

CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

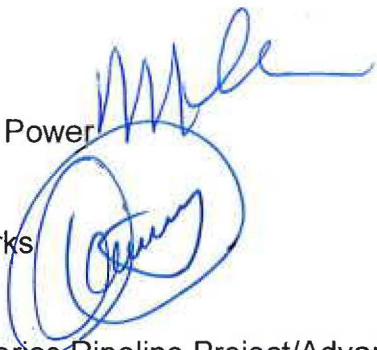
Date: April 10, 2015

To: The City Council

From: Marcie L. Edwards, General Manager
Los Angeles Department of Water and Power

Enrique C. Zaldivar, Director
Los Angeles Department of Public Works
Bureau of Sanitation

Subject: Council File No. 15-0018 Harbor Refineries Pipeline Project/Advanced Water Purification Facility/Water Supply Efforts



This correspondence is in response to the January 7, 2015, motion made by Councilmembers Joe Buscaino and Mike Bonin, requesting the Los Angeles Department of Water and Power (LADWP) and the Los Angeles Department of Public Works, Bureau of Sanitation (LASAN) report on: the current status of recycled water projects – Harbor Refineries Pipeline Project (HRPP) and Terminal Island Advanced Water Purification Facility (TIAWPF) expansion, how these projects fit into the City of Los Angeles' overall local water supply strategy, and the reduction of potable water use.

Background

LADWP has served the City of Los Angeles (City) with a safe and reliable water supply for over a century. Over that time, the City's water supplies have evolved from primarily local groundwater to predominantly imported supplies. Today, the City relies on imported sources for over 85 percent of its water to serve the City's needs. Sustainability of the City's local water supplies is dependent on the City's ability to maximize water conservation, increase recycled water use, expand stormwater capture, restore use of the City's local groundwater basins, and accomplish other local water resource development goals. The combination of these sources provides adequate water supplies to serve the City's needs.

At present, the City receives its domestic water supply from the following sources:

- Eastern Sierra Nevada Watershed via the City-owned Los Angeles Aqueduct (LAA)
- Sacramento-San Joaquin Bay Delta via the State Water Project's California Aqueduct (purchased from the Metropolitan Water District of Southern California (MWD))
- Colorado River via the Colorado River Aqueduct (purchased from MWD)

- Local groundwater
- Recycled water
- Water conservation (though not a source, conservation efforts help to reduce City's water demands)
- Stormwater (recharge potable use offsets)

City's Local Water Supply Strategy

For additional information on LADWP's achievement of local supply goals for water recycling, conservation, stormwater capture, groundwater remediation, and how these goals support the reduction of potable water use, please refer to the enclosure titled, "How Recycled Water Fits Into LADWP's Overall Local Supply Strategy and the Reduction of Potable Water Use."

LADWP's 2010 Urban Water Management Plan (UWMP) is the City's strategic water resource management and planning document, which contains goals for achieving restoration of the City's local groundwater basins, water conservation, water recycling, stormwater capture, and water transfer. These goals work together to increase local water supplies and water conservation from the current 23 percent to 49 percent of the City's total supplies by 2035. Achievement of these goals will allow LADWP to reduce its purchases of imported water supplies by 50 percent. The City's long-term strategy over the UWMP's 25-year planning horizon is to reduce reliance on purchased imported water supplies and improve water supply reliability.

Today, recycled water and water conservation reduces reliance on purchased imported water. Through installed water efficient devices alone, the City conserves approximately 110,800 acre-feet per year (AFY) of water, while recycled water offsets potable demands by over 10,000 AFY. Combined, this is 17 percent of the City's total water demand. By the year 2035, LADWP and LASAN's recycled water and conservation goals are projected to total approximately 229,000 AFY (170,000 AFY of conservation and 59,000 AFY of recycled water), helping to offset 28 percent of the City's total water demand.

The Mayor's Executive Directive No. 5 (ED 5) promotes an aggressive long-term approach to water use efficiencies, thereby ensuring a sustainable supply for the future. It challenges Angelinos to change their behavior and attitudes relative to water consumption. LADWP and LASAN are currently pursuing plans to accelerate its local water resource development goals in response to the ED5.

Current Status of Recycled Water Projects

Harbor Areas

In 1994, LADWP and LASAN partnered to construct a Terminal Island Advanced Water Purification Facility (TIAWPF) at the Terminal Island Water Reclamation Plant (TIWRP). Construction consisted of a distribution pipeline that would send water from TIAWPF to the existing Dominguez Gap Seawater Intrusion Barrier Project (Dominguez Gap). A seawater intrusion barrier protects aquifers from the movement of ocean water into fresh groundwater, causing contamination of the groundwater by salt.

Both the TIAWPF and the distribution pipeline began operation in 2006. Today, advanced treated recycled water supplies about half of the total amount of water used in the Dominguez Gap. The remainder is potable water purchased from Metropolitan Water District (MWD). The Water Replenishment District purchases all water (recycled and potable) for injection into the Dominguez Gap, which is up to 8,000 AFY. Currently, this intrusion barrier is the Harbor area's largest recycled water customer. An additional one AFY of recycled water is served to the LADWP Harbor Generating Station for irrigation uses.

Currently, LADWP is working with LASAN to identify additional opportunities to maximize recycled water use in the Harbor area. Another goal is to eliminate discharge of TIWRP's tertiary effluent into the Los Angeles Harbor. Increasing the treatment capacity of the TIAWPF to 12 million gallons per day (MGD) is necessary to accomplish these goals and will produce more purified recycled water to supply Harbor area customers, including those along the HRPP.

