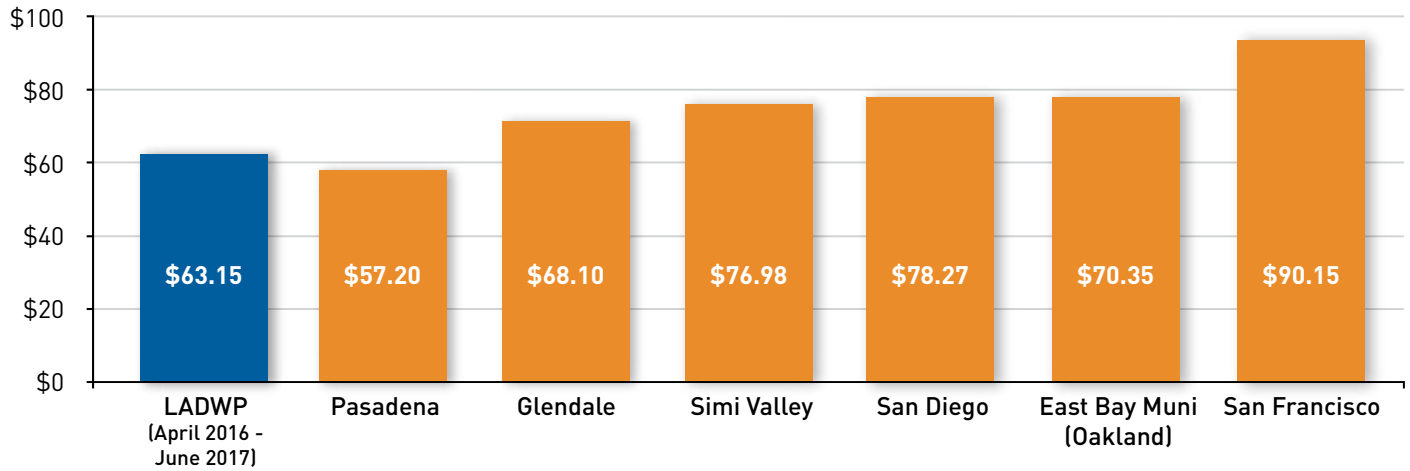
Outreach and Accountability

The water and power rates proposals were jointly presented to the public over six months starting in July 2015. Both the power and water rates include enhanced reporting requirements to improve LADWP's performance, accountability and transparency.

➔ Visit **www.myLADWP.com** to learn more.

