

A ALIGNMENT OF MAYOR’S PRIORITY OUTCOMES TO LADWP WATER SYSTEM INITIATIVES AND INVESTMENTS

On September 22, 2014, the Mayor of the City of Los Angeles issued his Fiscal Year 2015-16 Budget Policy and Goals to the General Managers of all City Departments. The Mayor outlined five “Priority Outcomes¹” that focus on the results that he believes matter most to the residents of Los Angeles. These are:

1. Make Los Angeles the best run big city in America
2. Promote good jobs for Angelenos all across Los Angeles;
3. Create a more sustainable and livable City;
4. Ensure our communities are the safest in the nation;
5. Partner with citizens and civic groups to build a greater City.

The Department’s investments and initiatives outlined in this proposed rate plan were developed with the Mayor’s objectives in mind and strongly align with each Priority Outcome. Figure 1 provides examples of how the Water System will align to each Priority Outcome through the proposed five-year rate action.

¹ See <http://sanpedrocity.org/wp-content/uploads/2014/09/FY15-16-Budget-Policy-Letter.pdf>

Figure 1: Alignment of Mayor’s Priority Outcomes With Department’s Initiatives and Investments

Priority Outcome	LADWP Water Rate Action Alignment
<p>Make Los Angeles the Best Run Big City in America</p>	<p>Live within our means</p> <ul style="list-style-type: none"> • LADWP’s rate action considers the continuation of cost reduction initiatives as well as opportunities for process improvements. The creation of the Corporate Performance group will ensure that process improvements are sustained. • The new rate design builds in adjustment factors that protect LADWP customers from being overcharged, as LADWP will only seek to recover costs that are actually incurred. <p>Provide outstanding customer services to our residents and businesses</p> <ul style="list-style-type: none"> • LADWP has invested many resources into improving customer services; the proposed financial plan and rates continue to support this trend. • LADWP provides a comprehensive portfolio of water conservation programs to both residents and businesses. <ul style="list-style-type: none"> • Deploy innovation and the best technology The Water System seeks to invest in the most cost-effective and innovative technologies that are available in order to provide LA with the best quality water possible. For example, LADWP has pioneered the use of Shade Balls to cover large reservoirs and is installing seismic-resistant water infrastructure where appropriate. <p>Restore pride and excellence in public service</p> <ul style="list-style-type: none"> • The Water System will continue to work with the Ratepayer Advocate (RPA) to increase transparency. Large projects that LADWP has discussed with the RPA include the Owens Lake 2014 Stipulated Judgment, Bay-Delta Issues, and MWD purchased water contracts.

Priority Outcome	LADWP Water Rate Action Alignment
<p>Promote Good Jobs for All Angelenos All Across Los Angeles</p>	<ul style="list-style-type: none"> • LADWP’s Water System currently employs approximately 4,000 citizens of Los Angeles and neighboring areas. When employing contractors, LADWP has a preference for local businesses. • Inductive economic analysis done by the Los Angeles Economic Development Corporation (LAEDC) suggests that Department expenditures for major projects in Los Angeles create jobs and stimulate additional economic output. The LAEDC estimated that, in FY 2011-12, Water System expenditures, totaling \$992 million, supported 12,290 jobs (direct, indirect, and induced) and created an additional economic output of \$2,717 million². If the local characteristics of the current Los Angeles economy remain similar to the assumptions made by the LAEDC, the average annual Water System spending of \$1,463 million per year over the five-year rate action will support approximately 18,000 jobs and induce an annual \$4 billion in additional economic activity and output annually.
<p>Create a More Sustainable and Livable City</p>	<ul style="list-style-type: none"> • Water conservation is a key part of sustainable living and an area in which LADWP has accomplished major goals. Sample water conservation programs include residential rebates for California Friendly Landscapes or water-efficient technologies, as well as commercial services such as efficiency audits and direct install partnerships. • LADWP continues to increase local sustainable water supplies to decrease usage of expensive imported water. • Water quality projects ensure that the community has high quality water. • Infrastructure projects help ensure that pipes, reservoirs, and pumping stations are well-maintained. Less emergency maintenance will be required, decreasing the need for sudden road closures, service disruptions, and other disturbances.
<p>Ensure Our Communities Are the Safest in The Nation</p>	<ul style="list-style-type: none"> • To provide safe drinking water, the Water System will invest in the most cost-effective and innovative technology to ensure compliance in the future. • Availability of water and water security are high priorities for the Water System. The Water System is investing many resources to develop more local sources of supply through conservation, groundwater, stormwater, and recycled water. • The Water System has been working with the Mayor’s office to improve earthquake resiliency as a measure to ensure water supply security. Water System capital projects will be carried out with earthquake-resistant infrastructure when appropriate. • Fire service is an important public safety measure that the Water System provides to ensure that both private and public fire protection systems can be used in emergencies. • The Water System strives to invest in new technologies that reduce health and safety risks. For example, an emergency chlorine dry scrubber replaced a conventional wet scrubber at the North Hollywood Chlorination Station to reduce potential exposure to toxic chlorine gas.

² Exhibit 3-2, page 14. “Los Angeles Department of Water and Power: Supplying Power, Water and Jobs for Los Angeles,” September 2012. Economic and Policy Analysis Group; Los Angeles County Economic Development Corporation.

Priority Outcome	LADWP Water Rate Action Alignment
Partner With Residents and Civic Groups to Build a Greater City	<ul style="list-style-type: none">• Several of the Water System’s investments are joint projects with local and State organizations.• Several stormwater projects are partnerships with local community organizations such as schools, Council Districts, and homeowners’ associations.• LADWP will continue planning and coordination with the Bureau of Street Services of the Department of Public Works when opening streets for infrastructure projects.• LADWP has partnered with the Mono Lake Committee, California Trout, and the California Department of Fish and Wildlife to protect the Mono Basin environment and the four major streams that flow into Mono Lake.

B CUSTOMER REBATE AND SAVINGS PROGRAMS

This appendix provides a list of customer rebate and savings programs offered by the LADWP Water System that will help reduce ratepayer total bills through conservation.

Project Name	Project Description
Commercial/Industrial Rebate Incentive Program	This program is a partnership with the Metropolitan Water District (MWD) to offer rebates for business customers who purchase and install water conservation equipment such as high-efficiency toilets and urinals, weather-based irrigation controllers, cooling tower conductivity controllers and other measures.
Commercial Landscape Incentive Program	This program provides rebates to business customers for turf removal and replacement with California Friendly Landscapes, mulch, and permeable pathways or artificial turf. Customers can get up to \$3.00 per square foot of turf removed.
City Parks Irrigation Efficiency Program	This program provides funding to the Los Angeles Department of Recreation and Parks for upgrading public parks with inefficient irrigation systems, leaks and runoff problems, and includes use of recycled water. City parks are retrofitted with water efficient irrigation systems, sprinkler heads, weather-based irrigation controllers, and planting of California Friendly Landscapes.
LADWP Facility Retrofits	This program retrofits Department-owned facilities with high efficiency plumbing fixtures and converts outdoor areas into California Friendly Landscapes with efficient irrigation systems.
Direct Install Partnerships	This program involves partnerships with LADWP's Power System and Southern California Gas Company to achieve mutual benefits in water, energy, and gas savings. There are four programs to install water conserving fixtures and devices in homes and businesses: Small Business Direct Install Program (SBDI), Home Energy Improvement Program (HEIP), Los Angeles Unified School District Water Conservation Device Replacement Program, and the Multifamily Direct Thermal Savings Program.
Technical Assistance Program (TAP)	LADWP's TAP offers incentives to assist customers implementing custom water conservation projects. TAP incentives are available to commercial, industrial, institutional, and multi-family customers installing pre-approved water conservation measures including equipment, devices, products, fixtures, and technologies of a permanent nature. The financial incentive is calculated at the rate of \$1.75 per 1,000 gallons of water saved over a period of two years (minimum of 150,000 gallon savings required). Proposed projects are first evaluated to ascertain feasibility, cost and savings. Incentives are paid after project installation and verified operation.
Residential Rebate Incentive Program	This program is a partnership with the MWD to offer various rebates for residential customers who purchase and install water conservation equipment. Rebates are offered for various measures such as high-efficiency clothes washers, high-efficiency toilets, weather-based irrigation controllers, and others.

Project Name	Project Description
Residential Landscape Incentive Program	This program provides rebates to residential customers for turf removal and replacement with California Friendly Landscapes, mulch, permeable pathways, and artificial turf. Customers can get up to \$3.75 per square foot of turf removed.
Water Conservation Awareness and Outreach	This program is a multi-channel public education campaign to heighten and maintain customer awareness of the need and importance of efficient water use. This program includes a general public awareness campaign using various market channels, promotion of specific water conservation programs, and school education programs and materials.
Consultant Services for Water Conservation Program Technical Support	Contractors will develop business plans and provide technical support for the implementation of new rebate, technical assistance, educational, and/or other programs identified to assist with meeting the Mayor's Executive Directive 5 water conservation goals. Contractor will also provide technical support to implement the recommendations of the Water Conservation Potential Study, which is currently scheduled to be completed in 2015.
Consultant Services for Outdoor Landscaping Outreach	Contractors will provide training and educational outreach targeting residential and commercial customers, landscaping services providers, and gardening organizations. The outreach will focus on turf removal rebates and the design, construction, operation and maintenance of water-efficient or drip irrigation systems to ensure maximum water-use efficiency while still maintaining the landscape. Outreach on new programs developed through the Water Conservation Potential Study may also be provided. Additional topics may include graywater systems, recycled water use for irrigation, stormwater capture, and blackwater systems.
Consultant Services for Outdoor Landscaping Hands on Workshops	Contractors will provide hands-on workshops for residential customers that train participants on landscaping with California Friendly plants; drip irrigation systems; and on-site stormwater capture options, such as rainbarrels, raingardens, and cisterns. The scope of the workshops may be expanded to include graywater systems, irrigation submeters, recycled water for irrigation uses, and black water systems as those programs are developed further.
Consultant Services for Landscape Architecture Design Support	Contractors will provide design support to LADWP and other City Departments as facilities install more water-efficient landscaping, replacing turf lawn with California Friendly plants and installing drip irrigation systems. The contractor will also provide technical expertise for outreach materials and the new landscaping website; review and evaluate potential code changes; and support future implementation of the Water Conservation Potential Study recommendations, which could include new rebates and educational outreach on new or expanded topics.
Consultant Services for Residential Field Audits	Contractors will provide a Field Audit Program, performing on-site water-use evaluations for residential and commercial customers' properties. The contractor will provide customized water-efficiency recommendations, including information about LADWP rebates and other assistance programs, to help customers eliminate water waste and reduce their potable water use. The program will initially target 2,000 customers.
Consultant Services for City Facilities Field Audits	Contractors will provide a Field Audit Program, performing on-site water-use evaluations for City facilities. The contractors will provide customized water-efficiency recommendations, including information about LADWP rebates and other assistance programs, to help City departments eliminate water waste and reduce their potable water use. The program will initially target 800 City facilities.

