THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

- Board of Directors
  Engineering and Operations Committee

2/11/2020 Board Meeting

8-2

Subject

Award a contract to Suez Treatment Solutions, Inc., in an amount not-to-exceed $4,100,000 for procurement of ozone generator dielectrics and power supply units at the Joseph Jensen Water Treatment Plant; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

This action awards a procurement contract for power supply units and dielectrics to rehabilitate the ozone generation system at the Joseph Jensen Water Treatment Plant (Jensen plant).

Ozone is used as the primary disinfectant at Metropolitan's five water treatment plants. Reliable operation of the ozone system is essential for Metropolitan to meet drinking water regulations and to comply with its current operating permit. Recent inspections of the Jensen plant's ozone system revealed that some of its critical components show signs of deterioration and need to be replaced or refurbished to maintain system reliability.

Details

Background

The Jensen plant was placed into service in 1972 with an initial capacity of 400 million gallons per day (mgd) and expanded to its current capacity of 750 mgd in the 1990s. Located in Granada Hills, the Jensen plant treats water from the West Branch of the State Water Project (SWP) and delivers it to Metropolitan's Central Pool and to exclusive service areas on the west side of the distribution system.

Metropolitan employs ozone as the primary disinfectant at each of its water treatment plants to substantially reduce the formation of disinfection by-products (DBP) for compliance with the U. S. Environmental Protection Agency's Disinfectants/DBP rule. Ozone pre-disinfection also controls taste-and-odor-causing compounds and algal toxins. The ozonation process involves numerous equipment items and support systems, including ozone generators, high-voltage power supply units (PSU), cooling system, ozone contactors, destruct system, programmable logic controllers, an oxygen feed gas system, and safety and water quality monitoring equipment. Ozone generation at the Jensen plant was initiated in 2005.

In December 2017, detailed inspections of Jensen's five ozone generator/PSU systems were conducted and revealed that some of the critical electrical components of the systems are showing signs of deterioration. The assessment determined that all Jensen PSUs require replacement of high-voltage transformers, and internal electrical devices; and each unit's cooling system requires refurbishment. In addition, a significant number of generator glass dielectrics have failed and must be replaced with newer ceramic dielectrics as the glass units are no longer available. While the ozone system is suitable for operation in the short-term, upgrades and refurbishment to four units are needed to maintain the plant's long-term operational reliability.

Staff has developed a phased approach to upgrade the ozone generation system at the Jensen plant. The work will be prioritized to first address the most critical components of the system. The first stage of this project will replace units that have reached the end of their service life, including four PSUs and four sets of generator dielectrics. Due to the long lead-time for the fabrication of the PSUs and dielectrics, staff recommends awarding the procurement contract for this equipment at this time.

Stage 2 of the project will evaluate the physical condition and performance of the ozone subsystems, including oxygen feed gas, nitrogen, generator cooling water, and diffusion systems. This assessment will identify the capacity and reliability of the Jensen ozone system in treating the SWP water and will determine if any additional improvements are required for the existing components.

Staff is in the process of assessing the merits of reducing the maximum treatment capacity of the Jensen plant. At the plant's current rated treatment capacity of 750 mgd, five ozone generators are required to be available. Staff anticipates that at least four of the five ozone generators would be needed under the reduced capacity scenarios that are currently being evaluated. As a result of this ongoing evaluation, staff recommends awarding a procurement contract for PSUs and dielectrics for four generators at this time. Staff will return to the Board if authorization to award a contract to install the procured equipment or to make additional repairs is required.

In October 2018, the Board appropriated funds and authorized the General Manager to proceed with work on all capital projects identified in the Capital Investment Plan (CIP), subject to any limits on the General Manager's authority and CEQA requirements. This project has been reviewed with Metropolitan's CIP prioritization criteria and was approved by Metropolitan's CIP evaluation team to be included in the Treatment Plant Reliability Program.