TIAWPF Ultimate Expansion

LADWP submitted a City Council report on the TIAWPF Ultimate Expansion on December 10, 2008. Since then, LASAN is proceeding with the construction of the TIAWPF Ultimate Expansion through a design-build contract.

TIAWPF Ultimate Expansion will increase the advanced water purification treatment capacity from 6 MGD to 12 MGD and will include additional microfiltration, reverse osmosis, advanced oxidation process (AOP) systems, and a balance of upgrades to the

existing pumping stations and systems, chemical addition system, auxiliary systems, and utilities. The AOP system uses ultraviolet irradiation with sodium hypochlorite (UV/NaOCl) and will replace the existing Phase 1 disinfection system. To operate at a constant flow and maximize production, TIAWPF will include a 2.0 million gallon tertiary

effluent equalization tank upstream of the TIAWPF. The construction of the new TIAWPF at TIWRP will be completed by 2017.

Harbor Refineries Pipeline Project (HRPP)

HRPP began in 2009, and the majority of the pipeline segments are complete, please refer to enclosed map "Harbor Recycled Water Distribution System: Existing and Proposed." The four remaining unconstructed segments are located at major railway intersections where pipe jacking or tunneling is required. The following two intersections are subject to permit approval by the Alameda Corridor Transportation Authority (ACTA):

- Alameda Street and Mauretania Street
- Alameda Street and Anaheim Street

LADWP applied for this permit in 2012 and is currently in discussion with the Ports of Los Angeles and Long Beach to receive ACTA permit approval. ACTA permits are on the critical path for HRPP. Further delays on ACTA permits will delay service of recycled water from TIAWPF Ultimate Expansion to future customers.

Originally, HRPP was planned in conjunction with the expansion of the West Basin Municipal Water District's Juanita Millender-McDonald Carson Regional Water Recycling (Carson Regional) Plant. The Carson Regional Plant was expected to provide nitrified tertiary water to future potential customers as described in LADWP's report to City Council in 2008.

Currently, the source of recycled water serviced by HRPP has changed from the Carson Regional Plant in the northern Harbor area to TIAWPF at TIWRP in the southern Harbor area. This change allows LADWP and LASAN to utilize more TIAWPF water, serve Machado Lake, and provide the Harbor Service area with consistent water quality through a single recycled water system.

Machado Lake Pipeline Project (Machado Lake)

Machado Lake is designed to connect the existing Harbor Recycled Water System from the TIAWPF in the southern Harbor area to HRPP in the northern Harbor area. This connection will provide TIWRP TIAWPF Water to Machado Lake and create a more effective looped system.

Machado Lake consists of pipeline along Figueroa Street (between Harry Bridges Boulevard and Anaheim Street), Figueroa Place (between L Street and Pacific Coast Highway), Quay Avenue (between D Street and Anaheim Street), and Anaheim Street (between Quay Avenue and Mahar Avenue). Project design is complete and will be constructed by the Los Angeles Department of Public Works, Bureau of Engineering by 2017.

Recycled Water Storage

LADWP is actively pursuing storage options in the Harbor area to help achieve the two goals of maximizing recycled water use and eliminating discharge of TIWRP's tertiary effluent into the Los Angeles Harbor. Use of a tank in the distribution system will allow the system to effectively handle system demand and supply fluctuations, reducing the amount of potable back up needed during high demand and the amount of TIWRP effluent discharged during low demand.

LADWP is pursuing storage options at either the Department of the Navy's Defense Fuel Support Point – San Pedro (DFSP) or the LADWP Harbor City Reservoir (HCR). DFSP is currently under temporary closure and pending decision by the Joint Chief of Staff for permanent decommission. DFSP is the preferred option by LADWP, as it possesses enough area for up to 12 million gallons (MG) of storage (either through the existing tanks on site or through the construction of a new tank). HCR is a decommissioned potable water reservoir in a residential area that will require demolition and reconstruction of a new storage facility. HCR is not the preferred option over DFSP due to disruptive nature of the work required in a residential community and the small storage capacity of HCR (2.5 MG); however, LADWP is pursuing both options simultaneously to secure storage for the Harbor Recycled Water System.

Potential Recycled Water Customers

Table 1 "Potential Customers and Demand" (enclosed) lists the potential recycled water customers in the Los Angeles Harbor area. Potential customers are also shown in the enclosed map, "Harbor Recycled Water Distribution System: Existing and Proposed." LADWP is working cooperatively with LASAN to explore opportunities for increasing recycled water supply in the Los Angeles Harbor, including delivering treated water from Hyperion.

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If you have any questions or if further information is required for LADWP, please contact Marcie L. Edwards at (213) 367-1338, or Ms. Winifred J. Yancy, Director of Intergovernmental Affairs and Community Relations, at (213) 367-0025. If further information is required for LASAN, please contact Mr. Enrique C. Zaldivar at (213) 485-2210, or Ms. Marisela Reyes, Government Affairs, at (213) 485-2979.