Comparison of Typical Residential Monthly Water Bills*

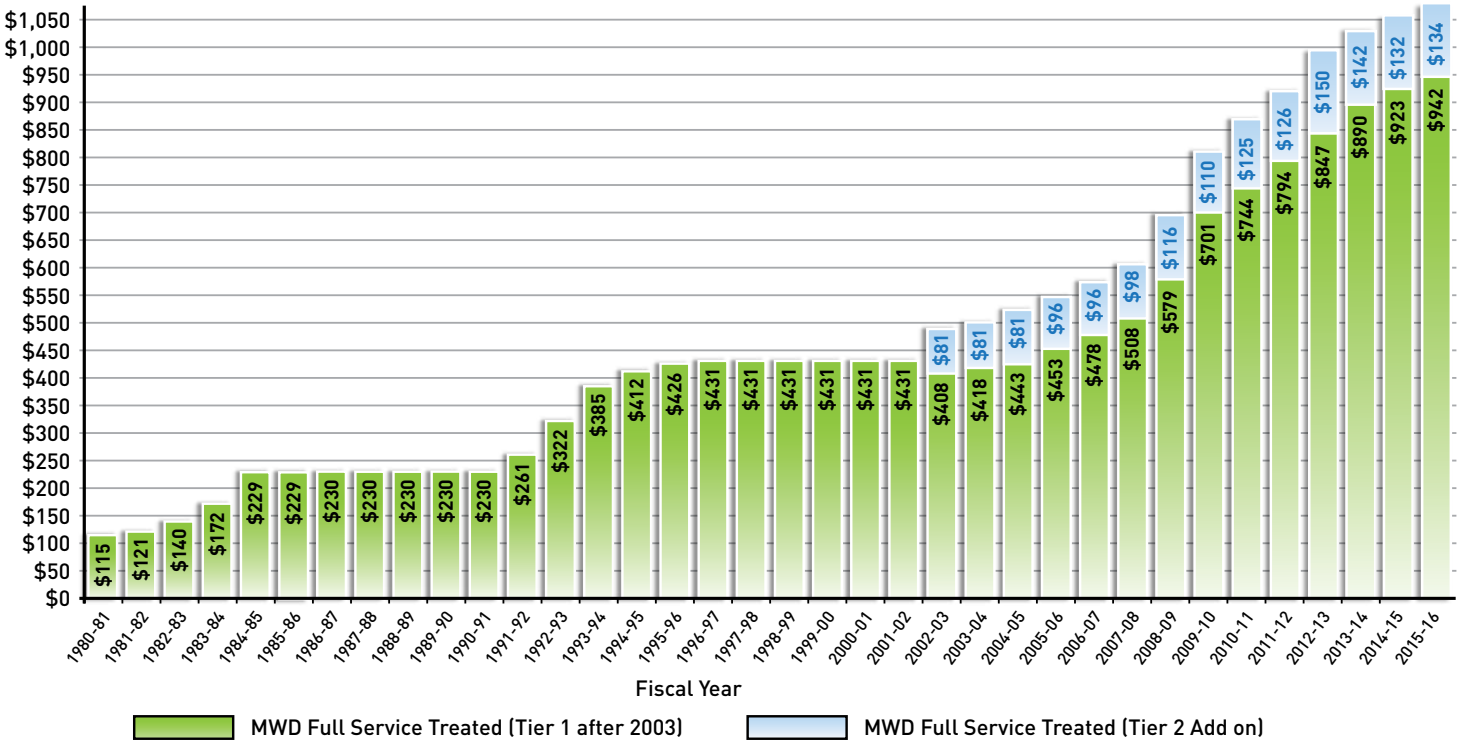
LADWP water rates are among the lowest in the region



*Based on using 12 HCF/month as of March 2016

Escalating Cost of MWD Treated Water

As water supplies become less available, the price of purchased water escalates.



Customer Service

Improving the Customer Experience

The Customer Service Division embodies LADWP's customer vision by valuing the people we serve, providing respectful, responsive, and dependable customer service. Continuing to improve the customer experience for the City of Los Angeles and Owens Valley residents and businesses is a key focus of the entire Department. Customer Service takes pride in personalizing each customer interaction by striving to deliver the highest level of service in all areas.

The Customer Service Division is committed to:

- Maintaining quick turnaround times for all customer requests
- Improving customer-facing business processes across the entire Department to deliver a consistent customer experience each and every time
- Supporting the customer class action settlement terms by achieving customer metrics and correcting all inaccurate billing
- Supporting LADWP programs through our partnerships with other divisions
- Increasing visibility in the community
- Hiring and training knowledgeable and responsive employees to provide them with skills that strengthen and promote high service aptitude
- Engaging in technology improvement efforts to ensure our customers' needs are met

Recent Accomplishment

Developer Liaisons

Established in December 2015, Developer Liaison Services fills a gap by providing direct support to developers in the City of Los Angeles. While responsibilities and roles are still evolving, this new service is staffed by two full-time employees who assist large developers with meter applications, billing, and troubleshooting issues. Developer liaisons work with a variety of groups within LADWP as well as other City departments, such as Electric Service Planning, Water New Business, Department of Building and Safety, Bureau of Engineering, City Planning, and Department of Transportation.

Recent Accomplishment

Paperless Billing

The Paperless Billing initiative benefits our customers and the environment. Customers who enroll in the program receive bill notifications via email, without delay. They can view and pay their bills online, which reduces the use of paper and benefits the environment. It also reduces their paper clutter. About 201,600 customers—12.7 percent of all customers—were enrolled in Paperless Billing by the end of 2015.

Recent Accomplishment

Self-Service Transactions

Customer Service continues to increase the number of self-service transactions that customers can do online, avoiding the need to call or visit in person. LADWP continues to offer various payment options, including credit card payments and web-based payments. Customers can turn on service, turn off service, check the status of their account, set up reminders to pay their bills, and enroll in payment plans. The number of electronic payments increased by 15 percent in 2015 compared to 2014—from 441,471 to 507,604 monthly transactions. Credit card usage increased by 21 percent in 2015 compared to 2014—from 161,230 to 194,626 monthly transactions. Over 50 percent of monthly payments by customers are made electronically.