In accordance with the October 2018 action, the General Manager will authorize staff to proceed with the rehabilitation of the Jensen ozone PSU and critical components, pending board award of the procurement contract described below. Based on the current CIP expenditure forecast, funds for the work to be performed pursuant to the subject contracts during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Years 2018/19 and 2019/20 (Appropriation No. 15509). Funds required for work performed after fiscal year 2019/20 will be appropriated after the adoption of the next biennial budget.

Alternatives Considered

The existing Jensen ozone generators and PSUs were manufactured by Suez Treatment Solutions, Inc. (formerly Ozonia North America) and were placed into operation in 2005. As part of the assessment of the Jensen Ozone System Rehabilitation Project, staff evaluated the option of replacing the ozone PSUs through a competitive bidding process. This approach would allow multiple ozone equipment suppliers to compete for the replacement of the Jensen ozone PSUs. However, the existing PSUs were specifically designed for, and matched to, the Jensen ozone generators. Therefore, if a vendor other than Suez were to be the successful low bidder for the replacement of the PSUs, the ozone generators, the major component of the ozone system, would likely need to be replaced in order to ensure compatibility of the PSU and generator combination. This approach, while holding the potential to stimulate industry competition in the bidding for the replacement equipment, would have increased the cost of this project significantly. Staff also examined the potential to replace components within each of the PSUs, instead of replacing the entire PSU. Since the current design of the Suez PSUs has changed significantly since Metropolitan purchased the original units 15 years ago, extensive redesign and fieldwork would be required to adapt the new parts to the existing units. This approach would also lead to a mix of old and new technologies installed in the PSU cabinets. Staff determined that this approach would not provide a substantive improvement to the overall reliability of the Jensen ozone system.

Jensen Ozone PSU and Critical Components Upgrades – Equipment Procurement

Due to the unique nature of Metropolitan's generation ozone system described in the previous section above, staff recommends procuring the ozone PSUs and dielectrics from Suez Treatment Solutions, Inc., the original equipment manufacturer.

Per Section 8140(1)(d) of Metropolitan's Administrative Code, the General Manager's designee proposing the contract, Metropolitan's Manager/Chief Engineer of Engineering Services, has determined that conducting a new competitive procurement process for the needed equipment would not produce an advantage for the reasons set forth above. Therefore, the Manager/Chief Engineer of Engineering Services certifies that the recommended contract to furnish the new PSUs and dielectrics is exempt from competitive procurement.

A total of $5.1 million is required for the Stage 1 project. In addition to the equipment procurement contract amount, other funds to be allocated include $228,000 for fabrication inspection and functional testing; $120,000 for technical support by CDM Smith, including submittals review, responding to requests for information, and preparation of record drawings; $280,000 for contract administration and project management; and $372,000 for

remaining budget. CDM Smith will provide the above-mentioned technical support under an existing on-call agreement. Staff will return to the Board for the award of a construction contract if such board authorization is required.

Attachment 1 provides the allocation of the required funds. The total estimated cost to complete the rehabilitation of Jensen ozone PSUs and dielectrics, including the amount appropriated to date and funds allocated for the work described in this action, is approximately $6.7 million. Approximately $104,000 has been expended on this project to date.

Award of Procurement Contract (Suez Treatment Solutions, Inc.)

Specifications No. 1965 for the procurement of four PSUs and four sets of dielectrics by the original equipment manufacturer, Suez Treatment Solutions, Inc., was completed on December 5, 2019. Staff has negotiated a price with Suez Treatment Solutions for the new equipment in an amount not-to-exceed $4,100,000. During the negotiation of the contract terms with Suez, staff contacted other users of the Suez ozone equipment that had recently been upgraded. The contract price is consistent with the unit price paid for similar equipment for recent projects in other parts of the country. This amount includes freight, start-up, associated field service assistance, and testing of the PSUs and dielectrics during equipment installation by future contractor, as well as equipment warranty for two years from the date of commissioning or three years from the date of delivery, whichever occurs first. In addition, Metropolitan will receive a five-year warranty for the PSU converters and transformers, and a ten-year warranty for the dielectrics.