GZ:jy

Attachments

c/att: Councilmember Felipe Fuentes, Chair, Energy and Environment Committee
Councilmember Bob Blumenfield, Vice Chair, Energy and Environment Committee
Councilmember Mike Bonin
Councilmember Joe Buscaino
Councilmember Jose Huizar
Councilmember Paul Koretz
Councilmember Tom LaBonge

Mr. Adam R. Lid, Legislative Assistant

Mr. Enrique C. Zaldivar, LASAN

Ms. Marisela Reyes, LASAN

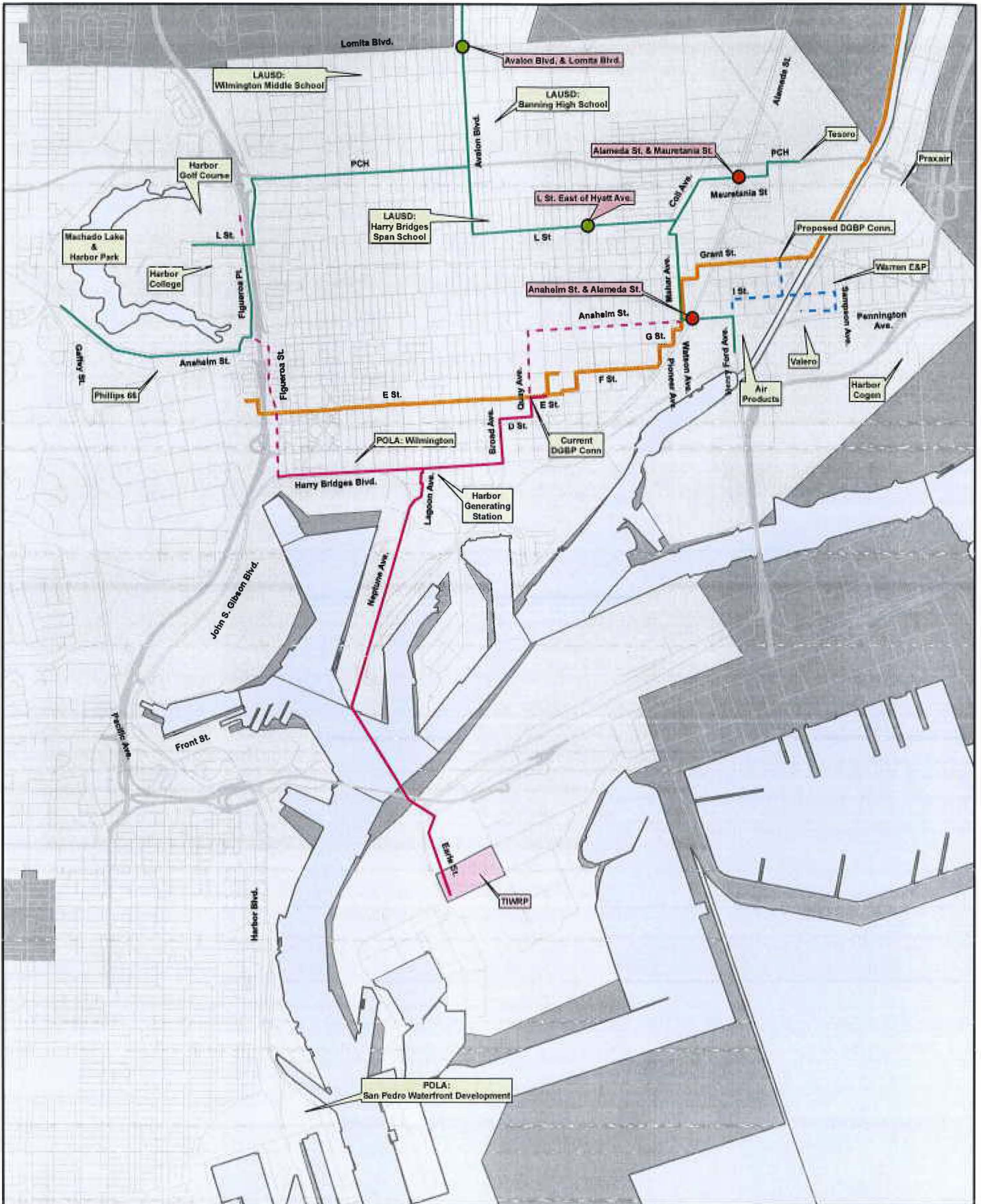
Ms. Winifred J. Yancy

Table 1: Potential Customers and Demand

Customer	Usage and Status	Annual Demand (AFY)
Dominguez Gap Seawater Intrusion Barrier Project (Dominguez Gap)	DGBP is currently receiving approximately 5,000 acre-feet per year (AFY) of recycled water from AWPf and has the potential to receive up to 8,000 AFY of recycled water. LADWP, LASAN, and Dominguez Gap Stakeholders (Los Angeles County Department of Public Works and Water Replenishment District of Southern California) are currently exploring options to add an additional connection between Harbor Recycled Water System and Dominguez Gap to improve reliability of service and maximize recycled water use at Dominguez Gap.	8,000
Air Products (AP)	Industrial customer located along HRPP alignment on Anaheim Street. LADWP is currently working on an agreement with AP to pursue an engineering report evaluating the use of recycled water and the necessary capital improvements required at AP.	2,300
Valero	Industrial customer located along Anaheim Street across the Dominguez Channel from HRPP. Valero signed an agreement to conduct a Front End Engineering Design (FEED) for the design of on-site facilities to deliver recycled water to Valero's cooling towers. Agreement is pending approval by the LADWP Board of Commissioners and City Council and is the first recycled water agreement between LADWP and an oil refinery.	1,000
Praxair	Industrial customer located on the Pacific Coast Highway across the Dominguez Channel from HRPP. LADWP is currently in talks with Praxair to explore options in providing recycled water to Praxair.	250
Harbor Generating Station (HGS)	Located along existing infrastructure on Harry Bridges Boulevard and is currently receiving one AFY of recycled water for irrigation. LADWP is currently exploring on-site requirements of utilizing recycled water at Harbor Generating Station for industrial uses.	160
Machado Lake	Machado Lake will be receiving approximately 140 AFY of recycled water via the Machado Lake Pipeline. LASAN will be providing recycled water to Machado Lake for evaporation losses make-up. LASAN is currently finalizing the technical details of providing recycled water to Machado Lake.	140
Harbor Golf Course	Irrigation customer located adjacent to Harbor Park along Figueroa Place. Harbor Golf has expressed interest in receiving approximately 140 AFY of recycled water. LADWP is working to determine the appropriate system components required to provide recycled water to Harbor Golf.	140
Harbor Park	Irrigation customer located along Figueroa Place and bordered by Figueroa Place, Pacific Coast Highway, Anaheim Street, and Vermont Avenue. Harbor Park is interested in receiving approximately 60 AFY of recycled water. LADWP is working to determine the appropriate system components required to provide recycled water to Harbor Park.	60

Customer	Usage and Status	Annual Demand (AFY)
LAUSD	Expressed interested in receiving approximately 50 AFY of recycled water at Banning High School, Harry Bridges Span School, and Wilmington Middle School. LADWP is currently working to determine the availability of water for LAUSD.	50
POLA Wilmington Waterfront Park	Irrigation customer located along existing recycled water infrastructure on Harry Bridges Boulevard. LADWP is working to determine the appropriate system components required to provide recycled water to Wilmington Waterfront Park.	140
Port of Los Angeles (POLA) San Pedro Waterfront	POLA: San Pedro Waterfront is a series of mixed use customers in the planned POLA San Pedro Waterfront development. LADWP is working to determine the appropriate system components required to provide recycled water to POLA San Pedro Waterfront.	100
Phillips 66 (formerly ConocoPhillips)	Industrial customer located along Anaheim Street, immediately south of Harbor Park. Los Angeles Department of Water and Power (LADWP) is working to determine the availability of water for Phillips 66 and has been engaging in talks with Phillips 66 to determine options in providing recycled water. LADWP is scheduled to meet with Phillips 66 again in March 2015 to provide an update on the status of the Harbor Refineries Pipeline Project (HRPP) and Advanced Water Purification Facility (AWPF) Expansion.	6,600