Project Name	Project Description
Consultant Services for Water Conservation Home Water Use Reports	The contractor will provide a customer engagement platform for Single-Dwelling Unit Residential customers. The contractor will be tasked to perform water use analysis of participating customers and provide them with bi-monthly personalized reports on their water use to encourage increased water conservation. The contractor will also provide a customized online platform for tracking participant efficiency. The program will initially target 150,000 customers.

C MAJOR INVESTMENTS IN THE WATER SYSTEM

Major investments have been made to improve the LADWP Water System since the previous rate action in the areas of water quality, local supply, infrastructure, and Eastern Sierra regulatory compliance.

C.1 Water Quality

The Water System has met and is on track to meet deadlines to comply with State and Federal drinking water standards, specifically the Long-Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) and the Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 D-DBPR) recently promulgated by the United States Environmental Protection Agency (EPA). LADWP publishes a quarterly Water Quality report on all completed and current projects. Please see Chapter 2 - Appendix D for the most recent update.

Long Term 2 Enhanced Surface Water Treatment Rule¹

This rule includes a requirement that all open treated water distribution reservoirs are either covered, removed from service, or provide re-treated water. The Department has a Compliance Agreement with the California Department of Public Health (CDPH) that has multiple interim deadlines and requires full compliance by 2022. The Department met the April 1, 2009, deadline for the approval of a negotiated Compliance Agreement for the LT2ESWTR Rule with CDPH.

The Stage 2 Disinfectants and Disinfection Byproducts Rule²

On January 4, 2006, the Environmental Protection Agency (EPA) promulgated the Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 D-DBPR Rule) in connection with the 1996 amendments to the Safe Drinking Water Act (the Safe Drinking Water Act Amendments of 1996), which set certain standards for the byproducts produced during water disinfection. The Stage 2 D-DBPR Rule requires compliance with disinfection byproducts standards by April 1, 2014, assuming a two-year extension that was granted for capital projects.

To comply with the Stage 2 D-DBPR Rule, the Department is converting its secondary disinfection from chlorine to chloramine disinfection. The conversion is intended to reduce the levels of disinfection byproducts and requires the construction of ammonization facilities at each

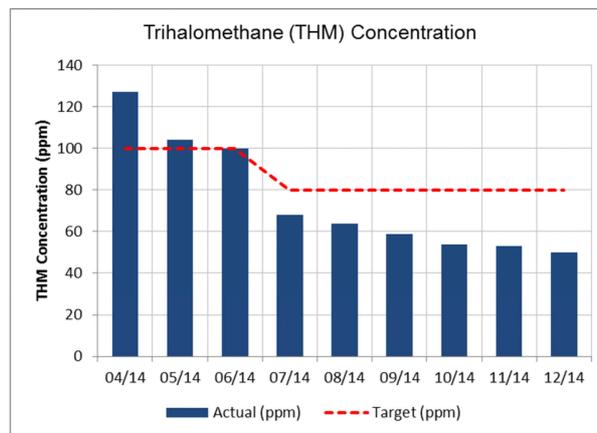
¹ For more information see: <http://water.epa.gov/lawsregs/rulesregs/sdwa/lt2/regulations.cfm>

² For more information see: <https://www.federalregister.gov/articles/2006/01/04/06-3/national-primary-drinking-water-regulations-stage-2-disinfectants-and-disinfection-byproducts-rule>

major chlorination station. The Department is working closely with regulators on the best approach and schedule for a phased conversion to chloramine disinfection.

Investments in water quality projects have been effective. Since April 2014, LADWP has complied with goals to remain below the Maximum Contaminant Level (MCL) of 80 parts per million for total trihalomethane (THM), providing the citizens of Los Angeles with high quality drinking water.

Figure 1: Trihalomethane (THM) Concentration



Reservoir Covers and Decommissioning

To comply with the LT2ESWTR rule, the Department has designed covers to cover open water reservoirs such as the LA, Santa Ynez, or Elysian reservoirs, or is designing new reservoirs to take non-compliant reservoirs out of commission such as Silver Lake and Ivanhoe Reservoirs. Many of these reservoir projects not only require covers but also trunk lines to take reservoirs out of service. Headworks East was placed into operation in December 2014, design on Headworks West is 60% complete.

For the projects that require covers, given the size of these reservoirs, solutions to comply with the EPA rules have required innovative engineering. Each solution was designed to take into account both cost effectiveness and water quality improvement effectiveness. One example of innovative engineering is the use of shade balls, which was a cost-effective temporary solution to cover huge surface areas.

Of the fourteen major reservoirs, eight are actively used for potable distribution and six are out-of-service, although four of these out-of-service are maintained for emergency operation. To protect water quality, five reservoirs are already covered, with plans in progress to cover two more reservoirs.

- Current In-Service Reservoirs – (8) Eagle Rock, Elysian, Lower Franklin No. 2, Green Verdugo, Los Angeles, Van Norman Bypass, Upper Stone Canyon, and Santa Ynez

- Out-of-Service Reservoirs – (6) Ivanhoe, Encino, Upper and Lower Hollywood, Lower Stone Canyon, and Silver Lake
- Future Reservoir – (1) Headworks East/West is currently under construction and will replace Ivanhoe
- Covered Reservoirs – (5) Eagle Rock, Lower Franklin No. 2, Green Verdugo, Van Norman Bypass, Santa Ynez
- Future Covered Reservoirs – (2) Elysian, Upper Stone Canyon

Trunk Line Projects

Trunk line projects are required for reservoir projects to take reservoirs out of commission by redistributing water from existing reservoirs. Since 2000, LADWP has completed approximately 264,000 feet of trunk line projects and has assessed another 34 projects to determine replacement priority.

Disinfection of the Stone Hollywood Trunk Line has been completed using an innovative “slug method”. The “slug method” was able to save approximately 4 million gallons of system water, and reduced the operation duration by at least 30 days.

Chloramination

LADWP has spent the past ten years converting its water supply from chlorine to chloramine disinfection to reduce disinfection byproducts in compliance with the Stage 2 D-DBPR Rule. Both chlorine and chloramines are effective killers of bacteria and other microorganisms, but chloramines form less byproducts and do not have a chlorine odor.

Since May 2014, chloraminated water has been served throughout the LADWP water system. Construction is complete on chloramination stations at the Van Norman Station (1 and 2), Manhattan Station, Tujunga Wells, North Hollywood pump station, Green Verdugo Reservoir, Stone Canyon filtration plant, and Mission Wells pump station. The 99th Street station is in progress and is expected to be complete in FY 2017-18.

River Supply Conduit (RSC) Projects

RSCs are major transmission pipelines built in the 1940's. RSC improvement is necessary for improving water pressure as required by California Department of Public Health regulations. It will also allow for greater operational flexibility to compensate for loss of water storage within the distribution system; for example, RSC improvement would assist in facilitating planned changes to the method of disinfection. Approximately 30,000 linear feet of the RSC that runs between North Hollywood pump station and the Headworks Spreading Grounds site, located near Forest Lawn Drive just west of Victory Boulevard, will be replaced with a larger diameter steel pipe.

Units 1B, 2B, 3 and 4 have been completed. Units 5, 6, and 7 are scheduled to be completed within the next five years.

Ultra Violet Light for Nitrification Control

Ultra Violet (UV) light is known as an effective disinfectant. LADWP researched and determined that a specific wavelength of UV light can inhibit the growth of bacteria that cause nitrification. Pilot and full-scale tests were performed and the results show that UV light is an effective and practical treatment alternative to repeated chlorination. LADWP is developing a schedule for installation of UV lights in tanks based on frequency of nitrification, operating needs, and roof conditions. Design of the LA Reservoir Filtration Plant is complete, and construction advertisements will begin in June 2015.

Sanitary Survey

A major program component to providing high quality drinking water is source protection. The LADWP has conducted watershed sanitary surveys since 1995 in the Owens River/Mono Basin watershed of the Los Angeles Aqueduct (LAA). The survey assesses the potential sources of contamination in the watershed and recommends improvements to the source water protection program.

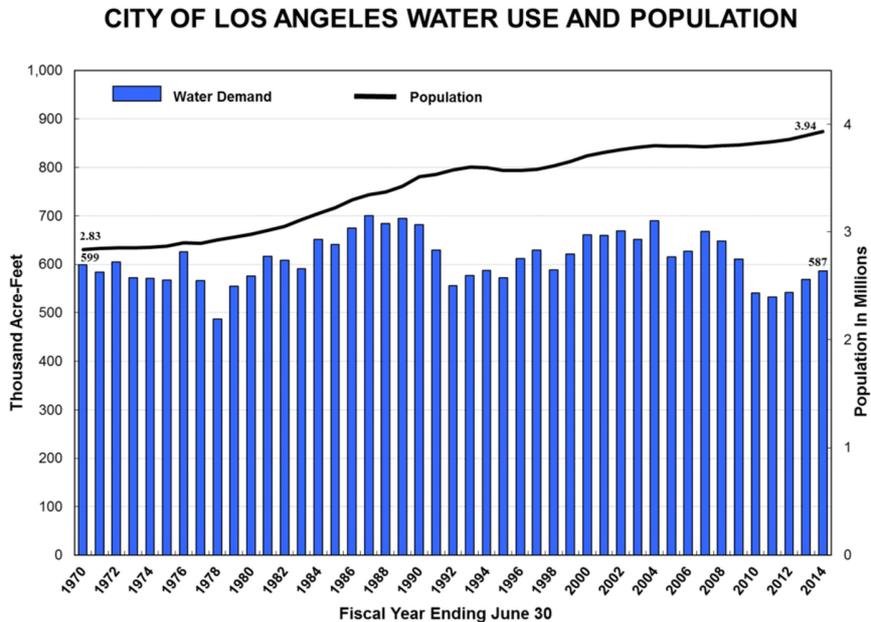
C.2 Local Water Supply

In order to reduce reliance on purchased water expenses and mitigate volatility of available water during dry years, the Department has made significant investments to develop local water supplies. The three main components of local supply programs are conservation, recycled water, and stormwater recapture.

Conservation

The Department takes great pride in the fact that despite a growing population in Los Angeles, water conservation efforts have kept water usage relatively stable. During FY 2014-15, water use was below 1970 levels despite significant population growth as shown in Figure 2.

Figure 2: Water Demand and Los Angeles Population 1970-2014³



The Department and its customers have been very successful in reducing water usage through conservation programs supported by a volumetric-based rate structure. In part, this trend can be attributed to the implementation of shortage year rates⁴. From June 2009 to August 2014, shortage year rates have been applied, reducing total water usage by 16.4%. The reductions in consumption for specific customer classes during that time period are shown in Figure 3.

