



Los Angeles
Department of
Water & Power

RESOLUTION NO. _____

BOARD LETTER APPROVAL

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Senior Assistant General Manager
Water System

JANISSE QUIÑONES
Chief Executive Officer and Chief Engineer

DATE: February 18, 2025

SUBJECT: Funding, Design, Construction, and Operation of a Pilot Testing Facility Utilizing Membrane Bioreactor Technology to Produce Nitrified-Denitrified Tertiary Recycled Water at the Hyperion Water Reclamation Plant

SUMMARY

This Memorandum of Agreement (Agreement) provides up to \$14.5 million to the Los Angeles Department of Public Works Bureau of Sanitation and Environment (LASAN) for continuation of the Hyperion Membrane Bioreactor (MBR) Pilot Study (Pilot Study). The Agreement duration will from the date of execution until testing is complete, but no later than December 31, 2027.

This Agreement is a continuation of the MBR Pilot Study initiated by Agreement No. WR-17-3001, between LADWP, LASAN and West Basin Municipal Water District (WBMWD), executed on January 18, 2018, and expired on December 31, 2021. Continuing the MBR Pilot Study is in the mutual best interests of LADWP and LASAN. Data gained from the Pilot Study will establish the basis for design and regulatory compliance for full-scale conversion of Hyperion Water Reclamation Plant (HWRP) existing secondary treatment process to MBR technology while providing regulatory validation for potable reuse application.

City Council approval is required in accordance with Charter Section 373.

RECOMMENDATION

It is recommended that the Board of Water and Power Commissioners adopt the attached Resolution authorizing execution of Agreement between LASAN and LADWP.

ALTERNATIVES CONSIDERED

The MBR Pilot Study is essential for the successful implementation of the Pure Water Los Angeles Program. This pilot project is the preferred approach because it will demonstrate compliance with Division of Drinking Water (DDW) water quality standards, inform best practices for MBR design and operation, facilitate necessary regulatory approvals, and mitigate the critical challenge of demonstrating pathogen removal to DDW, a key requirement for regulatory acceptance.

Three alternatives were considered:

- **Do Nothing:** This option would not provide adequate treatment nor pathogen removal through HWRP's existing secondary treatment process for subsequent potable reuse applications, nor would it provide space required to implement construction of treatment facilities related to potable reuse treatment application at HWRP. High purity oxygen activated sludge is the existing wastewater treatment technology used at HWRP. This source water has been shown to be problematic for advanced treatment, by WBMWD.
- **Conventional Activated Sludge (CAS) secondary treatment:** This option provides adequate secondary treatment and pathogen removal for subsequent potable reuse treatment applications; however, there were concerns the treatment efficacy operated too close to regulatory compliance limits. Additionally, this treatment would not provide space required to implement construction of treatment facilities related to potable reuse and has a higher life cycled cost than the MBR alternative.
- **MBR Treatment:** This preferred option provides adequate secondary treatment and pathogen removal for subsequent potable reuse treatment applications. MBR technology is also a more cost effective and compact technology when compared with CAS or the do-nothing alternative.

FINANCIAL INFORMATION

Under Agreement WR-17-3001, total project cost was estimated at \$13.2 million based on preliminary estimates developed in 2017 by LASAN and its consultants. As of November 2023, the project cost estimate was increased to \$30 million. Cost increases were attributed to:

- Supply chain disruptions experienced during the COVID-19 Pandemic;
- Scope changes to the testing and monitoring plan, as recommended by the independent advisory panel; and
- Increases in cost for facility equipment purchases and installation: estimates for these line items increased from \$8 million in 2017 to \$21 million, as of final construction completion in 2023.

Under Agreement WR-17-3001, costs were to be shared equally among LASAN, LADWP, and WBMWD for an expected contribution of \$4.4 million per agency. To date, LADWP has contributed \$3.3 million towards the Pilot Study and WBMWD contributed \$1 million. Due to the cost increases, schedule delays and other related concerns, WBMWD has elected not to provide additional contributions toward the project.

Per the new Agreement, LADWP and LASAN will equally contribute an additional \$11.2 million for a total contribution of \$14.5 million each, with WBMWD's contribution remaining at \$1 million.

BACKGROUND

In 2018, parties entered into Agreement WR-17-3001 to conduct a pilot study of MBR technology and gather data for potential development of 70-million-gallon-per-day (MGD) MBR facility at the HWRP. The mutual benefit of this project would improve the quality of recycled water supplied to WBMWD, and in-turn the quality of recycled water WBMWD supplies to various end uses including the LADWP recycled water system in Playa Vista.

In 2019, City of Los Angeles announced its intention to develop full use of recycled water from HWRP for a sustainable drinking water supply. As Direct Potable Reuse regulations were in development, the City's objectives for the MBR Pilot Study began to pivot towards development of a full-scale MBR facility, necessitating a complete conversion of existing secondary treatment processes at HWRP.

With the 2020 emergence of the COVID-19 pandemic, the MBR Pilot Study was impacted by supply chain disruptions and cost escalations. Agreement No. WR-17-300, which expired on December 31, 2021, encountered scope changes, cost increases, and schedule delays. WBMWD elected not to provide additional contributions toward the project.

LASAN and LADWP remain committed to the Pilot Study, which completed construction in 2023. If approved, this new Agreement authorizes LADWP to contribute up to an additional \$11.2 million for a total contribution of \$14.5 million towards the Pilot Study. LASAN would provide an equal contribution, with contributions from WBMWD remaining at \$1 million.

It is recognized that MBR technology will enhance treatment and improve quality of recycled water supplies at HWRP. This will provide regional benefits to the City and its public agency partners as a potentially cost-effective treatment option for HWRP. The continuation of the Pilot Study will evaluate the applicability of MBR to the Pure Water Los Angeles Program.

In accordance with the Mayor's Executive Directive No. 4, the City Administrative Officer's (CAO) Report was approved on November 18, 2024.

ENVIRONMENTAL DETERMINATION

Determine item is exempt pursuant to California Environmental Quality Act (CEQA) Guidelines Article 19, Section 15306, Class 6. In accordance with this section, activities which consist of basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource are exempt. These may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded. A thorough analysis under CEQA will occur for the full-scale project for which the pilot testing is developing.

ATTACHMENTS

- Resolution
- Agreement
- CAO Report