Tesoro	Industrial customer located along the Pacific Coast Highway at the easternmost end of HRPP. LADWP is currently working to determine the availability of water for Tesoro and has been engaging in talks with Tesoro to determine options in providing recycled water. LADWP is scheduled to meet with Tesoro again in March 2015 to provide an update on the status of HRPP and AWPF Expansions.	3,500
Harbor Cogen	Industrial customer located along Pier B Street. LADWP is currently working to determine the availability of water for Harbor Cogen.	1,000
Warren E/P	Industrial customer with two locations in the Los Angeles Harbor area. LADWP is currently working to determine the availability of water for Warren E/P.	1,000
Harbor College	Harbor College is an irrigation customer located adjacent to Harbor Park along Figueroa Place. Harbor College is interested in receiving approximately 120 AFY of recycled water. LADWP is currently working to determine the availability of water for Harbor College.	120
TOTAL		24,560

Table 1: Potential Customers and Demand



Legend

- Jacking Locations
- ACTA Jacking
- - - Machado Lake Pipeline Project
- - - Additional Proposed
- Harbor Refineries Pipeline Project
- Harbor RW System (Existing)
- Dominguez Gap Barrier Project

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**Harbor Recycled Water Distribution System:
Existing and Proposed**

How Recycled Water Fits into LADWP's Overall Local Supply Strategy and the Reduction of Potable Water Use

Water Recycling

The Los Angeles City's (City) goal is to reuse 59,000 acre-feet per year (AFY) of recycled water by 2035, thereby increasing the percentage of recycled water use eightfold. Currently, recycled water is replacing potable water previously used for non-potable purposes, such as outdoor irrigation and industrial uses. Recycled water can also be used to replenish groundwater basins. Increasing recycled water use will reduce the need for purchased imported water and diversify the City's water supply portfolio. To achieve this goal, the City has taken the following steps:

- **Recycled Water Master Planning (RWMP)** - In 2012, LADWP in partnership with LASAN completed RWMP documents over the course of three years. RWMP documents will help guide near-term recycled water planning through 2035. RWMP documents include an evaluation of recycling alternatives that integrate two strategies to increase recycling: groundwater replenishment and non-potable reuse. Non-potable projects will increase recycled water deliveries for irrigation and industrial customers throughout the City.
- **Recycled Water Outreach** - City developed RWMP documents with input from numerous stakeholders through ongoing outreach activities, which began in 2009. Input was received from the Recycled Water Advisory Group (RWAG), Recycled Water Forums for the general public, elected official briefings, outreach to kindergarten through grade 12 students, and presentations to neighborhood councils and community groups. RWAG is made up of approximately 60 stakeholders, representing neighborhood councils, environmental groups, business organizations, civic groups, and other interests. They provide the City with input and ideas related to water recycling. RWAG has participated in a series of workshops, facility tours, and update sessions, and continues to provide insightful feedback to the City as projects are implemented.
- **Advanced Treatment Pilot Studies** - A critically important part of the groundwater replenishment planning process was to operate a pilot project consisting of different purification technologies using the actual treated wastewater from the City's Donald C. Tillman Water Reclamation Plant (D.C. Tillman Plant). Purpose of the pilot project was to test alternative source waters available at the D.C. Tillman Plant and evaluate the effectiveness of advanced water purification technologies on those specific waters. Testing results demonstrated that the proposed advanced water purification processes provide exceptional water quality that is safe for groundwater replenishment. Additional pilot testing on alternative technologies is planned to improve performance and efficiency of the advanced water purification facility. Pilot will be completed by 2017.