Figure 3: Conservation by Customer Class (June 2009-August 2014)

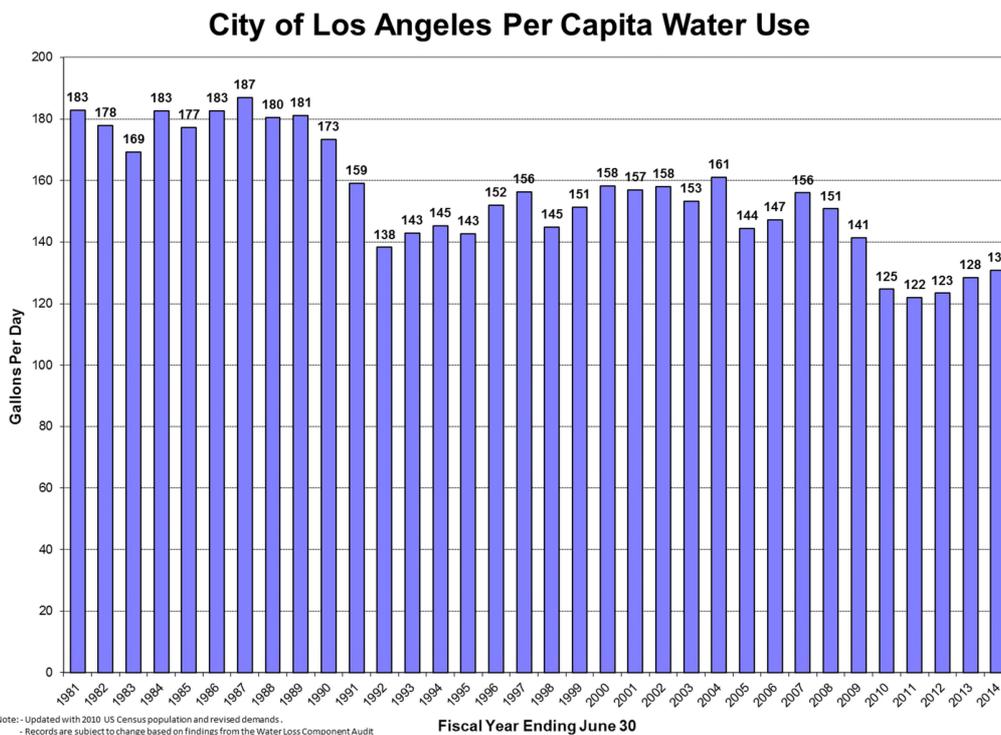
	Cumulative Conservation 6/09-8/14
Single-Dwelling Unit Residential	-20.8%
Multi-Dwelling Unit Residential	-11.1%
Commercial	-13.5%
Industrial	-19.2%
Governmental	-17.1%
Total Water Usage	-16.4%

³ Population was updated with 2010 US Census data. Records are subject to change on findings from the Water Loss Component Audit.

⁴ Under shortage year rates, tier 1 water allocation, which is the standard allocation every customer gets per billing cycle, is reduced by 15%. A residential customer’s allocation is currently based on the number of family members, temperature zone and lot size.

This trend is also apparent in Figure 4, which shows the per capita water consumption in LA from 1980 to 2014.

Figure 4: City of Los Angeles Per Capita Water Use



To help continue conservation efforts, LADWP’s proposed rate structure discussed in Chapter 5 proposes to make allotments similar to the current shortage year rates permanent.

Water Loss Audit

LADWP completed its first in-depth Water Loss Audit and Component Analysis Project in the Fall of 2013⁵. The audit examined the efficiency of the Water System by auditing losses in the distribution system for FY 2010-11.

The report found that LADWP’s Water System does not have a significant volume of real losses⁶ (3.5%), reflecting a well-performing system. LADWP’s Infrastructure Leakage Index (ILI) was determined to be an impressive 1.26 for FY 2010-11. However, LADWP will act on the report’s

⁵ The executive summary for this report can be found at: https://www.ladwp.com/cs/idcplg?IdcService=GET_FILE&dDocName=OPLADWPCCB402320&RevisionSelectionMethod=LatestReleased

⁶ “Real losses” are losses such as leaks and theft. They are in contrast to “apparent losses,” that include meter inaccuracies and billing errors.

additional recommendations to improve infrastructure and reliability, as many assets are reaching the end of their useful life and preventative maintenance and asset replacement is more cost effective than emergency maintenance. For a complete list of the audit findings, refer to Chapter 2 - Appendix E.

In October 2014, LADWP formed its Water Loss Task Force (Task Force) to implement the audit recommendations. The Task Force will assess the findings from the audit, prioritize recommendations, and execute action plans to further decrease water loss and improve LADWP's Water System performance.

Recycled Water

As early as 1960, the City recognized the potential for water reuse and invested in infrastructure that processed water to tertiary quality, a high treatment standard for wastewater which meets Federal and State standards for non-potable water uses. These system enhancements paved the way for the City to expand recycled water projects to supplement local and imported water supplies. Irrigation and industrial use of recycled water are collectively called "Purple Pipe Projects," in reference to the color of the pipe designating recycled water.

In 2012, the Department published its Recycled Water Master Plan Report to identify ways to further utilize recycled water in the City to meet the Urban Water Management Plan goals of increasing recycled water use Citywide to approximately 59,000 acre-feet per year (AFY) by 2035.

Recycled water supply increased by 34% from 7,480 AFY in FY 2012-13 to 10,050 AFY in FY 2013-14, as a result of the Terminal Island Treatment Plant coming back online. In FY 2013-14, the Department installed 10,314 feet of Purple Pipe projects, bringing the total installed pipeline to 296,650 feet (56 miles).

Groundwater

The Department is investing in treatment facilities and projects to recharge local basins to develop local supply. LADWP completed construction of 26 groundwater monitoring wells in various areas of the easterly portion of the San Fernando Valley. These new wells, along with a network of more than 70 existing wells, are being used to establish the basin's groundwater quality and develop a complex of comprehensive groundwater remediation facilities for removing contamination from the City's major well fields in the San Fernando Basin.

LADWP has completed a Groundwater System Improvement Study (GSIS) that will outline how to remove contamination from the groundwater to grow supply and for the betterment of the environment. LADWP will review the findings with the California Department of Public Health (CDPH) and will work with CDPH to gain approval to start the design and permitting, and begin construction on two major groundwater treatment facilities. These facilities will be designed to remove contamination from the local groundwater to protect the environment and the public.

In 2014, LADWP increased the City’s water rights in Central Basin through the projects outlined in Figure 5:

Figure 5: New Groundwater Rights Acquisitions

Date	Description	AFY	Payback Period	Return on Investment
June 2014	LADWP successfully bid on Central Basin water rights in a public auction and paid \$460,000 to the Central Basin Municipal Water District.	46	24 years	9%
December 2014	LADWP also completed a private transaction, paying \$15 million to Aqua Capital Management for water rights.	1,500	15 years	10%

The water rights will be owned by the City of Los Angeles in perpetuity, thereby reducing the City’s reliance on purchased imported water supplies.

Stormwater Capture

Stormwater capture is an important factor of the LADWP’s overall plan to enhance the local water supply. The principle involves capturing rainfall and runoff from roads, upstream national forests and open spaces, and allowing the water to percolate into the groundwater basin in the San Fernando Valley for future use.

Completed Centralized Projects

The Department has implemented centralized projects that have increased the amount of stormwater captured by an average of 10,600 AFY. Figure 6 below provides a sample of recently implemented centralized stormwater capture projects:

Figure 6: Completed Centralized Stormwater Projects

Project Name	Date Completed	Recharge (AFY)	Description
Sheldon-Arleta Gas Management System	2009	4,000	Installed a methane gas abatement system mitigating methane migration during groundwater recharge operations at Tujunga Spreading Grounds.
Big Tujunga San Fernando Basin Groundwater Enhancement Project	2012	4,500	Retrofitted the Big Tujunga Dam to meet State seismic and spillway requirements and increased the reservoir’s storage capacity.
Hansen Spreading Grounds Upgrade	2013	2,100	Combined and deepened the spreading basins; upgraded the intake structure to increase recharge capacity.

Completed Distributed Projects

Distributed projects already implemented by LADWP have increased the amount of stormwater that could potentially be captured by an average of 254 AFY. Figure 7 is a sample of recently implemented distributed projects:

Figure 7: Completed Stormwater Distributed Projects

Project Name	Date Completed	Recharge (AFY)	Description
Sun Valley Park	2013	30	Installed stormwater pretreatment system, infiltration gallery, and retention system.
Garvanza Park	2012	51	Installed a stormwater pretreatment system, infiltration gallery, and retention system.
Elmer Avenue Neighborhood Green Street/Elmer Paseo Green Alley	2011/2013	41	Installed stormwater underground retention infiltration system under the street, vegetated swales and rain gardens in the parkway and private property.
North Hollywood Alley Retrofit BMP Demo	2013	29	Retrofitted four alleys with pervious surfaces to facilitate stormwater infiltration.
Glenoaks-Sunland	2013	28	Constructed dry wells and parkway infiltration swales along a portion of sidewalks which currently have no storm drains.
Woodman Avenue Median	2014	55	Replaced an existing concrete median with vegetated swales and an underground retention system for infiltration.
Hollywood/Los Angeles Beautification	Ongoing	20	Joint project between LA Department of Public Works, Bureau of Street Services and Bureau of Sanitation, Sun Valley Beautiful Committee, Council District 6, and the LAUSD that will involve installing sidewalk filtration, rain barrels, rainwater diversion, and tree well capture.

C.3 Infrastructure

In the context of the Water System, the term infrastructure refers to aqueducts, reservoirs, tanks, pumping stations, regulator stations, distribution mainlines, trunk lines, and hydrants.

Most major water systems in the United States are facing aging infrastructure problems in the coming years. It is estimated that during the years 2009 through 2028, local governments in the United States will spend anywhere from \$2.5 to \$4.8 trillion dollars on water and wastewater infrastructure⁷.

⁷ *Trends in Local Government Expenditures on Public Water and Wastewater Services and Infrastructure*. For full report: <http://www.usmayors.org/publications/201002-mwc-trends.pdf>

The City of Los Angeles’ water system was largely constructed between 1920 and 1970; therefore, much of the water infrastructure is approaching its useful service life. LADWP has strategically utilized currently available funding to maintain infrastructure reliability.

Mainline Replacements

From FY 2009-10 through FY 2013-14, the Department replaced 540,000 feet of mainline. This investment has decreased the number of blowouts and leaks.

Los Angeles Aqueduct Replacement

The LAA requires rehabilitation of pipelines’ internal coating, external coating, structural support and cathodic protection system, as well as removal of decaying roofs on the conduit portion. LADWP has been replacing sections of the LAA cover over many years; the remaining 16,000 feet is being replaced this year.

Seismic Retrofits

LADWP has completed the Terminal Hill Tunnel and Shaft Project to mitigate seismic hazards. In September of 2014, the Water System completed a study in conjunction with the Mayor’s Office regarding the Water System’s seismic resiliency and sustainability, and created a program that will continuously mitigate seismic risks. The Department will focus seismic mitigation projects on sites that are community assets and have been deemed critical to the function of the entire water system in the event of another major earthquake.

Construction has already begun on installation of 6,500 feet of high-tech Earthquake Resistant Ductile Iron Pipe (ERDIP) on streets surrounding the Northridge Hospital Medical Facility.

Reduced Regulator Station Call Outs

In September 2003, LADWP commenced a retrofit program for regulator stations, as station call-outs (failures in which Department personnel must attend to the station outside of regularly scheduled maintenance) were averaging over 200 a year. This retrofit program has been a success, reducing call-outs to an average of less than ten per year, as shown in Figure 8. To date, approximately 200 stations and tank altitude valves have gone through complete retrofitting, which involves replacing everything in the vaults, gate valves, regulator valves, etc.