This action awards a contract to Suez Treatment Solutions, Inc., in an amount not-to-exceed $4,100,000 to procure four PSUs and four sets of dielectrics for the Jensen ozonation system. The contract amount includes all sales and use taxes imposed by the state of California. Due to the specialized nature of the work, no Small Business Enterprise participation level was established for the contract. As a procurement contract, there are no subcontracting opportunities.

Summary

This action awards a procurement contract to Suez Treatment Solutions, Inc., in an amount not-to-exceed $4,100,000 to rehabilitate the ozone generation system at the Jensen plant. See **Attachment 1** for the Allocation of Funds, and **Attachment 2** for the Location Map.

Project Milestone

June 2021 – Delivery of ozone PSUs and dielectrics

Policy

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

Metropolitan Water District Administrative Code Section 8140: Competitive Procurement

Metropolitan Water District Administrative Code Section 11104: Delegation of Responsibilities

By Minute Item 51353, dated October 9, 2018, the Board appropriated a total of $290 million for projects identified in the Capital Investment Plan for Fiscal Years 2018/19 and 2019/20.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The overall activities involve the funding, design, minor alterations, and replacement of existing public facilities with negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under Class 1 and Class 2 Categorical Exemptions (Sections 15301 and 15302 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Award a contract to Suez Treatment Solutions Inc., in an amount not-to-exceed $4,100,000 to procure PSUs and dielectrics for Jensen's ozone generation system.

Fiscal Impact: Expenditure of $5.1 million in capital funds. Approximately $500,000 will be incurred in the current fiscal year and has been previously authorized. The remaining funds from this action and the future construction costs will be accounted for and appropriated under the next biennial budget.
Business Analysis: This option will enhance the operational reliability of the ozone generation system at the Jensen plant.

Option #2

Do not proceed with this project at this time.
Fiscal Impact: None
Business Analysis: This option will forgo an opportunity to improve the operational reliability of the Jensen plant.

