



THE CITY OF SAN DIEGO

Report to the City Council

DATE ISSUED: July 12, 2016 REPORT NO. 16-065
ATTENTION: Honorable Council President Sherri Lightner and Members of the City Council
SUBJECT: Pure Water Program Implementation Update

REFERENCE:

REQUESTED ACTION:

This is an informational item only. No action is required by the Environment Committee.

STAFF RECOMMENDATION:

This is an informational item only.

EXECUTIVE SUMMARY OF ITEM BACKGROUND:

San Diego's imported water supplies face increasing stresses from a variety of sources. As a result, the region's supplies are becoming less reliable and more expensive. These circumstances, and the threat limitation on San Diego's water supplies, have intensified the need for new sources of water. Pure Water San Diego is the City of San Diego's (City) 20-year program to provide a safe, secure and sustainable local drinking water supply for San Diego. Recycled water will be turned into drinkable water through the use of water purification technology. Further, Pure Water's system-wide reuse will significantly reduce flows to the Point Loma Wastewater Treatment Plant (PLWTP) and will make San Diego more water independent. On April 29, 2014, City Council adopted Resolution Number R-308906 supporting the Pure Water Program.

This update on Pure Water's implementation will cover the specific areas of potable reuse regulations, project delivery and design, ongoing research and testing, operator readiness, and public outreach and education.

Program Regulatory Framework Update

Throughout the City's planning and design of the first 30 million-gallons-per-day of Pure Water, the State Water Resources Control Board's Division of Drinking Water (DDW) has been working to finalize regulations for potable reuse through surface water augmentation. DDW is mandated to finalize regulations on or before December 31, 2016. Initial drafts of the regulations required specific reservoir dilution. In mid-2015, DDW and their independent expert panel included various dilution requirements in the draft regulations, allowing a wider range of reservoir options in potable reuse projects. This paved the way for the City to

focus on the North City-to-Miramar project. The Public Utilities Department (PUD) staff have been working closely with DDW to develop a framework and permit a reservoir augmentation project at Miramar Reservoir for Phase I of the Pure Water Program. Subsequent Phases of the Pure Water Program may utilize San Vicente, Murray and/or Otay Reservoirs.

The Draft Program Environmental Impact Report (PEIR) was released for public review on February 10, 2016. The comment period ended on April 11, 2016. Certification of the Final PEIR is anticipated to occur this coming fall.

Project Delivery Update

Preliminary design is complete for all Pure Water Phase 1 projects: Morena Pump Station and Pipelines; North City Water Reclamation Plant (NCWRP) Expansion; North City Advanced Water Purification Facility (NCAWPF); and Conveyance System to Miramar. The Conveyance System to Miramar and NCAWPF will complete 30% final design this summer and fall, respectively. The notices to proceed on the final designs of the Morena Pump Station and Pipelines and NCWRP Expansion will be issued near the end of this year. Design for all projects is scheduled to complete in 2018. A new cogeneration facility to be located at the Metro Biosolids Center is proposed to generate green energy for use by the Pure Water Phase 1 project; a request for statements of qualifications will be issued later this fall.

Research and Testing Update

Approximately \$4.7 million in Proposition 50 and 84 grant funds were utilized to install and test ozone and biological filtration (Biologically Active Carbon (BAC)) at the North City Demonstration Advanced Water Purification Facility (AWPF); these were installed upstream of the original 3-step process that consisted of microfiltration, reverse osmosis (RO), and ultraviolet/advanced oxidation. The key finding is that ozone and BAC significantly increase the effectiveness of the treatment system, to withstand fluctuations in feedwater quality to the AWPF, as well as induced challenges within the AWPF treatment processes itself. Throughout these induced challenges, the AWPF has demonstrated its ability to maintain constant production of Pure Water that met all drinking water standards.

Various tests are also being conducted to optimize Pure Water facility designs. These include testing different treatment chemicals to test for both water quality benefits and potential cost savings. Monitoring equipment is being tested for effectiveness at measuring equipment integrity. For example, chlorine analyzers are critical to making sure chlorine levels in the water entering the RO treatment step are safely below limits to avoid damage to the RO membranes. The chemicals and analyzers that perform best at maintaining water quality and managing costs will be selected for full-scale implementation.

Operator Readiness Update

Operations management staff are building training curricula for preparing City operators to run the future NCAWPF, based on knowledge and experience gained at the Demonstration facility. Parallel to this, NCWRP operator shifts have been adjusted to allow time for NCWRP staff to shadow research consultant operators at the Demonstration AWPF. Shadowing

experts provides an opportunity for City operators to learn how to operate the different process equipment, as well as understand the instrumentation and monitoring.

PUD is also among the agencies participating in an effort led by the Cal-Nevada Section of the American Waterworks Association (AWWA) to develop operator certification requirements for advanced water purification facilities. DDW staff are engaged in AWWA's efforts as well. Requirements will entail both training and hands-on operating experience. AWWA plans to complete a job analysis this fall, which will then inform training and experience needs. AWWA's work on this topic will provide a benchmark for the City to measure City operator readiness.