Figure 8: Regulator Station Failures

Calendar Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of Call Outs	227	202	134	126	65	58	38	13	13	10 or less	10 or less	10 or less	10 or less

LADWP will continue the routine maintenance program as well as the retrofit program. With over 500 regulator stations and tank altitude valves and more to come, the retrofit program will be an ongoing cycle.

C.4 Eastern Sierra Environmental Commitments

Dust Mitigation

The Department is continuing dust mitigation efforts at Owens Lake to comply with agreements with the Great Basin Unified Air Pollution Control District (GBUAPCD or the District).

Since November 2003, the Department has spent more than a billion dollars to mitigate dust at Owens Lake. This number reflects the costs of construction, O&M, and the value of water diverted to Owens Lake for dust mitigation instead of delivery to Los Angeles for drinking water supply. The Department has been allocating up to 95,000 AFY of drinking water each year for this practice. As a result of past efforts, 90% of the dust on Owens Lake is now controlled.

In October of 2012, LADWP completed Phase 8 of the Owens Lake Dust Mitigation project and Phases 9 and 10 will be completed by the end of 2017.

Owens Lake December 2014 Stipulated Judgment

In November 2014, LADWP and the GBUAPCD reached an agreement regarding the remainder of dust mitigation measures as well as dust mitigation methods. In this agreement, which was subsequently approved in a December 2014 stipulated judgment, LADWP will mitigate a maximum of 53.4 square miles and can replace shallow flooding methods with alternative dust mitigation techniques such as tillage (physical contouring and maintenance). Upon completion, LADWP will be in full compliance with dust mitigation requirements.

This agreement benefits ratepayers, as LADWP will no longer be subjected to additional litigation regarding areas of dust mitigation. In addition, the use of new, low-water use dust mitigation methods is likely to decrease the amount of water for dust suppression.

Mono Basin Agreement

In August 2013, the LADWP Board approved an agreement among LADWP, the Mono Lake Committee, California Trout, and the California Department of Fish and Wildlife to protect the Mono Basin environment and the four major streams that flow into Mono Lake. The agreement has conditions that will be in LADWP's Water Diversion License. LADWP remains committed to the Mono Basin environment through the conditions of the agreement and its Water Diversion License. Among such conditions are the following:

- LADWP will construct modifications to the spillway at Grant Lake Dam, which will allow higher water flows-assisting the movement of sediment, creating deep pools for trout, and improving stream habitat quality. Design is 30% complete on a modification to the Great Lake Reservoir spillway that will include an adjustable weir, allowing water to be discharged from the reservoir to Lower Rush Creek, restoring the eco-system in Rush Creek.
- The annual supply of water to Los Angeles from the Mono Basin will be determined by pre-existing rules.
- LADWP will fund a team, governed by all four partners, which will oversee continuous scientific study of Mono Lake and Mono Basin stream conditions.

D QUARTERLY STATUS REPORT ON WATER QUALITY REGULATORY COMPLIANCE PROJECTS

This appendix provides the Quarterly Status Report on Water Quality Regulatory Compliance Projects dated January 12, 2015 presented to the Board of Water and Power Commissioners.



Los Angeles
Department of
Water & Power

RESOLUTION NO. _____

INFORMATIONAL BOARD LETTER APPROVAL

A handwritten signature in black ink, appearing to read 'Martin L. Adams', written over a horizontal line.

MARTIN L. ADAMS
Senior Assistant General Manager
Water System

A handwritten signature in black ink, appearing to read 'Marcie L. Edwards', written over a horizontal line.

MARCIE L. EDWARDS
General Manager

DATE: January 12, 2015

SUBJECT: Quarterly Status Report on Water Quality Regulatory Compliance
Projects – Second Quarter for October 1 to December 31, 2014

Water Quality Regulations Update

Water System continues to plan and execute projects to comply with two regulations promulgated in December 2005 by the United States Environmental Protection Agency (EPA): Long Term 2 Enhanced Surface Water Treatment Rule (Enhanced Rule), and Stage 2 Disinfectants and Disinfection Byproducts Rule (Stage 2 Rule). LADWP met the April 1, 2009, deadline for the approval of a negotiated Compliance Agreement for Enhanced Rule with the State Water Resources Control Board, Division of Drinking Water (DDW), formerly the California Department of Public Health (CDPH). This agreement identifies a final date of December 2020, to bring the now four remaining open distribution reservoirs into compliance with Enhanced Rule, and includes several interim milestones and dates that are enforceable and must be adhered to. Stage 2 Rule requires compliance with disinfection byproduct standards by April 1, 2012. A two-year extension was granted by EPA and DDW to Water System for construction of capital facilities to reduce disinfection byproducts. The new facilities, necessary to convert from chlorine to a chloramine residual disinfectant, were completed before April 1, 2014, in compliance with the extension. Use of chloramines will reduce the disinfection byproducts and enable LADWP to comply with new standards.

Compliance Strategy for Drinking Water Regulations

Water System's compliance plan is based on:

- a. Covering, removing from service, or re-treating water in the four remaining open reservoirs in the water distribution system.
- b. Switching the water distribution system disinfectant from chlorine to chloramines.

There are four remaining reservoirs that need to be addressed: Ivanhoe, Elysian, Upper Stone Canyon, and Los Angeles (LA). The fifth reservoir, Santa Ynez, was placed back in service with a floating cover in June 2011. The sixth reservoir, Silver Lake, was removed from service in December 2013. The current plan is to remove Elysian and Upper Stone Canyon Reservoirs from service to construct floating covers by August 2015 and January 2017, respectively; and have ultraviolet (UV) treatment operational for LA Reservoir by December 2020. A six-month time extension, from November 28, 2014, to May 28, 2015, to remove Ivanhoe Reservoir from service was approved by DDW on November 19, 2014. The time extension is to provide Water Operations with a longer duration to safely integrate significant infrastructure changes made to the existing distribution system due to completion and commissioning of the new Headworks West Reservoir. Water Operations is scheduled to take Ivanhoe Reservoir out of service in January 2015.

Removing reservoirs from service is an important milestone because it ensures water is no longer served from a reservoir until required improvements are completed. The attached schedule of Water Quality Improvement Projects (Projects) needed for Enhanced Rule Regulatory Compliance (Attachment 1) shows the most recent timeline for completing projects necessary for Enhanced Rule compliance. In addition, Projects are differentiated by crosshatching to indicate those needed for reducing the public health vulnerability of an open body of drinking water (i.e., taking open reservoirs out of service), and other projects that will return the City of Los Angeles (City) to its original level of operational reliability after all necessary changes.

Both types of projects are equally important for regulatory compliance. Attachment 2 shows the projects and timelines needed for Stage 2 Rule compliance. Attachment 3 is a Summary of Project Milestones for Compliance with Enhanced Rule.

Conversion of the water distribution system to chloramines was completed the week of May 5, 2014. LA Reservoir is being covered with shade balls and will stay on a reduced dosage of chlorine. The water disinfectant is being converted to chloramines upon exiting the reservoir. Water System has also finished the construction of five ammoniation facilities which are used to produce chloramines. One station at the 99th Street Wells location is in design, and another at the Mission Wells location will be postponed until new production wells are built. Current estimated total cost for complying with the above two regulations is over \$1.4 billion.

Water Quality Improvement Program Funding

Water System continues to actively pursue funding through State Water Resources Control Board, Division of Financial Assistance (DFA), formerly CDPH, for the Water Quality Improvement Program, largely in the form of low to zero-interest loans from the State of California's Safe Drinking Water State Revolving Fund (SDWSRF).

SDWSRF program goals reflect both federal and state legislative intent to provide funding to correct infrastructure and drinking-water-related deficiencies based upon a

prioritized funding system. This funding system utilizes a comprehensive, multi-year Project Priority List in which certain projects receive higher funding priority than other eligible projects. Higher priority is assigned to public water system projects addressing public health risks; public water system projects needed to comply with the Federal Safe Drinking Water Act; and projects assisting public water systems most in need on a per-household affordability basis. SDWSRF funding has supported critical water quality improvement projects that are required to bring LADWP into compliance with federal drinking water regulations, specifically Enhanced Rule and Stage 2 Rule.

To date, LADWP has been awarded a total of \$848,113,152 from SDWSRF as follows:

Funding Type	Total Award to Date
American Recovery and Reinvestment Act 100 Percent Principal Forgiveness	\$ 45,000,000
Grants	\$ 14,000,000
Low-Interest Loans	\$ 272,907,164
Zero-Interest Loans – Construction	\$ 514,705,988
Zero-Interest Loans – Planning	\$ 1,500,000
TOTAL	\$ 848,113,152

Attachment 4 is a detailed list of Water System’s SDWSRF funding agreements.

Current Status of Water Quality Regulatory Compliance Projects

Of the 23 capital projects needed for compliance with the new regulations, 13 are completed, 3 are in construction, 3 are in procurement, and 4 are in design.

Water System continues to meet with EPA and DDW to ensure its plan will successfully comply with water quality regulations. A key component of the compliance plan is securing the necessary engineering and construction contracts in a timely manner.

In addition, Water System staff continues to work closely with DDW to meet the administrative and financial requirements of the SDWSRF program.

Completed Projects

Project Name	Date Completed
Tujunga Wells Ammoniation Station	March 2009
North Hollywood Ammoniation Station	August 2010
Santa Ynez Water Quality Improvement Project - Reservoir In-Service	June 2011
River Supply Conduit (RSC) Improvement - Lower Reach, Unit 3	February 2012
Van Norman Chloramination Stations No. 1 and No. 2	February 2012
Metropolitan Water District LA-29 Connection	April 2012
City Trunk Line - South, Unit 2	May 2012

Project Name (continued)	Date Completed
First Street Trunk Line	March 2013
RSC Improvement – Lower Reach, Unit 4	August 2013
North Hollywood Chlorination Stations	November 2013
Manhattan Wells Ammoniation Station	January 2014
RSC Improvement – Lower Reach, Unit 1B	March 2014
LA Aqueduct Filtration Plant UV Disinfection Facility (Dr. Pankaj Parekh Ultraviolet Disinfection Facility)	March 2014

Project Status

- RSC Improvement - Upper Reach, Units 5 and 6
 - Design completed November 2013
 - Construction contract awarded August 9, 2014
 - Notice to Proceed issued December 2, 2014
 - Construction start scheduled for March 2015
- RSC Improvement - Upper Reach, Unit 7
 - Design 99 percent complete
 - Real Estate appraisals and property acquisition on-going
 - Construction start scheduled for December 2016
- Silver Lake Bypass Line and Regulator Station
 - Design completed March 2014
 - Project advertised April 15, 2014
 - Bidding closed October 2, 2014
 - Contract awarded November 18, 2014
 - Notice to Proceed anticipated February 2015
 - Construction start scheduled for summer 2015
- Headworks Reservoir
 - Headworks East Reservoir placed into service December 3, 2014
 - Headworks West Reservoir design 60 percent complete; Geotechnical analysis is on-going
- RSC Improvement - Upper Reach, Unit 1A Trunk Line
 - RSC Improvement Unit 1A was separated into two projects; 1A East and 1A West
 - RSC Improvement Unit 1A East placed into service December 3, 2014