Staff Recommendation

Option #1

1/27/2020
John V. Bednarski *Date*
Manager/Chief Engineer
Engineering Services

1/28/2020
Jeffrey Kightlinger *Date*
General Manager

Attachment 1 – Allocation of Funds

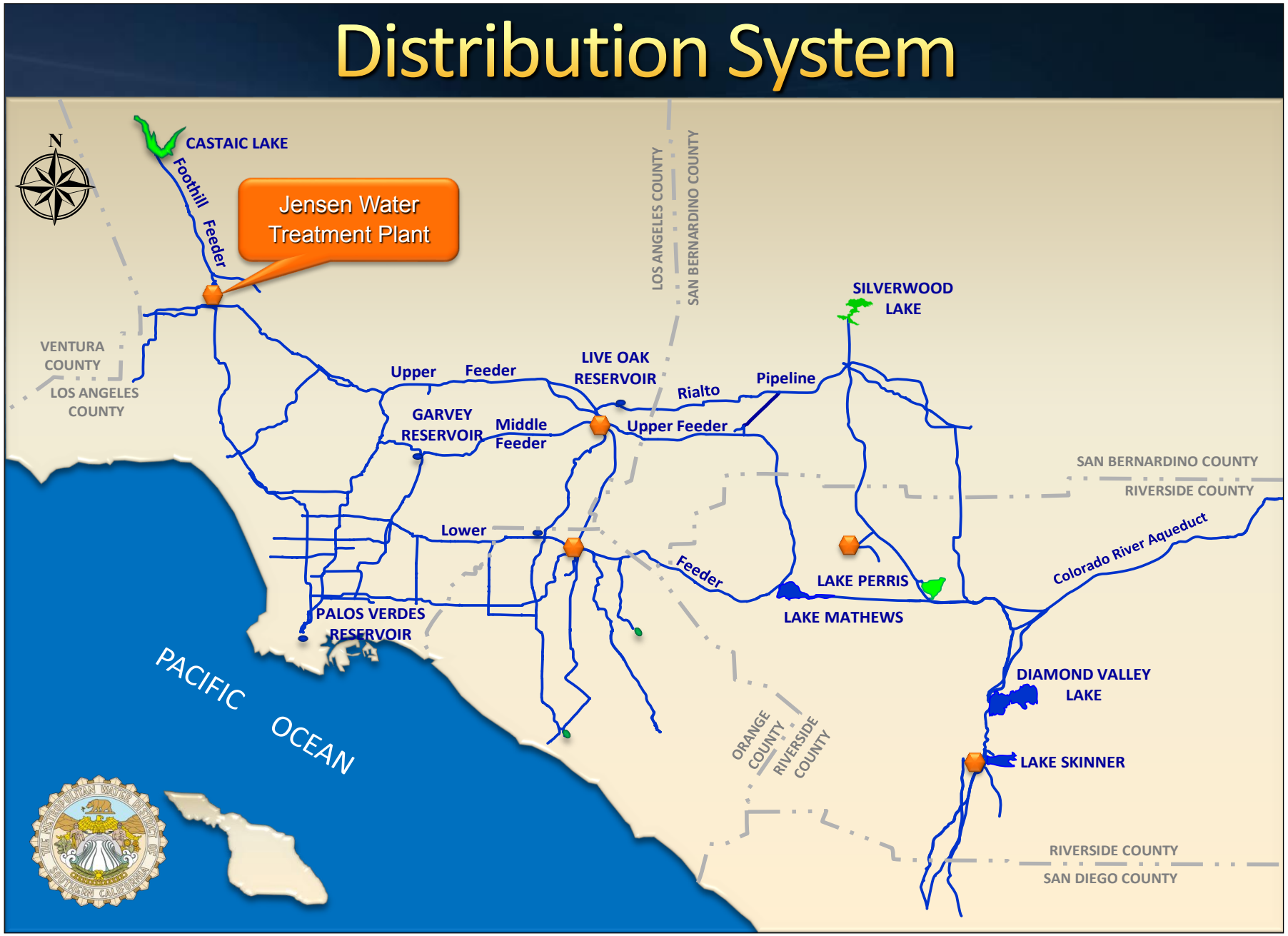
Attachment 2 – Location Map

Ref# es12670553

Allocation of Funds for Jensen Ozone PSU & Critical Components Rehabilitation

	Current Board Action (Jan. 2020)
Labor	
Studies & Investigations	$ -
Final Design	-
Owner Costs (Program mgmt., contract admin.)	218,000
Submittals Review & Record Drwgs.	62,000
Construction Inspection & Support	140,000
Metropolitan Force Construction	66,000
Materials & Supplies	
Suez Treatment Solutions, Inc.	4,100,000
Incidental Expenses	22,000
Professional/Technical Services	-
CDM Smith	120,000
Right-of-Way	-
Equipment Use	-
Contract	-
Remaining Budget	372,000
Total	**$ 5,100,000**

The total amount expended to date on the Jensen Ozone PSU & Critical Components Rehabilitation project is approximately $50,000. The total estimated cost to complete this project, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is $6.7 milion.


Distribution System
N
CASTAIC LAKE
Foothill Feeder
Jensen Water Treatment Plant
VENTURA COUNTY
LOS ANGELES COUNTY
LOS ANGELES COUNTY
SAN BERNARDINO COUNTY
SILVERWOOD LAKE
LIVE OAK RESERVOIR
Upper Feeder
Rialto Pipeline
GARVEY RESERVOIR
Middle Feeder
Upper Feeder
SAN BERNARDINO COUNTY
RIVERSIDE COUNTY
Lower
Feeder
Colorado River Aqueduct
LAKE PERRIS
LAKE MATHEWS
PALOS VERDES RESERVOIR
PACIFIC OCEAN
DIAMOND VALLEY LAKE
ORANGE COUNTY
RIVERSIDE COUNTY
LAKE SKINNER
RIVERSIDE COUNTY
SAN DIEGO COUNTY