Point Loma Permit Update

The Point Loma Modified National Pollutant Discharge Elimination System (NPDES) Permit expired on July 31, 2015. In compliance with regulatory requirements a renewal application was submitted to the U.S. Environmental Protection Agency and the Regional Water Quality Control Board in January 2015. Upon receipt of the application the regulators administratively continued the present permit until they are able to finalize action on the renewal. The application is currently under review by the regulatory agencies. A tentative decision on the renewal request, which will initiate a public hearing process for final determination, is expected by mid-year 2017.

Public Outreach and Awards

Total number of attendees at tours of the Demonstration AWWPF and speaking engagements has reached about 23,000, with those pledging support for the program exceeding 2,800.

Since January 2015, more than 23 one-on-one meetings have been held with leaders of various multicultural groups and organizations within the Latino, Asian and African-American communities to inform them about Pure Water. Tours of the Demonstration AWWPF were provided to multicultural groups including the San Diego Chinese Women's Association, Broadway Heights Community Council and San Diego Society African American Alumni Association. Informational booths were available at 12 community events (since January 2015) such as the D6 Night Market, Imperial Avenue Street Festival, Linda Vista Multicultural Fair, and Juneteenth Celebration, to engage members of multicultural communities. Informational materials are made available in Spanish and Vietnamese.

Pure Water partnered with the University of San Diego's Global Communication Class for the second year in a row, to create communication tools and engage students in Pure Water. At the high school level, nearly 100 students from the San Diego Unified School District attended Pure Water Media Days at the NCAWWPF; they were challenged to create a dynamic news package about the program to share with their schools. A Pure Water lesson plan was developed in partnership with Project SWELL (Stewardship: Water Education for Lifelong Leadership) for fifth grade "Water in San Diego" science curriculum.

PUD has been actively working with the local medical community to provide information about and seek support of the San Diego Pure Water Program. Recently, City officials had a productive meeting with the County of San Diego's Health and Human Services leadership to discuss potable reuse. This initial discussion was productive and has led to follow-on meetings and tours of the Pure Water facility for County officials.

Additionally, PUD continues to collaborate with other water agencies in the United States that are studying, implementing and/or operating potable reuse projects. This effort allows public outreach staff to share and learn techniques and strategies to promote maximum customer engagement and support of potable reuse projects.

Recent Pure Water awards include the 2015 U.S. Water Prize and the University of San Diego 2015 Innovation in Community Engagement Award. Pure Water was also selected from water reuse projects around the globe for the 2016 Global Water Award for Water Reuse Project of the Year; this award honors the project that "represents the most significant advancement in terms of water reuse."

CITY STRATEGIC PLAN GOAL(S)/OBJECTIVE(S):

Goal #3: Create and sustain a resilient and economically prosperous City
Objective #2: Increase water independence

FISCAL CONSIDERATIONS:

N/A

EQUAL OPPORTUNITY CONTRACTING INFORMATION (if applicable):

N/A

PREVIOUS COUNCIL and/or COMMITTEE ACTIONS:

On April 29, 2014, City Council adopted a resolution in support of the Pure Water Program. On July 23, 2014, PUD presented a Pure Water San Diego Public Outreach Program Update to the Committee on the Environment. On November 18, 2014, City Council approved the Mayor's proposal to submit the renewal application for a modified NPDES Permit for the PLWTP and requested authorization to enter into a Cooperative Agreement between the City, San Diego Coastkeeper, Surfrider Foundation San Diego Chapter, Coastal Environmental Rights Foundation, and San Diego Audubon Society in support of the Point Loma NPDES Permit and Pure Water. On December 9, 2014, City Council approved award of a 5-year, \$30,000,000 Agreement with Montgomery Watson Harza Americas, Inc., for As-Needed Engineering Technical Services to support PUD in implementation of the Pure Water Program. On March 25, 2015, PUD provided an update on the Pure Water Program to the Committee on the Environment. On January 12, 2016, City Council approved the award of a 5-year, \$21,188,977 agreement with HDR, Inc. for the North City Conveyance System.

COMMUNITY PARTICIPATION AND OUTREACH EFFORTS:

In April 2014, the City formed the Pure Water Working Group to provide diverse viewpoints and input on the City's efforts to provide a safe, secure and local drinking water supply. The group includes representatives from community planning groups, businesses, City Council District Offices, environmental groups, and water coalitions. The group has been meeting on a regular basis since May 2014, and PUD continues to provide them with regular program updates.

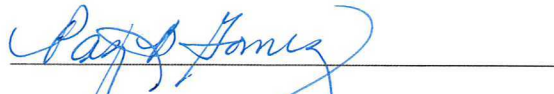
Outreach activities initiated in 2010 continue. Total number of attendees at tours of the Demonstration AWWPF and speaking engagements has reached about 23,000, with those pledging support for the program exceeding 2,800.

KEY STAKEHOLDERS AND PROJECTED IMPACTS:

The stakeholders in this Program include San Diego Coastkeeper, San Diego Chapter of the Surfrider Foundation, San Diego Audubon Society, Environmental Rights Foundation, Metro Wastewater Participating Agencies, the Independent Rates Oversight Committee, Pure Water Working Group, and Water and Wastewater Ratepayers. The Stakeholders continue to play an important role in development of the Pure Water Program.



For Halla Razak
Director, Public Utilities Department



Paz Gomez, P.E., CEM, GBE
Deputy Chief Operating Officer
Infrastructure/Public Works