- Construction start for RSC Improvement 1A West is scheduled for July 2, 2018
- Elysian Reservoir
 - Final Environmental Impact Report (EIR) released September 9, 2011
 - Board approved floating cover alternative April 17, 2012
 - Final Planning completed April 2013
 - Design 100 percent complete
 - Construction documents advertised December 29, 2014
 - Construction start scheduled for October 2015
- Upper Stone Canyon Reservoir
 - Final EIR released January 10, 2012
 - Board approved floating cover alternative February 7, 2012
 - Final Planning completed August 2013
 - Design start October 1, 2014
 - Design 30 percent complete anticipated March 2015
- LA Reservoir Bull Creek Extension
 - Mitigated Negative Declaration completed June 2012
 - Design completed December 2013
 - Construction performed by Power Construction and Maintenance (PCM)
 - Phase I hillside grading complete
 - Phase II realigning the main channel and diversion channel completion anticipated June 2015
 - Phase III widening the storm water conveyance channel, constructing a new overflow, and modifying the Lower San Fernando Dam spillway construction start June 2014
 - Construction completion anticipated January 2017
- 99th Street Wells Chloramination Station
 - Final Planning completed July 2011
 - Design 90 percent complete anticipated January 2015
 - Additional environmental documents being prepared for Board review February 2015
 - Continue project information outreach with Council District, Neighborhood Council, and the Los Angeles Unified School District
- LA Reservoir UV Disinfection Treatment Plant
 - Final Planning completed
 - Design 100 percent complete anticipated January 2015

- Construction documents advertise anticipated June 2015

SDWSRF Status

SDWSRF Reimbursements

Since the last quarterly update (July 1 to September 30, 2014), LADWP has received a total of \$21,713,106.50 in SDWSRF reimbursements as follows:

Project Name	Reimbursement Received
Headworks East Reservoir	\$ 13,780,979.57
RSC Improvement – Lower Reach, Unit 1A East	\$ 7,554,798.60
RSC Improvement – Upper Reach, Unit 5&6	\$ 264,825.01
RSC Improvement – Upper Reach Unit 7	\$ 112,503.32
TOTAL	\$ 21,713,106.50

Water System staff continues to work closely with DFA to meet all legal and administrative requirements of SDWSRF funding, including timely submittal of claims for reimbursement.

Three-Month Look Ahead

- Remove Ivanhoe Reservoir from service
- Complete design and construction specifications for the LA Reservoir UV Disinfection Treatment Plant Project
- Issue Silver Lake Bypass Line and Regulator Station Notice to Proceed
- Start construction on RSC Improvement - Upper Reach, Units 5 and 6

Future Challenges

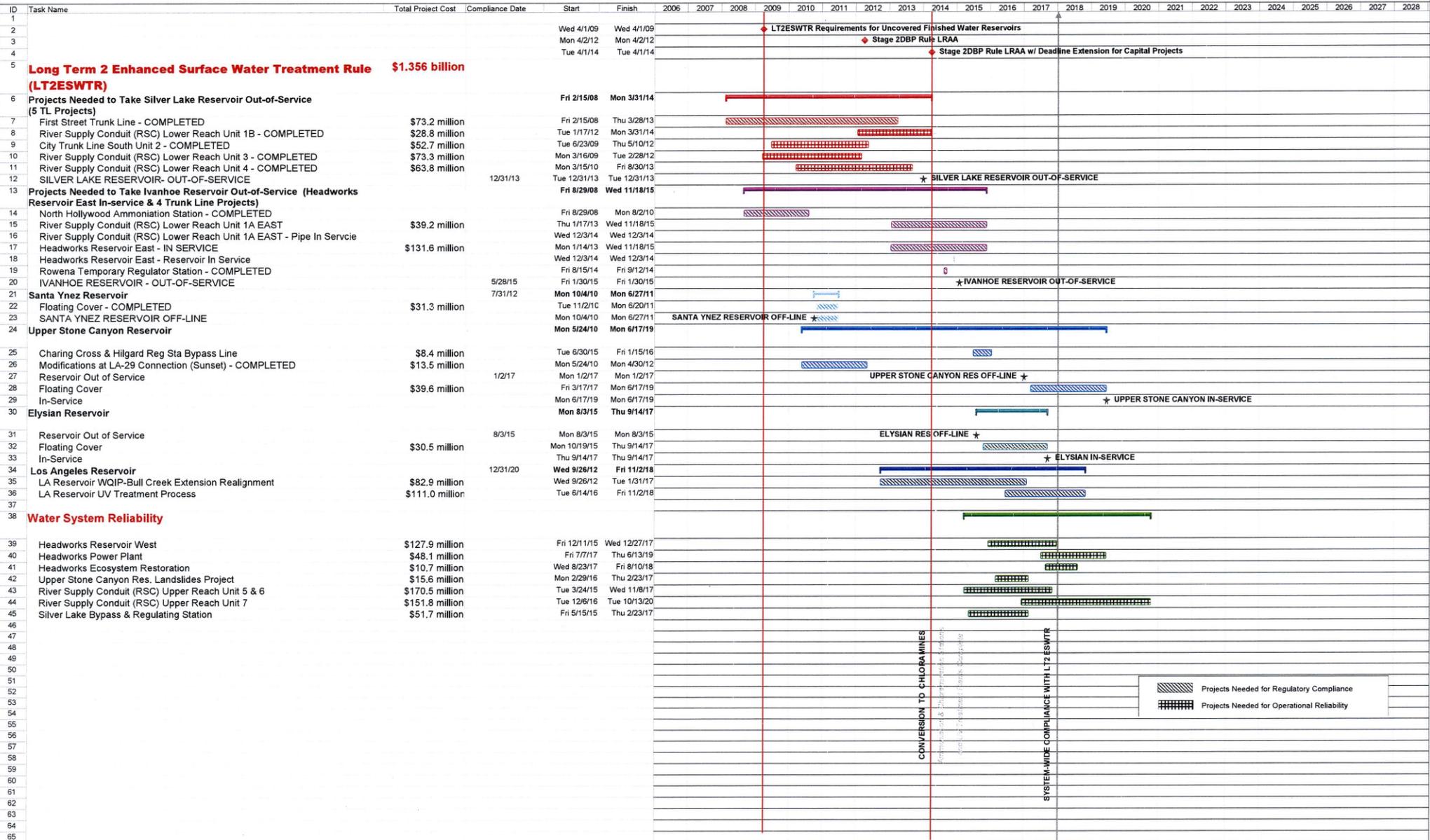
- RSC Improvement – Upper Reach, Unit 7
 - Design is 95 percent complete, but it is impacted by real estate issues
 - Real estate appraisals and property acquisition continue to be a challenge

Attachments

- Water Quality Improvement Projects Needed for Long Term 2 Enhanced Surface Water Treatment Rule Regulatory Compliance (Attachment 1)
- Water Quality Improvement Projects Needed for Stage 2 Disinfectants and Disinfection Byproduct Rule Regulatory Compliance (Attachment 2)
- Summary of Project Milestones for Compliance with Long Term 2 Enhanced Surface Water Treatment Rule Regulatory Compliance (Attachment 3)
- LADWP Water System Safe Drinking Water State Revolving Fund Loans for Water Quality Improvement Projects (Attachment 4)

Water Quality Improvement Projects Needed For Long Term 2 Enhanced Surface Water Treatment Rule Regulatory Compliance

Estimated Construction Schedules and Total Project Costs



*Total Project Cost includes direct charges, department overhead, and inflation adjustment using 3% CPI

Summary of Project Milestones for Compliance with Long Term 2 Enhanced Surface Water Treatment Rule Regulatory Compliance

Distribution Reservoir	Required Compliance Date (DDW)	Current Schedule for Compliance	Projects that Must be Completed for Water Quality Regulatory Compliance (1)	Required Compliance Date (DDW)	Current Schedule for Compliance	Projects to be Completed for Operational Reliability Regulatory Compliance	Required Compliance Date (DDW)	Current Schedule for Compliance
Santa Ynez	November 2011	November 2010	None required			None required		
Silver Lake	December 2013	December 2013	RSC Trunk Line Unit 1B RSC Trunk Line Unit 3 RSC Trunk Line Unit 4 First Street Trunk Line City Trunk Line – South, Unit 2	November 28, 2014 January 31, 2013 November 28, 2014 December 31, 2013 June 29, 2012	March 2014 February 2012 August 2013 June 2013 May 2012	None required		
Ivanhoe	May 2014 (6)	January 2015	Silver Lake Bypass and Regulator Station RSC Trunk Line Unit 1A East Headworks Reservoir East	November 30, 2017 September 30, 2014 (3) November 28, 2014	August 2016 November 2014 November 2014	RSC Trunk Line Unit 5 RSC Trunk Line Unit 6 RSC Trunk Line Unit 7 Headworks Reservoir West	December 31, 2018 December 31, 2018 August 31, 2020 TBD	February 2017 February 2017 December 2020 June 2017
Elysian	August 2015	August 2015	None required			None required		
Upper Stone Canyon	January 2017	January 2017	MWD LA-29 Charing Cross & Hilgard Reg. Sta. Bypass Line (5)	June 2016 (2) January 2017 (2)	April 2012 December 2015	None required		
Los Angeles	December 2020	January 2018	UV Los Angeles Reservoir	December 2020	January 2018	Bull Creek Extension Realignment	December 30, 2018	January 2017

Completed

Project behind schedule but not critical

LOS ANGELES DEPARTMENT OF WATER AND POWER - WATER SYSTEM
SAFE DRINKING WATER STATE REVOLVING FUND (SDWSRF) LOANS FOR WATER QUALITY IMPROVEMENT PROJECTS