- Groundwater Replenishment Environmental Documentation - Environmental documentation for the Groundwater Replenishment Project was initiated in 2012 and is expected to be completed by 2016.
- Groundwater Replenishment Project - An advanced water purification facility is proposed to be constructed at D.C. Tillman Plant to produce highly-purified water to replenish the San Fernando Groundwater Basin (SFB). Facility is scheduled to be operational by 2022.
- One Water LA – LADWP and LASAN are jointly committed to developing the “One Water Los Angeles Plan” (One Water LA) in the management of our limited water resources. One Water LA will integrate the approach to manage groundwater, drinking water, stormwater, recycled water, and wastewater as a single resource that should be captured, conserved, and reused. A major task of One Water LA is to determine the required recycled water treatment components at each wastewater treatment facility and the opportunities to maximize recycled water production. This analysis will identify the additional treatment facilities required so that sufficient recycled water is produced to meet the City’s goals for recycled water use.

Through One Water LA, City departments are coordinating to explore further opportunities for recycled water use, recycled water production, and water conservation in City operations and/or facilities. The interdepartmental and interagency One Water LA Steering Committee has provided a forum for departments to communicate and collaborate to maximize multi-benefits from water-related projects and, in turn, offset potable water use. To date, 12 City departments and 9 regional entities are participating in the Steering Committee.

Water Conservation

Conservation has had a tremendous impact in reducing the City’s water use and is a cornerstone of the City’s water resource management philosophy. Cumulative annual hardware savings since the inception of LADWP’s conservation programs total more than 110,800 AFY. Additionally, the City’s 2010 Urban Water Management Plan (UWMP) describes an approach to meeting California’s “20 percent reduction by 2020” mandate and includes a goal of reducing overall potable water demand by an additional 64,368 AFY by 2035. To reach these ambitious goals, LADWP has focused its efforts in several key areas: education/outreach, local regulations, and customer rebates/incentives for water efficient devices.

Highlights from the list of LADWP’s numerous water conservation accomplishments are as follows:

- Ultra-Low-Flush (ULF) Toilet Replacement Program and High Efficiency Toilet (HET) Rebate Program - over 1,400,000 ULF and HET toilets installed in the City, resulting in an estimated water savings of over 48,000 AFY (15.8 billion gallons/year).

- High Efficiency Washer Rebate Program - purchase and installation of over 102,000 high efficiency washing machines that save water and energy.
- Free-of-charge distribution of water-saving bathroom and kitchen faucet aerators and shower heads - over 400,000 aerators and 1.8 million showerheads being installed.
- LADWP's 100-percent volumetric tiered rate structure providing financial incentives to all customers for efficient water use since 1993.
- Water Meter Replacement Program - over 202,800 meters out of 660,400. Program provides customers with greater accuracy in metering water use and a higher degree of accountability for water that is delivered by the City's distribution system.
- LADWP invested in the City of Los Angeles Department of Recreation and Parks Efficiency Program, which also includes some financing provided by a grant from the Department of Water Resources (DWR).
- Additional DWR grants awarded to LADWP for providing weather-based irrigation landscape controllers for our commercial and industrial customers.
- Technical Assistance Programs (TAP) for business and industry created to provide incentives for retrofitting water-intensive industrial equipment with high efficiency devices. A large effort is currently being expended using TAP to increase water-efficiency of commercial cooling towers and expand the program for small business participation.
- California Friendly Landscape Incentive Program expanded to provide \$3.75 per square-foot for removal of turf and replacement with California-friendly, low-water-using plants, mulch, permeable hardscapes and/or artificial grass. To date, the Residential and Commercial California Friendly Landscape Incentive Programs have replaced over 11 million square feet of turf, saving about 370 million gallons of water.

LADWP also initiated a Water Conservation Potential Study (Study) in June 2014 to explore new ways for the City to promote water conservation. Study will determine the impact of previous and current water conservation programs across all customer sectors; identify sectors that still have potential for additional conservation under current programs and strategies; and investigate new and emerging water conserving technologies. Study results are estimated to be available in December 2015 and reflected in 2015 UWPM. Results will allow LADWP to accurately project conservation potential, plan for further water conservation during the next 25 years, and will assist with long-term water supply planning.

Stormwater Capture

The City's goal is to increase groundwater recharge by building, expanding and improving stormwater spreading basins, retrofitting large stormwater capture/flood control dams, and completing other large-scale projects through cooperative partnerships with the Los Angeles County Flood Control District (LACFCD) and other agencies.