Recent Accomplishment

Training & Customer Satisfaction

Customer Service developed a centralized training program that focuses on building relationships and trust with customers, by making it easy to do business with LADWP and by having our customers' best interests at heart. Trainees receive initial training and then work—either in the Call Center or Service Centers—for a short trial period. Nearly 1,000 customer service representatives received the training in 2015. Overall, customer satisfaction for both telephone and Customer Service Center ratings significantly increased over the past year, based on call-back surveys conducted by an outside agency.

Recent Accomplishment

Dedicated Teams & Hiring

Recognizing that since many customers have needs that call for special expertise, Customer Service has set up teams to specialize in various Department initiatives, such as water conservation, electric vehicles, solar power and energy efficiency programs. Customer Service has also been hiring new staff to keep up with increased customer needs.

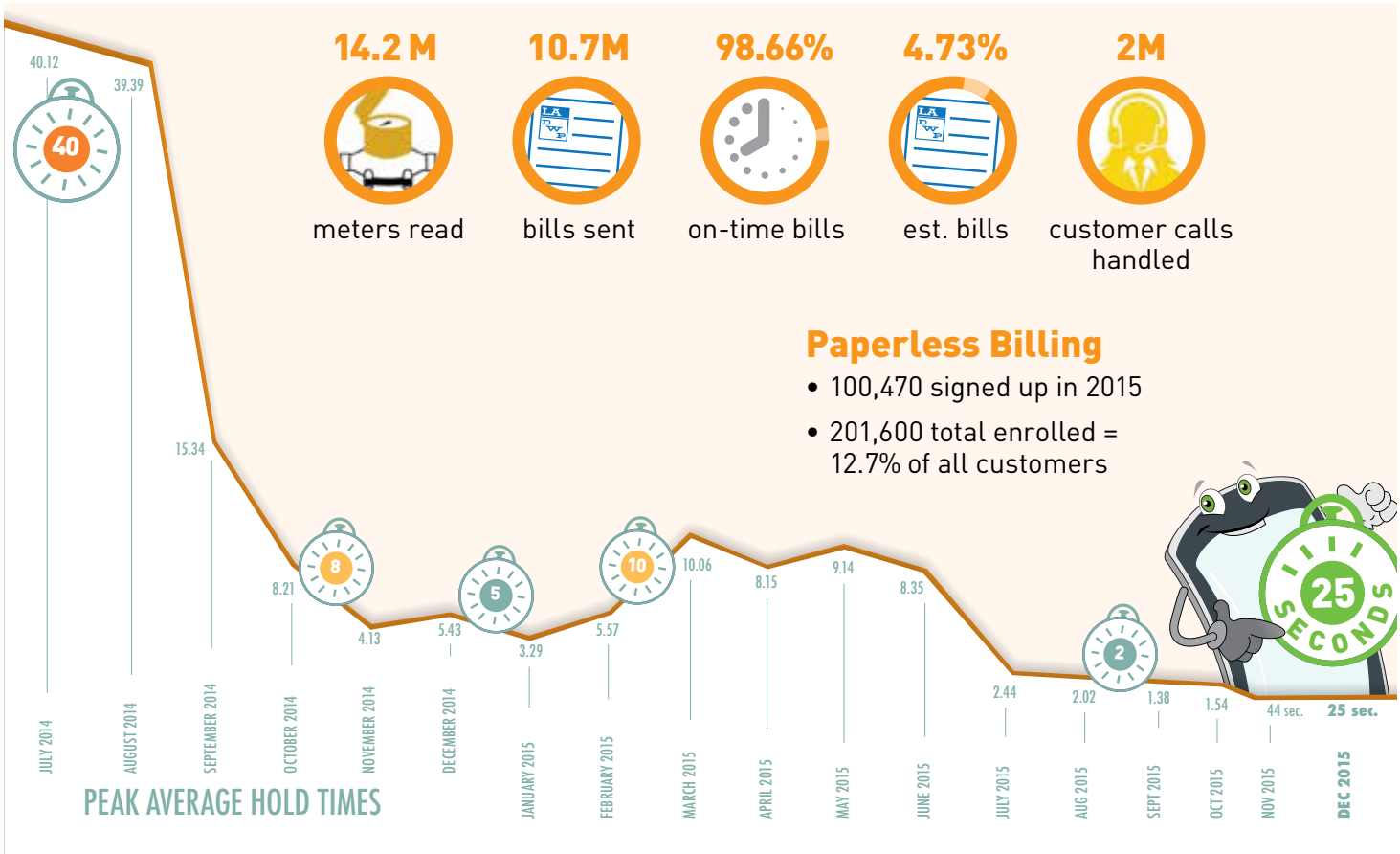
While there is a need to continue increasing staff, Customer Service has been "right-sizing" by filling over 1,000 positions since the launch of the new Customer Information System (CIS) in September 2013. These include backfilling existing vacant positions through transfers as well as hiring 260 new employees.