Projects with Executed SDWSRF Funding Agreements	Funding Agreement Execution Date	Project Complete	In Repayment	STATE REVOLVING FUND				BOND FINANCING		ESTIMATED SAVINGS		Value of Savings at Time of Project Initiation/Water Revenue Bond Sale	
				Award	Rates	Terms	Total Interest	Rates	Total Interest	Total	Annual	PV of ESTIMATED SAVINGS	
												Total	Annual
1 Stone Hollywood Trunk Line (TL) Unit 3	Jan-02	Yes	Yes	\$ 17,751,425	2.32%	20 yrs	\$ 4,536,625	5.08%	\$ 10,732,618	\$ 6,195,994	\$ 309,800	\$ 3,861,380	\$ 193,069
2 Stone Hollywood TL Unit 4	Jun-07	Yes	Yes	\$ 25,335,671	2.60%	20 yrs	\$ 7,316,312	4.84%	\$ 14,481,606	\$ 7,165,293	\$ 358,265	\$ 4,559,265	\$ 227,963
3 Encino Reservoir	Sep-07	Yes	Yes	\$ 36,432,000	2.45%	20 yrs	\$ 9,877,543	4.84%	\$ 20,824,152	\$ 10,946,609	\$ 547,330	\$ 6,965,310	\$ 348,266
4 Lower Stone Canyon Reservoir	Jul-09	Yes	Yes	\$ 38,684,250	2.29%	20 yrs	\$ 9,760,256	5.12%	\$ 23,571,190	\$ 13,810,933	\$ 690,547	\$ 8,581,830	\$ 429,092
5 River Supply Conduit Lower Reach Unit 4	Jun-10	No	No	\$ 46,842,500	0.00%	20 yrs	\$ -	5.25%	\$ 29,378,440	\$ 29,378,440	\$ 1,468,922	\$ 18,054,875	\$ 902,744
6 Santa Ynez Reservoir	Jun-10	Yes	Yes	\$ 9,573,792	0.00%	20 yrs	\$ -	5.25%	\$ 6,004,442	\$ 6,004,442	\$ 300,222	\$ 3,690,102	\$ 184,505
7 City TL South Unit 2	Jun-10	Yes	Yes	\$ 10,000,000	0.00%	20 yrs	\$ -	5.25%	\$ 6,271,749	\$ 6,271,749	\$ 313,587	\$ 3,854,379	\$ 192,719
8 River Supply Conduit Lower Reach Unit 3	Jun-10	Yes	Yes	\$ 20,000,000	0.00%	20 yrs	\$ -	5.25%	\$ 12,543,498	\$ 12,543,498	\$ 627,175	\$ 7,708,758	\$ 385,438
9 River Supply Conduit Lower Reach Unit 1B	Jun-11	No	No	\$ 33,030,000	0.00%	20 yrs	\$ -	4.35%	\$ 16,761,992	\$ 16,761,992	\$ 838,100	\$ 11,119,230	\$ 555,962
10 Santa Ynez Reservoir (with 100% Principal Forgiveness)	Aug-09	Yes	N/A	\$ 10,000,000	-	-	\$ -	5.25%	\$ 6,271,749	\$ 16,271,749	\$ 813,587	\$ 10,000,000	\$ 500,000
11 City TL South Unit 2 (with 100% Principal Forgiveness)	Aug-09	Yes	N/A	\$ 10,000,000	-	-	\$ -	5.25%	\$ 6,271,749	\$ 16,271,749	\$ 813,587	\$ 10,000,000	\$ 500,000
12 River Supply Conduit Lower Reach Unit 3 (with 100% Principal Forgiveness)	Aug-09	Yes	N/A	\$ 25,000,000	-	-	\$ -	5.25%	\$ 15,679,372	\$ 40,679,372	\$ 2,033,969	\$ 25,000,000	\$ 1,250,000
13 River Supply Conduit Lower Reach Unit 4 (Grant)	Jun-10	No	N/A	\$ 1,000,000	-	-	\$ -	5.25%	\$ 627,175	\$ 1,627,175	\$ 81,359	\$ 1,000,000	\$ 50,000
14 Santa Ynez Reservoir (Grant)	Jun-10	Yes	N/A	\$ 1,000,000	-	-	\$ -	5.25%	\$ 627,175	\$ 1,627,175	\$ 81,359	\$ 1,000,000	\$ 50,000
15 Headworks East Reservoir	Jun-12	No	No	\$ 127,235,853	0.00%	30 yrs	\$ -	4.25%	\$ 99,079,914	\$ 99,079,914	\$ 3,302,664	\$ 55,703,222	\$ 1,856,774
16 River Supply Conduit Lower Reach Unit 1A	Jun-12	No	No	\$ 64,769,179	0.00%	30 yrs	\$ -	4.25%	\$ 50,436,449	\$ 50,436,449	\$ 1,681,215	\$ 28,355,623	\$ 945,187
17 River Supply Conduit Upper Reach Units 5&6	Jun-13	No	No	\$ 100,972,990	0.00%	30 yrs	\$ -	4.47%	\$ 83,370,378	\$ 83,370,378	\$ 2,779,013	\$ 45,665,632	\$ 1,522,188
18 River Supply Conduit Upper Reach Unit 7	Jun-13	No	No	\$ 102,281,674	0.00%	30 yrs	\$ -	4.47%	\$ 84,450,919	\$ 84,450,919	\$ 2,815,031	\$ 46,257,492	\$ 1,541,916
19 Elysian Reservoir Water Quality Improvement Project (Planning)	Jun-13	No	No	\$ 500,000	0.00%	5 yrs.	\$ -	1.47%	\$ 20,435	\$ 20,435	\$ 4,087.00	\$ 19,632	\$ 3,926.40
20 Los Angeles Reservoir Water Quality Improvement Project-Ultraviolet Light Treatment (Planning)	Jun-13	No	No	\$ 500,000	0.00%	5 yrs.	\$ -	1.47%	\$ 20,435	\$ 20,435	\$ 4,087.00	\$ 19,632	\$ 3,926.40
21 Upper Stone Canyon Reservoir Water Quality Improvement Project Planning)	Jun-13	No	No	\$ 500,000	0.00%	5 yrs.	\$ -	1.47%	\$ 20,435	\$ 20,435	\$ 4,087.00	\$ 19,632	\$ 3,926.40
22 Los Angeles Aqueduct Filtration Plant Ultraviolet Light Treatment	Jun-14	No	No	\$ 73,757,219	2.09%	30 yrs	\$ 25,828,413	4.11%	\$ 55,254,462	\$ 29,426,049	\$ 980,868.30	\$ 16,823,155	\$ 560,771.83
23 Manhattan Wells Ammoniation Station	Jun-14	No	No	\$ 11,364,849	2.09%	30 yrs	\$ 3,979,760	4.11%	\$ 8,513,860	\$ 4,534,100	\$ 151,136.67	\$ 2,592,189	\$ 86,406.30
24 North Hollywood Ammoniation Station	Jun-14	No	No	\$ 25,630,600	2.09%	30 yrs	\$ 8,975,362	4.11%	\$ 19,200,900	\$ 10,225,538	\$ 340,851.27	\$ 5,846,039	\$ 194,867.97
25 Silver Lake Reservoir Bypass & Regulating Station	Jun-14	No	No	\$ 43,951,150	2.09%	30 yrs	\$ 15,390,879	4.11%	\$ 32,925,552	\$ 17,534,673	\$ 584,489.10	\$ 10,024,741	\$ 334,158.03
26 Los Angeles Aqueduct Filtration Plant Ultraviolet Light Treatment (Grant)	Jun-14	No	No	\$ 3,000,000	-	-	\$ -	4.11%	\$ 5,247,419	\$ 5,247,419	\$ 174,913.97	\$ 3,000,000	\$ 100,000.00
27 Manhattan Wells Ammoniation Station (Grant)	Jun-14	No	No	\$ 3,000,000	-	-	\$ -	4.11%	\$ 5,247,419	\$ 5,247,419	\$ 174,913.97	\$ 3,000,000	\$ 100,000.00
28 North Hollywood Ammoniation Station (Grant)	Jun-14	No	No	\$ 3,000,000	-	-	\$ -	4.11%	\$ 5,247,419	\$ 5,247,419	\$ 174,913.97	\$ 3,000,000	\$ 100,000.00
29 Silver Lake Reservoir Bypass & Regulating Station (Grant)	Jun-14	No	No	\$ 3,000,000	-	-	\$ -	4.11%	\$ 5,247,419	\$ 5,247,419	\$ 174,913.97	\$ 3,000,000	\$ 100,000.00
				\$ 848,113,152			\$ 85,665,190		\$ 624,330,321	\$ 585,665,171	\$ 22,624,993	\$ 338,722,118	\$ 13,223,805

E WATER LOSS AUDIT SUMMARY AND INFORMATION

E.1 Introduction

LADWP completed its first in-depth Water Loss Audit and Component Analysis Project (Project) in the Fall of 2013. The audit examined the efficiency of the Water System by auditing the distribution system for fiscal year (FY) 2010-11. The Project addressed three specific tasks:

1. Examine the Water System's current ability to accurately identify water losses;
2. Determine the economic optimum level of water losses; and
3. Identify, prioritize, and recommend the most efficient and cost-effective loss intervention strategies to minimize future water loss.

The goal of the audit was to fulfil the Best Management Practice 1.2 (BMP 1.2) required by the California Urban Water Conservation Council (CUWCC). With the passage of AB 1420, effective in 2009, water loss studies are mandatory for water agencies to qualify for State grants and loans.

Because the CUWCC BMP 1.2 requires a water loss audit to be conducted by water utilities annually and a component analysis to be conducted every four years, LADWP also implemented a training component. The training will allow Water Resources staff to perform future water loss audit and component analyses for ongoing BMP compliance.

Figure 1 provides performance indicators for LADWP during FY 2010-11. "Real Losses" are described as wet water losses, for instance leaks and theft. Whereas "Apparent Losses" are described as non-wet water losses, for instance meter inaccuracies and billing errors.

Figure 1: Performance Indicators for FY 2010-11

Performance Indicator (PI)	Description of Use	PI for LADWP (FY 2010-11)
Infrastructure Leakage Index (ILI)	ILI values close to 1 indicate a water system with very low leakage. The ILI is calculated by comparing the annual volume of Real Losses against a standard quantifying the lowest Real Losses achievable for the Water System.	1.26
Real Losses in Gallons per Service Connection per Day	This is the preferred basic operational performance indicator for analyzing leakage management performance and one of the most reliable.	23.21
Apparent Losses in Gallons per Service Connection per Day	This performance indicator is useful for comparing losses against average annual consumption per customer.	10.60
Real Losses as a % of System Input Volume	Real Losses are the physical water lost from the distribution system. It is the annual volume of water lost through all types of leaks, breaks, and overflows. The Real Loss volume depends on break frequencies, flow rates, and the duration of individual failures.	3.5%

E.2 Additional Recommendations

Beyond the findings identified by the Project, many additional recommendations were established to further decrease water loss and improve LADWP's Water System performance. The following are highlights of some key recommendations for improving supply and demand volume accuracy, reducing apparent losses, and reducing real losses.¹

1. Use new meters for future calculation of system input volumes for the Los Angeles Aqueduct Filtration Plant.
2. Install an ultrasonic multi-point meter to capture flow through the West Outlet.
3. Improve measurements of groundwater production by installing meters on all collector lines.
4. Streamline the Supervisory Control and Data Acquisition (SCADA) system organization.
5. Track reservoir level data, so that total increases or decreases in storage volume can be included in calculation of the system input volume and authorized consumption.
6. Install a meter at the LA-25 MWD connection.

¹ For full report, see

https://www.ladwp.com/cs/idcplg?IdcService=GET_FILE&dDocName=OPLADWPCCB402321&RevisionSelectionMethod=LatestReleased

7. Correct the inaccuracies between the Work Management Information System (WMIS) and the Customer Information System (CIS).
8. Investigate meters and/or accounts highlighted by the Project for proper meter sizing and potential revenue enhancement.
9. Track authorized unbilled/unmetered consumption volumes.
10. Investigate further what portion of fire service meters register consumption, and read the fire service meters on a regular basis.
11. Upgrade fire service meters with Automated Meter Reading and Advanced Metering Infrastructure (AMR/AMI) for easier tracking throughout LADWP’s service area.