The City is part of a complex multi-jurisdictional region. As such, implementing effective local stormwater capture projects involves a collaborative effort among several agencies, including LADWP, LASAN, and LACFCD, and U.S. Army Corps of Engineers to protect LA's rivers and oceans. Stormwater capture projects also increase stormwater capture to augment groundwater supply, improve water quality in rivers and streams, decrease flooding, provide additional open space, passive recreational facilities, enhance habitat, and remove pollutants such as bacteria, oil, grease, trash, sediments, and metals from the street.

LADWP is moving forward with several stormwater capture projects under the guidance of the Stormwater Capture Master Plan (SCMP) with the long-term goal of achieving increased groundwater pumping in SFB. According to the Upper Los Angeles River Area Watermaster Report, the average annual groundwater recharge from centralized facilities into SFB was 27,033 AFY. SCMP has identified the potential to increase stormwater capture to enable an additional 26,000 AFY of groundwater recharge to increase the average annual recharge into SFB to 53,033 AFY by 2035. Distributed stormwater capture projects also target 10,000 AFY of additional water conservation from capture and reuse solutions, such as rain barrels, cisterns, and other smaller projects.

Stormwater Capture Master Plan (SCMP)

In July 2013, LADWP initiated development of a Stormwater Capture Master Plan (SCMP) in partnership with MWD and other local government and non-government agencies. SCMP will provide a framework for evaluating future stormwater capture projects and policies, providing project evaluation criteria to maximize the benefit from future stormwater projects. SCMP will also recommend a number of future projects and programs that will be beneficial additions to the City's current stormwater capture project portfolio.

Public outreach will be an integral part of the SCMP development process and will include involvement of key technical personnel, regional stakeholders, and the general public. SCMP is scheduled for completion in mid-2015. MWD has provided 50 percent grant funding for the SCMP through its Foundational Actions Funding Program.

Stormwater Capture Projects

The City's stormwater capture projects are divided into two classifying categories: centralized projects and distributed projects. Centralized projects are large-scale projects designed to facilitate groundwater recharge through spreading basins. Centralized projects have operated intake systems and recharge water released by existing reservoirs. Distributed projects are smaller scale projects collecting stormwater runoff from local neighborhoods, private and public facilities, and residences. Distributed projects do not have operated intake systems.

Examples of large-scale centralized stormwater projects that were recently completed, currently in progress, or expected to be in construction within the next few years are provided below:

- Big Tujunga SFB Groundwater Enhancement Project – Completed in 2012. Project scope included the retrofit of the Big Tujunga Dam to meet state seismic and spillway requirements and increase the reservoir's storage capacity. Project increased regional annual average stormwater capture capacity by 4,500 AFY.
- Hansen Spreading Grounds Enhancement Project – Completed in 2013. Project deepened the spreading basins, increased their storage capacity, replaced existing diversion structure with a new diversion structure, and added remote automation of the operating structures. Project increased annual average stormwater recharge capacity by 2,100 AFY.
- Tujunga Spreading Grounds Enhancement Project – Proposes to deepen the spreading basins, increase their storage capacity, replace existing diversion structure with two diversion structures, and add remote automation of the operating structures. Project will increase storage capacity to 790 acre-feet (AF) from its current level of 100 AF. Project is expected to increase the annual average stormwater capture and recharge capacity volume from 8,000 AFY to an estimated 16,000 AFY.
- Pacoima Spreading Grounds Enhancement Project – Proposes to deepen the spreading basins, increase their storage capacity, replace existing diversion structure, and add remote automation of the operating structures. Storage capacity will be increased from 530 to 1,197 AF by deepening and combining basins. Project is expected to increase annual average stormwater capture and recharge by 10,500 AFY.
- Lopez Spreading Grounds Enhancement Project – Proposes to expand and deepen the five shallow spreading basins that would increase storage capacity from 24 AF to a total of 73 AF and is expected to increase annual average stormwater capture and recharge capacity by 500 AFY.

- Branford Spreading Basin Project – Most of the water tributary to the spreading basin is urban runoff from Branford Street Channel. Average annual recharge for the facility is approximately 551 AFY. Project is expected to increase annual average stormwater capture and recharge capacity by 590 AFY.
- Rory M. Shaw Wetlands Park Project – Consists of constructing stormwater capture and treatment facilities within the bounds of a 46-acre site formerly used as a gravel pit. Project is expected to increase average stormwater capture and recharge capacity by 590 AFY.

Examples of neighborhood and residential distributed stormwater recharge projects that are complete or currently in construction are provided as follows:

- Elmer Avenue Neighborhood Green Street/Elmer Paseo Green Alley Stormwater Infiltration Projects – Project scope for Elmer Avenue Green Street included installing stormwater underground retention infiltration system under the street, vegetated swales, and rain garden in the parkway and private property. Scope for Elmer Paseo Green Alley included installing underground retention infiltration system and vegetated swales to increase stormwater capture. Combined projects are completed and have increased regional annual average stormwater capture by 40 AFY.

Woodman Avenue Multi-Beneficial Stormwater Capture Project – Will help recharge SFB, improve water quality, and alleviate local flooding. Project captures surface runoff from approximately 80 acres that currently runs along street gutters to storm drains through the Tujunga Wash and the Los Angeles River and into the ocean.