Customer Service Dashboard

LADWP has recovered from issues from the launch of the new Customer Care and Billing System in 2013. Since then, the Customer Service Division has met and exceeded key billing and performance standards. To foster transparency and keep customers informed of our progress, LADWP posts a weekly Mayor's Dashboard of customer service metrics. The dashboard is available at www.ladwp.com/billinginfo. Go to the box titled "How We're Fixing the Problem," and click the link for "Customer Service Dashboard Archive."

➔ Go to **www.ladwp.com/billinginfo** to learn more.

Customer Service Dashboard - 2015



Corporate Performance

In response to Mayor Eric Garcetti's goal to make City government more efficient and effective, LADWP General Manager Marcie Edwards established a Corporate Performance function in April 2014. The Corporate Performance Office works closely with the key stakeholders and LADWP operating organizations to improve the LADWP's accountability, transparency, and ultimately its performance through enhanced reporting on key performance metrics and benchmarking.

Recent Accomplishment

DWPSTAT

Initiated in August 2014, the DWPSTAT is a management accountability and problem-solving tool to assist in improving operational efficiencies. The Corporate Performance Office, working with various organizations within LADWP, has developed over 52 corporate level key performance indicators (KPIs) and dashboards for the key operations and initiatives at LADWP.

Recent Accomplishment

Benchmarking

At the request of Mayor Garcetti, the Los Angeles City Council and the Office of Public Accountability/Ratepayer Advocate (OPA/RPA), the Corporate Performance Office initiated a three-phase, comprehensive benchmarking study of the Department. Conducted by third-party consultants, LADWP's multi-phase benchmarking effort uses various comparative industry metrics to identify Departmental functions that present opportunities to improve financial and operational performance. LADWP intends to use these metrics as a road map to highlight areas where the Department meets or exceeds industry norms. The metrics also highlight underperforming areas that can be targeted for more in-depth analysis and potential performance improvement.

Completed in 2015, the initial Phase I study focused on LADWP's operating and capital expenditures on a functional level. The results showed that LADWP compares favorably to peer utilities in several significant areas, including rates, water and power reliability, and operation and maintenance costs per customer. The Phase II assessment, now under development, will provide a detailed analysis of LADWP's labor-related costs and contracting levels.