E.3 Recommended Strategy for Reduction of Apparent Losses

Figure 2 summarizes the timeline and associated strategies recommended for reduction of apparent losses:

Figure 2: Summary of Recommendations for Apparent Losses

Fiscal Year	Small Meter Testing	Small Meter Replacement	Large Meter Maintenance	Unbilled Consumption
FY 13–14	Ongoing Random Small Meter Testing	Replace targeted size/create meter groups	Initiate the overhaul program	Read fire services regularly
FY 14–15			Begin consumption profiling for highest revenue-generating customers	
FY 15 Through FY 18		Revisit replacement economics and target revised group of small meters	Upgrade meters with appropriate technology replacement and meter size where necessary	Upgrade fire services to AMI/AMR

E.4 Recommended Strategy for Reduction of Real Losses

The following table summarizes the timeline and associated strategies recommended for reduction of real losses:

Figure 3: Summary of Recommendations for Real Losses

Fiscal Year	Proactive Leak Detection	Improved Location and Repair Times for Reported Leaks	Pressure Management Program
FY 13-14	Prepare for implementation of proactive leak detection program	Focus on collection of better leak repair data	Prepare for implementation of pressure monitoring pilot in 5 to 10 pressure zones
FY 14-15	Detailed leak detection in 10% to 15% of the distribution network using LADWP leak detection staff	Focus on collection of better leak repair data	Implement Step 1 of the pressure management program
FY 15-16	Detailed leak detection in 10% to 15% of the distribution network using LADWP leak detection staff	Update analysis on improved location and repair times, and evaluate the necessary additional budget for reducing the average location and repair time for reported mains leaks	
FY 16-17	Detailed leak detection in 10% to 15% of the distribution network using LADWP leak detection staff	If cost effective, deploy additional repair crews to reduce average location and repair times to optimum levels	
FY 17-18	Detailed leak detection in 10% to 15% of the distribution network using LADWP leak detection staff		
FY 18-19	Detailed leak detection in 10% to 15% of the distribution network using LADWP leak detection staff		
FY 19-20	Evaluate results of detailed leak detection efforts and update strategy according to findings over the past four years	If cost effective, deploy additional repair crews to reduce average location and repair times to optimum levels	Implement Step 2 of the pressure management program
FY 20 Through FY 26	Implement updated proactive leak detection strategy and if/where AMI is implemented utilize AMI and SCADA data for prioritizing areas for ongoing leak detection based on calculated leakage loss levels by pressure zone		Implement Step 3 of the pressure management program

F JOINT POWERS AUTHORITY (JPA)

F.1 Introduction

LADWP has embarked on an aggressive sustainability plan to increase its local water supply and decrease reliance on imported water while handling significant challenges of groundwater contamination. In addition, LADWP faces numerous other challenges in the years ahead including increasing its infrastructure investments and meeting an array of Federal and State environmental mandates. Solutions addressing these challenges will put significant pressure on water rates.

Securitization is the process in which certain types of income producing assets are pooled so they can be repackaged into interest-bearing securities. The interest and principal payments from the assets are passed through to the purchasers of the securities¹. The issuance of rate reduction bonds, a type of securitization, will help reduce future water rate increases by funding certain qualifying capital projects such as water quality and related investments on a more affordable basis.

Under an AB 850 securitization, the interest and principal on the interest-bearing securities, in this case rate reduction bonds, are paid from a legislatively authorized non-bypassable charge that the JPA or an LLC formed by the JPA can impose directly on the water customers of a qualifying publicly owned water utility such as LADWP. The charge constitutes a separate property right that is not part of the assets or water revenues of LADWP. This allows LADWP to obtain an anticipated AAA bond rating on rate reduction bonds, which could result in lower ongoing interest costs of 10 to 20 basis points compared to LADWP's water system revenue bonds, which have current ratings of Aa2/AA/AA.

An additional benefit is that the rate reduction bonds are not treated as a debt of the LADWP water system for rating purposes, which helps LADWP to maintain the credit ratings on the water system revenue bonds and thereby reduces the cost of other water capital projects financed with water system revenue bonds. In addition, in order to maintain its Aa2/AA/AA ratings on its water system revenue bonds, LADWP is required to maintain a debt service coverage ratio of 1.70 on its water system revenue bonds from water rates. It is anticipated that LADWP will not be required to include the debt service on the rate reduction bonds in calculating this coverage amount.

¹ "Back to Basics: What is Securitization?", Finance and Development, September 2008.

Finally, LADWP may be able to treat the rate reduction bonds as “off balance sheet” for accounting purposes. Issuance of securitized debt through the JPA creates some anomalies in the income statement. When the debt is issued, funds are treated as contributions in aid of construction and booked as revenue which creates the perception on the books of increased net income. Over time as the cash from the securitized funds is spent, the amortization of the debt service costs decreases net income.

The recovery of the debt service costs associated with the securitized rate reduction bonds impacts the rate design by requiring a special rate element or elements for payment of the securitized debt service cost. In the case of LADWP, more than one cost element normally recovered through the Water Quality Infrastructure Adjustment, Water Procurement Adjustment factor, and possibly a portion of base rates will be securitized. Each element will appear as a separate line item on the customer bill.

In the end, the rate component total will be less than the total which would have resulted in the absence of securitization. In addition, consistent with current rate structure, securitization cost recovery charges will be volumetric. This process allows customers the ability to transparently track the cost of qualifying projects, as well as, mitigate bill impact through continued conservation.

F.2 Joint Powers Authorities: Rate Reduction Bonds

The City of Los Angeles sponsored Assembly Bill 850 (Nazarian) to amend the Joint Exercise of Powers Act of the California Government Code to authorize joint power authorities to issue rate reduction bonds to finance local publicly-owned water conservation, reclamation, and mandated projects until December 31, 2020. According to Nazarian, “AB 850 will result in interest savings, lower debt service, and reduce local borrowing costs to decrease utility rate increases.” AB 850 was signed into law by the Governor of California on October 8, 2013.

LADWP sought this financing structure because it qualifies for a higher bond-rating (AAA) than other types of financing available, thereby reducing interest rates and financing costs, and ultimately, rates to customers. In order to qualify for these rate reduction bonds, a public agency must pledge a portion of revenues only to the rate reduction bondholders using a special tariff that is dedicated as a secured asset to rate reduction bondholders. This cannot be accomplished using revenue bonds, LADWP’s typical long-term financing mechanism.

AB 850’s authority to finance utility projects via rate reduction bonds is limited to JPAs whose financing activities are limited to financing utility projects and projects for the use and benefit of public water agencies. Individual water agencies cannot issue rate reduction bonds. Two or more public agencies may form a JPA if one of the public agencies owns and operates a utility furnishing water service to retail customers, where a separate charge can be added to the water service bill.

Eligible projects must be for conservation or reclamation purposes, or must be necessary to comply with a mandate such as the Safe Drinking Water Act. Bond proceeds can fund projects that reduce the amount of potable water supplied by the utility or reduce the amount of water imported by the utility. This would include stormwater capture and treatment, water recycling, development of local groundwater resources, groundwater recharging, and water reclamation.

In applying for JPA financing, the water agency must specify the utility projects to be financed, the maximum principal amount, the maximum interest rate, and the maximum stated terms of the rate reduction bonds. State approval is required through the California Pollution Control Financing Authority.

A JPA which finances the cost of a utility project with rate reduction bonds, is authorized and directed to impose and collect a utility project charge. In addition, upon the effective date of the financing resolution related to the rate reduction bonds, a first priority statutory lien exists on the utility project property to secure payment.

The Joint Exercise of Powers Act requires a separate entity distinct from the municipal water agency (such as a JPA) to issue the rate reduction bonds. By being legally isolated from the utility, the JPA's bondholders are not at risk in the event of a bankruptcy of the municipal water agency.

F.3 Formation of the Joint Powers Authority

LADWP proposes partnering with another Southern California water agency to form a new JPA. Approval by the legislative body of both agencies participating in the JPA would be needed to move forward with the actual formation.

The costs of establishing a JPA are minimal for LADWP. The LADWP has incurred up-front legal and staff costs in the preparation of this concept. Ongoing associated administrative costs would be shared as mutually agreed upon by the participants of the JPA. Annually, direct costs are expected to be in the low six figure range. However, savings due to lower costs of financing are expected to far exceed the administrative costs.

The high-level steps involved in forming a JPA are shown in Figure 1.

Figure 1: Forming a JPA

Step	Description
Develop JPA Agreement	LADWP and prospective partner develop a JPA agreement that specifies the purpose, governance structure and operation of the JPA. LADWP has such a draft agreement.
Execute JPA Agreement	Execution of the JPA Agreement for LADWP involves approval by the Board of Water and Power Commissioners (Board) and the City Council/Mayor. The JPA agreement would be executed on behalf of the City of Los Angeles by LADWP. Execution of the JPA Agreement by LADWP's partner agency would require approval of that agency's governing authority. Upon approval by the governing bodies of both entities, the General Manager would be authorized to execute the Agreement and associated enabling documents.
Legally Form JPA	(a) File notice of JPA Agreement with Secretary of State, 30 days after effective date as required by California Government Code Section 6503.5. (b) File JPA Agreement with Controller as required by California Government Code Section 6503.6. (c) File notice with Secretary of State and clerk of each county in which the JPA maintains an office, within 70 days of commencement of the JPA's existence, as required by California Government Code Section 53051.
Establish JPA Infrastructure	JPA infrastructure is anticipated to be minimal. No dedicated permanent staff is anticipated at this time. Instead, "for contract" professional services would provide any necessary services, including legal counsel, accounting, financial advisory services, trustee and banking services, and independent manager services for sub-entities of the JPA that may be formed related to each financing.

There are several key considerations in the formation and operation of the proposed JPA:

- Transactions undertaken by the JPA will be structured so that JPA members do not bear any financial obligation or other liabilities for projects other than as may be separately incurred under off-take or other agreements.
- LADWP has significant experience working with JPAs for our Power System. For over 33 years, LADWP has participated in the Southern California Public Power Authority with 11 other municipal utilities for several joint power projects. However, LADWP has not yet had a comparable JPA for water projects.
- The membership of the JPA could also be expanded, with the consent of the existing members, and subsequent revisions to the JPA Agreement.
- The Board and City Council retain existing authority as to whether or not to proceed with constructing particular projects, and how to finance such projects.

Subsequent to the formation of the JPA, LADWP anticipates applying for securitized financing for water projects included in the FY 2015-16 budget. LADWP staff would follow the steps shown below to issue debt through the JPA. The execution of these steps would likely entail a six- to nine-month process.

F.4 Detailed Steps Involved in a Securitization Financing Through the Proposed JPA

1. LADWP identifies the funding needs.
2. LADWP identifies the preferred financing source—grant funds, State revolving funds, financing through the JPA, or LADWP issued tax-exempt revenue bonds.
3. In order to finance through the JPA, LADWP obtains authorization of both the Board of Water and Power Commissioners (Board) and the City Council to apply for financing through the JPA.
4. The Board shall make determinations that the project is a utility project as defined in AB 850, the source of payment for the rate reduction bonds will be the utility project property, and the use of rate reduction bonds is expected to result in lower rates.
5. LADWP applies for financing through the JPA.
6. The California Pollution Control Financing Authority reviews the rate reduction bonds and determines whether the issue is qualified under AB 850.
7. JPA Governing Board approves the financing.
8. JPA provides notification to affected customers of the charge to be levied for repayment of bonds (Proposition 218 notice), and holds a public hearing. If not more than 50 percent of customers object through return of notification cards, the financing advances.
9. JPA issues the rate reduction bonds.
10. JPA remits the bond proceeds to LADWP.
11. LADWP utilizes the bond proceeds to pay for the local resource or mandated capital projects.
12. The bonds would be repaid by a dedicated charge on LADWP customers' bills. LADWP, as the servicing agent, issues the bills, collects the charge and remits it to the JPA to pay for the debt service on the JPA bonds.
13. The rate reduction bond investors are repaid from funds derived from the charge remitted to the JPA.