- North Hollywood Alley Retrofit BMP Demonstration Project – Retrofit three alleyway segments for a total of 775 feet of alley improvements in the San Fernando Valley. Improvements created pervious surfaces in the drainage lines of the alleys to allow for stormwater infiltrating where it falls. Alleyway projects will demonstrate the ability to infiltrate stormwater nearer its origin, which will help to recharge SFB, improve water quality in the Los Angeles River, and reduce flooding.
- Garvanza Park Stormwater Capture Use and Infiltration Project – Included installing a stormwater pretreatment system, infiltration gallery, and retention system for use at Garvanza Park. Project is completed and has increased regional annual average stormwater capture by 51 AFY.
- Rain Barrel Distribution Program – Harvests rainwater at homes and businesses to use for irrigation, portable non-potable uses, and groundwater recharge. Pilot projects were implemented in Mar Vista and Valley areas. Pilot project provided over 900 rain barrels and gardens to home owners in the City and was so

successful, it can now be implemented Citywide. Citywide implementation is expected to capture over 10,000 AFY.

- Rain Barrels Rebate – Provides a rebate to encourage customers to collect and re-use rainwater from gutters and downspouts for lawns and gardens to offset potable water usage outdoors and minimize the amount of water flowing into storm drains, sewer systems, and local waterways. Plants and microbes prefer rainwater because it is naturally “soft” and free of chlorine, fluoride, and other chemicals. Rebates are currently \$100 per barrel. The minimum size is 50 gallons, with a maximum of two rain barrels per home.
- Distributed Recharge Efforts – Across the San Fernando Valley, urban stormwater runoff from impervious surfaces enters the storm drain system and eventually flows into the ocean. LADWP is exploring partnerships, projects, and programs that promote infiltration of rainfall runoff close to its point of origin. Several partnerships that LADWP continues to develop are with LASAN, LACFCD, MWD, Los Angeles Unified School District, TreePeople, Council for Watershed Health, Los Angeles Beautification Team, and The River Project. Projects and programs being developed include facility retrofits, neighborhood retrofits, and local recharge projects, such as along medians, rain gardens, power line easements, and parkways.

Further information regarding the City’s stormwater management initiatives to augment local water supplies is available at www.ladwp.com/stormwater, www.lacitysan.org, and www.lastormwater.org.

Groundwater Remediation

Restoring use of the City’s local groundwater basins is critical to facilitate the success of local water supply development. This would increase the resiliency of the City’s water supplies during dry periods. Recycled water, stormwater, and excess imported water can be stored in SFB to augment existing water supplies. However, expanded remediation of SFB is a prerequisite to storage of these sources of water, as it will restore LADWP’s ability to pump and serve all available groundwater from SFB to its customers. To date, about half of the pumping wells in SFB have been shut down due to contamination. Without comprehensive groundwater remediation, the City will lose the ability to use this valuable local resource within the next decade. LADWP is undertaking the following actions to achieve this goal:

- Work with Regulatory Agencies and Governmental Officials – LADWP will continue to work with and encourage the U.S. Environmental Protection Agency to develop a long-term, comprehensive solution for existing and emerging contamination issues in SFB. LADWP will also continue to work with the Los Angeles Regional Water Quality Control Board and the California Department of Toxic Substances Control to find and hold polluters accountable for cleaning up their contamination of SFB.

- Groundwater System Improvement Study (GSIS) – In February 2009, LADWP began a six-year Groundwater System Improvement Study in SFB. GSIS will provide vital information to evaluate the groundwater quality in SFB and recommend treatment options to remediate the groundwater basin. As part of GSIS, LADWP has collected samples from 97 wells (including 26 new monitoring wells recently installed within SFB). LADWP is currently in the early stages of developing Groundwater Basin Remediation Facilities to address the contamination. GSIS is expected to be complete in 2015. Anticipated in-service date for the Remediation Facilities is 2021 to 2023.
- Wellhead Treatment – In May 2010, LADWP completed installation for two wells in the Tujunga Wellfield to remediate contaminants, which have impaired use of this wellfield. LADWP is currently considering alternatives that will optimize the remediation in this local area of SFB near the Tujunga Wellfield.

Citywide Water Conservation Efforts

In addition to the water conservation accomplishments listed above in the City's Local Water Supply Strategy, the City has been implementing and enforcing Phase II of the Ordinance since 2009. As a result, LADWP customers have achieved reductions in total water use of over 16 percent since the prior dry period of 2009. Through continued implementation of Phase II, the City will remain in compliance with requirements of California State Water Resources Control Board's new emergency regulation for statewide urban water conservation discussed previously.

Phase II prohibits wasteful uses and restricts outdoor landscape irrigation. Prohibited wasteful water uses and practices include the following:

- Water leaks left unattended.
- Outdoor irrigation between the hours of 9:00 a.m. to 4:00 p.m.
- Outdoor irrigation resulting in water flow leaving the property.
- Outdoor irrigation during rain events.
- Car washing with a hose, unless an automatic shut-off device is attached.
- Water served to customers in eating establishments, unless requested.
- Outdoor irrigation with non-conserving nozzle sprinkler systems for more than one 8 minute cycle per watering day.
- Outdoor irrigation with conserving nozzle sprinkler systems for more than two 15-minute cycles per watering day.
- Large landscape irrigation systems without automatic shutoff rain sensors.
- Washing paved surfaces (sidewalks, walkways, driveways, or parking areas) unless using an LADWP-approved water conserving spray cleaning device.
- Water for decorative fountains, ponds, or lakes unless the water is part of a recirculating system.