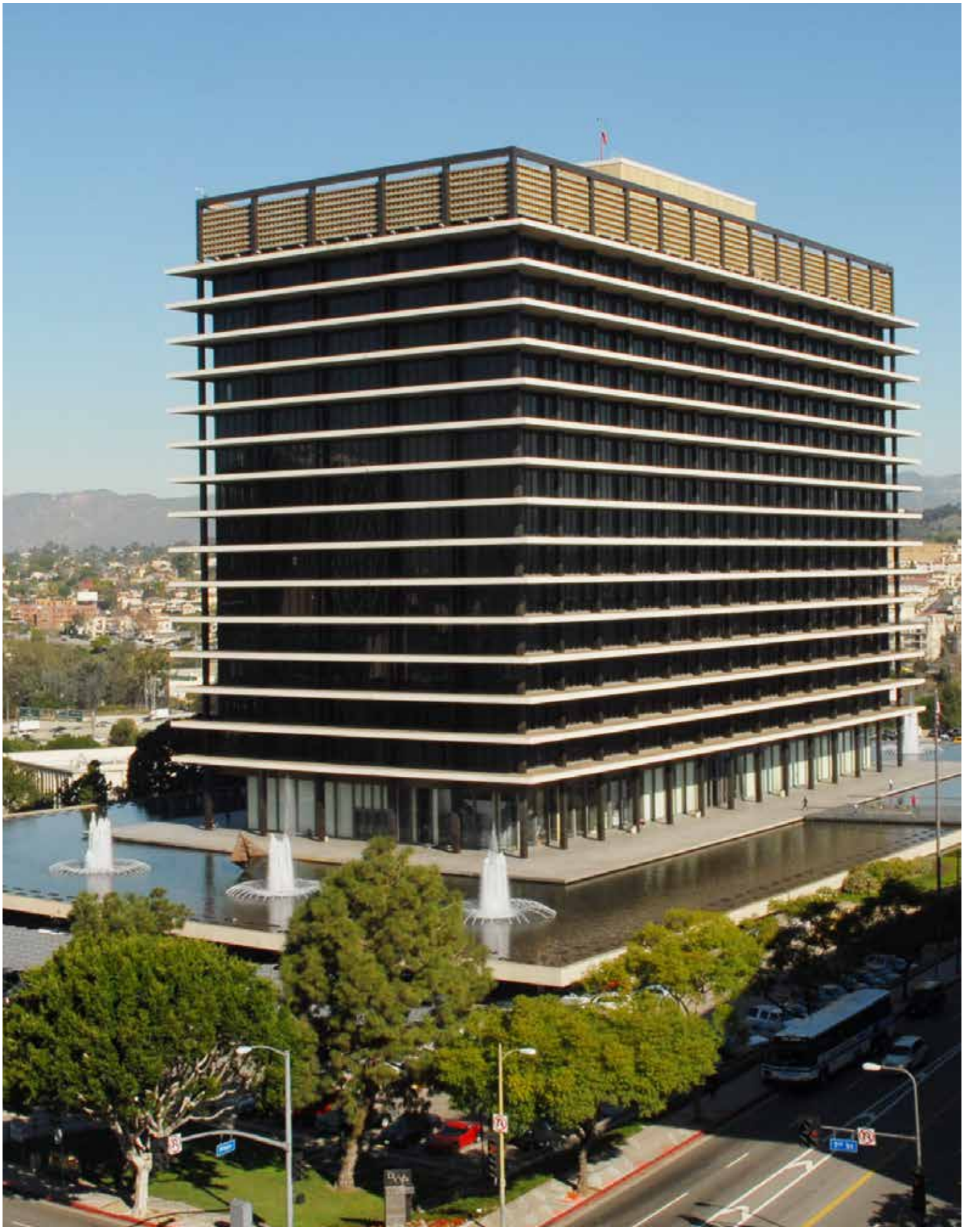
Recent Accomplishment

Industrial, Economic, and Administrative (IEA) Survey

The Los Angeles City Charter requires that the Controller, Mayor and City Council facilitate an Industrial, Economic, and Administrative (IEA) Survey every five years of LADWP to determine if the Department is "operating in the most efficient and economical manner possible." In December 2015, the Controller, in conjunction with the Mayor and City Council, concluded the 2015 IEA Survey of LADWP. The 2015 IEA Survey acknowledges much of the progress that the Department has made, its successes, future plans and detailed recommendations for consideration and action. Under the direction of the General Manager, the Corporate Performance Office will oversee the progress toward implementing the IEA Survey recommendations over the next five years.

Performance-Based Rates

One of the key recommendations from the OPA/RPA and the recently conducted 2015 IEA Survey was for LADWP to incorporate performance metrics and targets in the new Water and Power Rate Ordinances which went into effect April 15, 2016. Aimed at fostering transparency and accountability, performance-based ratemaking will require LADWP to report regularly on specific and well-defined key performance metrics to the OPA, the Board of Water and Power Commissioners, and Energy and Environment Committee. This process will help ensure that LADWP's performance is tracking with the Department's overall operational, policy, financial and strategic goals and mandates.





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