G BOND REFINANCING SAVINGS (WATER & POWER SYSTEMS)

This appendix shows the refinancing savings for both Water and Power System bonds since June 2009.

H RESPONSE TO COUNCIL RECOMMENDATIONS

On September 19, 2012, the Los Angeles City Council (Council) Energy and Environment Committee adopted a report with ten recommendations associated with third-party review of LADWP's Incremental Electric Rate Ordinance. The full Council adopted the same recommendations in connection with its approval of the Incremental Electric Rate Ordinance on October 2, 2012. Many of these recommendations stemmed from the recommendations found in Appendix E of the "Los Angeles Department of Water and Power (LADWP) - Power System Financial Review and Rate Restructuring Analysis" report issued to the City Council on August 23, 2012 (RPA Power Report).

A summary of the activities and status for each of the applicable recommendations is included in this report. While these recommendations were directed at the LADWP Power System, several also have relevance to the Water System. Therefore, a summary of the activities and status for each of the applicable recommendations is included in this report to the extent the specific item directly impacts the Water System's operations and revenue requirement.

LADWP has made significant progress towards addressing each item, including working collaboratively with the Ratepayer Advocate (RPA), Chief Legislative Analyst (CLA) and Chief Administrative Officer (CAO).

As shown in the table below, formal programs or other activities are underway to address all of the recommendations, and LADWP has made significant progress in each area.

Response to City Council Recommendations

- a. Conduct negotiations with labor to find common ground that allows for greater flexibility to contract out effectively and bring salaries and benefits closer to other power utility providers.**

In December of 2013, the Council approved a new Memorandum of Understanding (MOU) with IBEW Local 18 that provides significant savings to LADWP ratepayers and makes significant progress towards addressing this recommendation. Specifically, the new MOU makes progress in the following major areas:

- MOU term was extended from 10/1/14 to 9/30/17
 - Defer the existing 2.9% COLA from 10/1/13 to 10/1/16
 - Create new lower (Tier 2) pension benefits for new employees
 - Entry level salaries are reduced for 34 common classes
-

- Contracting out overtime restriction – reduction from 10% to 5%
- Sick time medical certification requirement for three days rather than the previous five days

As a result of these changes, LADWP is projected to reduce labor costs by \$456 million over the next four years.

Key MOU Components	Four-Year Savings Estimate
Defer COLA from 10/1/13 to 10/1/16	\$385.0
Entry Level Salary Reduction for 34 Common Classes	\$15.0
Sick Time Medical Certification Requirement	\$12.0
Contracting Out Overtime Restriction - Reduction from 10% to 5%	\$3.0
Retirement Plan Tier 2 For All New Hires	\$41.0
Total Estimated Savings over four years	\$456.0

b. Re-evaluate and consider replacing the surcharge-based restructuring approach with fully restructured permanent rates once legal considerations allow.

(This item is specific to the Power System and is therefore not discussed in this report)

c. Conduct a new formal cost of service study in order to prepare for future power rate restructuring.

LADWP has new cost of services studies for both the Water and Power Systems. These studies are based on marginal cost principles to allocate the overall water & power revenue requirement to each major customer class.

The new cost of service studies by themselves have no impact on the overall revenue requirements; however, they will be used to allocate revenues between customer classes and provide guidance on rate design. This methodology is consistent with industry best practice and leads to the most efficient use of utility resources by LADWP customers. This methodology is also consistent with the requirements of Proposition 218.

d. Conduct a benchmarking assessment to review the cost per project for the repowering program and the Power Reliability Program to ensure cost reasonableness.

(This item is specific to the Power System and is therefore not discussed in this report)

e. Identify opportunities to contract out and explore the potential savings, including the benchmarking of staffing and outsourcing levels against utility peers.

As part of the recent LADWP reorganization by the General Manager, a new Corporate Performance function has been created. This new function will focus on:

- High-level benchmarking: As of February 2015, the Department has completed its initial high-level benchmarking. The study identifies areas where LADWP is comparable or better than industry performance and where there are opportunities for improvement. This high-level study provides a “roadmap” for follow-up in-depth studies to be conducted. Key findings of the benchmarking study for the Water System include:
 - Total O&M costs: The Water System total O&M costs on a per customer and per gallon basis are 2nd/3rd quartiles. This includes the \$56 million of O&M for the Los Angeles Aqueduct that most water utilities do not have. If this cost was excluded, these metrics would improve by one full quartile.
 - Reliability metrics: LADWP is 2nd quartile for both planned and unplanned service disruptions, as well as system losses.
 - The LADWP’s key financial metrics are in line with industry peer sets.
 - Customer Service O&M: The Water System benchmark for customer service O&M per account fell into the 4th quartile. This result could be lower as a result of business strategies for mostly publicly owned utilities within the AWWA peer set.
 - LA Metro wage rates - Compared to other regions of the US, wage rates for the LA Metro area can range from 13% to 33% higher than peer utilities. The labor component, including overtime and benefits, represents 73% of the Water System’s total O&M expense.
 - Regional water rate - LADWP’s rates remain competitive with neighboring water utilities in all customer classes for FY 2012-13. Water utilities in California are increasing rates in response to both State and Federal regulatory requirements as well as much needed water storage and recycling infrastructure programs.
 - Real system losses - This metric benchmarks in the 2nd and 3rd quartile and shows that the Water System losses are roughly in line with the median of the peer set.
 - Total unplanned service disruptions per customer - LADWP 2nd quartile result is a favorable benchmark relative to both National and Western Regional peers.
 - Total planned service disruptions per customer - LADWP’s 1st and 2nd quartile results are favorable benchmarks relative to National and Western Regional peers, respectively.
 - Follow-up in-depth studies: As a result of the high level benchmarking study, there will be a number of areas that require further study and analysis. While the specific areas to be studied will be identified after completion of the initial study, some potential components of this study will be:
 - Determine number of employees and overtime.
 - Provide contracting amounts as a percent of total for various functions and sub functions.
 - Conduct more detailed salary/pension/healthcare benchmark study with adjustments for cost of living in the greater Los Angeles area.
 - Identify areas/processes where benchmarking data shows that there is room for improvement. These areas/processes will be the subject of future business process improvement studies.
 - Determine financial impacts of the significant policies that increase LADWP’s costs.
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- Business process mapping studies: As a result of the above studies, there will be a number of areas that will present opportunities for significantly improving financial and/or Departmental performance. These functions will be the subject of specific business process mapping studies. These studies will compare industry best practices and evaluate what steps need to be taken for LADWP to move towards the best practice.

f. Review overtime expenses allocation, as well as the Department’s contractual requirements that have an impact on overtime.

The current MOU with IBEW Local 18 has key provisions in it for reducing overtime as a consequence of obtaining contracting services. Overtime at a utility is affected by several factors; many of which are operational in nature and in some cases outside the immediate control of the utility; for example, emergency mainline breaks or regulator station call-outs.

Additionally, overtime is considered a safe and cost effective means of obtaining needed resources when used in moderation. In general, it is good utility practice to use overtime at the rate of roughly 15% of regular labor costs. Currently, LADWP is limited in its ability to recruit replacement employees in a timely manner. This is resulting in somewhat higher overtime levels. For the Water System, overtime was higher than the budget at 15.6% for FY 2013-14, this is offset by underspending in regular labor due to the slow hiring process. The approved budget for overtime for the Water System in FY 2014-15 is 8.4% with a proposed five-year average of 9.8%.

g. Complete a rigorous review of the Department’s hedging plan to lock in low fuel prices.

(This item is specific to the Power System and is therefore not discussed in this report)

h. Establish a plan for energy efficiency that maintains expenditure levels at an achievable and cost effective level.

(This item is specific to the Power System and is therefore not discussed in this report)

i. Seek greater Departmental efficiencies by pursuing process improvement efforts across a range of areas and practices.

In FY 2011-12, LADWP initiated a Department-wide \$459 million, three-year cost reduction program. The final results from the cost reduction plan, concluded in June 2014, exceeded the total \$459 million cost reduction plan target. The source of the cost savings has changed somewhat, and the Department has saved more through non-labor and capital budgets; however, LADWP has managed the overall portfolio of savings opportunities and exceed the original target by \$7.8 million.

Source (\$M)	Original Target	Total Savings	Feb. 2011 - June 2012 Savings	FY 12-13 Savings	FY 13-14 Savings	Difference between target
Total	\$459.1	\$466.9	\$188.7	\$168.5	\$109.8	\$7.8

LADWP has created a new Corporate Performance function. This function will first seek to evaluate the overall performance by conducting a high-level benchmarking study, followed by a

more in-depth follow-up study to specifically evaluate where there are opportunities to improve cost, reliability, and/or customer service performance of LADWP. Ultimately, the results of these studies will result in a number of business process mapping studies where LADWP operations can be compared to and moved toward industry best practice. Some potential changes could require the “meet and confer” process, as well as require subsequent MOU changes.

Additionally, consistent with the Mayor’s goal of making City government more efficient and effective, LADWP will be implementing the COMSTAT key performance indicator tool and process throughout the Department, beginning with a soft launch in April 2015. COMSTAT is built on a single platform with four tiers of performance indicators, each tailored to the appropriate audience. The targeted data monitors and manages dozens of key performance indicators at the Departmental, System, and Division levels, and the integrated COMSTAT platform enables LADWP to evaluate and verify the integrity of the indicators. The goal of the COMSTAT system is to define a “single source of truth” for key indicators and enable transparency for the Mayor, the City, and the public. LADWP expects the COMSTAT tool to be fully operational by the end of 2015.

As a result of these cost reduction efforts, LADWP had no rate ordinance changes for both Water and Power Systems in FY 2014-15. It should be noted that LADWP has used cost containment programs to limit rate actions in the past. Results of these programs are:

- Water System: The Water System has not had a base rate increase for five years, with the last base rate increase taking place in FY 2009-10. The last rate ordinance change took place with the Water Quality Improvement Adjustment factor cap increase in FY 2011-12.
- Power System: Over the five-year period, Power System has gone through three of the years (FY 2010-11, FY 2011-12, and FY 2014-15) without any base rate increase. The last rate ordinance change was a two-year rate action for FY 2012-13 and FY 2013-14.

j. Submit a semi-annual report to the Mayor and Council regarding the status of the Renewable Portfolio Standards program and its impact on rates.

(This item is specific to the Power System and is therefore not discussed in this report)

I PRAG FINANCIAL METRICS

This appendix provides Public Resources Advisory Group's June 12, 2013 memorandum to LADWP regarding financial metrics.