- Installation of single-pass cooling systems in buildings requesting new water service.
- Installation of non-recirculating systems in new commercial laundry facilities.
- Installation of non-recirculating systems in new conveyor car washes.
- Daily towel and linen service, unless requested by hotel and motel guests.

Phase II also limits landscape irrigation to eight minutes per station and bans landscape irrigation on days other than Monday, Wednesday, or Friday for odd-numbered street addresses and Tuesday, Thursday, or Sunday for even-numbered street addresses. To ensure customers are aware of and follow the Ordinance, LADWP has ramped up active enforcement of Phase II restrictions, with a primary focus on educating customers on prohibited uses and outdoor watering restrictions. Citations are given to customers that continue to waste water after LADWP has reached out to them. Under enforcement, failure to comply is subject to penalties, which can range from a written warning for a first violation to monetary fines and water service restrictions or shutoff for continued non-compliance. LADWP has increased Ordinance enforcement staffing to six staff members (four full-time and two part-time) and has the ability to increase to nine personnel if needed through assistance from other LADWP groups. The enforcement team is called the Water Conservation Response Unit, or the "Water CRU." To increase visibility and promote water conservation, Water CRU staff drives LADWP vehicles that are wrapped with informative water conservation messaging.

15-0018
Related Council File
08-2697

MOTION

ENERGY & ENVIRONMENT

In 2008, the Department of Water and Power (DWP) reported to the Council regarding the status of the Harbor Refineries Pipeline Project (HRPP; CF# 08-2697). The purpose of the HRPP was to construct the necessary infrastructure to produce and deliver recycled water to various industrial/commercial customers in the Los Angeles Harbor area (CF# 08-2697); and thereby reduce potable water use.

At the time, the DWP reported that it was developing the environmental documentation for the HRPP and that it would begin construction of the pipeline by the end of 2009. The DWP indicated that recycled water would be available to potential customers in the coming years; and that it would help to offset approximately 9,300 acre-feet per year of potable water demands.

The DWP stated that it was in discussions with multiple potential customers in the Harbor area regarding the use of recycled water. It met with representatives of ConocoPhillips Refinery, Tesoro Refinery, Valero Refinery, Air Products and Chemicals and other entities. The DWP planned to discuss and pursue long-term agreements with interested commercial customers regarding the HRPP.

In addition, the DWP reported that it was engaged in a partnership with the Bureau of Sanitation (BOS) regarding the expansion of the Advanced Water Purification Facility (AWPF) at the Terminal Island Water Reclamation Plant (TIWRP). The facility delivers up to 5 million gallons per day of recycled water through micro-filtration and reverse osmosis. Future expansion of the AWPF would increase the delivery of recycled water to 12.5 million gallons per day to Machado Lake, Harbor Generating Station and other users.


The state and region have been experiencing extreme drought conditions for the past several years. The limited snowpack and rainfall level have impacted the City's water supply and has resulted in increased purchases of imported water. In October 2014, the Mayor issued an Executive Directive calling for a reduction in potable water use by 20% by 2017; and the creation of an integrated water strategy that increases local water supplies.

The DWP and the BOS's Recycled Water Master Plan and the Urban Water Management Plan are critical pieces that will help the City meet its drought challenges. Given that, the DWP and the BOS should report on their water conservation efforts as well as the current status of the HRPP and the AWPF expansion; and how these projects fit in to the City's overall local water supply strategy and the reduction of potable water use. In this manner, the City may effectively meet the needs of its residents.

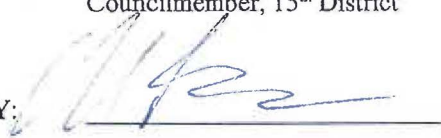
I THEREFORE MOVE that the Department of Water and Power and the Bureau of Sanitation be requested/instructed to report to the Council in 30 days on their water supply efforts, and in particular the current status of recycled water projects - the Harbor Refineries Pipeline Project (HRPP) and the Advanced Water Purification Facility (AWPF) expansion; and how these projects fit into the City's overall local water supply strategy and the reduction of potable water use.



PRESENTED BY:


JOE BUSCAINO
Councilmember, 15th District

SECONDED BY:



ORIGINAL

The City Council
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If you have any questions or if further information is required for LADWP, please contact Marcie L. Edwards at (213) 367-1338, or Ms. Winifred J. Yancy, Director of Intergovernmental Affairs and Community Relations, at (213) 367-0025. If further information is required for LASAN, please contact Mr. Enrique C. Zaldivar at (213) 485-2210, or Ms. Marisela Reyes, Government Affairs, at (213) 485-2979.


GZ:jy



Attachments

c/att: Councilmember Felipe Fuentes, Chair, Energy and Environment Committee
Councilmember Bob Blumenfield, Vice Chair, Energy and Environment Committee
Councilmember Mike Bonin
Councilmember Joe Buscaino
Councilmember Jose Huizar
Councilmember Paul Koretz
Councilmember Tom LaBonge

Mr. Adam R. Lid, Legislative Assistant

Mr. Enrique C. Zaldivar, LASAN
Ms. Marisela Reyes, LASAN

Ms. Winifred J. Yancy 

bc/att: Marcie L. Edwards
Martin L. Adams 
Susan Rowghani 
William T. Van Wagoner
David R. Pettijohn
Mario Acevedo
Traci J. Minamide, LASAN
Roshanak Aflaki, LASAN
Mark Starr, LASAN
Wing Tam, LASAN