



- Board of Directors
Engineering and Operations Committee

8/17/2021 Board Meeting

7-2

Subject

Award a \$492,440 procurement contract to Royal Industrial Solutions for equipment to upgrade the ozone control system at the Henry J. Mills Water Treatment Plant and authorize an agreement with Suez Treatment Solutions, Inc. in an amount not to exceed \$430,000 for specialized technical assistance to support the upgrade; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

Ozone is used as the primary disinfectant at Metropolitan's five water treatment plants. Reliable operation of the ozone system at the Henry J. Mills Water Treatment Plant (Mills plant) is essential for Metropolitan to meet federal and state drinking water regulations and to comply with the plant's current operating permit. The existing ozone control system equipment at the Mills plant is outdated and is no longer supported by the manufacturer. The equipment needs to be replaced, and its control software requires updating to maintain reliable operation of the ozone system.

This action awards a procurement contract to replace outdated ozone control equipment and authorizes a new professional services agreement to update the software for the ozone control system at the Mills plant.

Details

Background

The Mills plant was placed into service in 1978 and currently has a capacity of 220 million gallons per day (mgd). The plant treats water from the State Water Project and delivers it to the Eastern and Western Municipal Water Districts of Riverside County.

Metropolitan employs ozone as the primary disinfectant at each of its 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, and to control taste-and-odor-causing compounds and algal toxins. The combination of these benefits allows Metropolitan to successfully treat any State Water Project supplies. The ozonation process involves numerous equipment items and support systems, such as liquid oxygen storage tanks, ozone generators, high-voltage power supply units, cooling system, ozone contactors, destruct system, and safety and water quality monitoring equipment. Operational control of these systems is performed by a series of networked programmable logic controllers (PLCs) that interact with the plant's Supervisory Control and Data Acquisition system.

Metropolitan's first three ozone systems at the Mills, Jensen, and Skinner plants were originally equipped with a type of PLC introduced to the commercial market in 1988. Computer hardware from that era is now outdated, and the PLC manufacturer no longer produces or supports this equipment. Going forward, inventories of spare parts will no longer be maintained by suppliers. The ozone control system equipment for the Jensen and Skinner plants were replaced in 2018 and 2021, respectively. Replacement of the control system at the Mills plant is the subject of this action. These upgrades include the procurement and installation of new control equipment, including PLCs and communication hardware. Additionally, existing process control software must be revised and updated to operate the new equipment.

In April 2020, the Board appropriated funds and authorized the General Manager to initiate or 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. Based on the current CIP expenditure forecast, funds for the work to be performed pursuant to the subject contract and agreement during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Years 2020/21 and 2021/22 (Appropriation No. 15517).

Mills Ozone Control System Upgrades – Equipment Procurement & Installation

The Mills ozonation control system consists of PLCs, software, and communication equipment that includes communication switches, input/output modules, and data communication cables. The system of equipment and software programming allows staff to efficiently and effectively control the operation of the plant's ozone generators, ozone contactors, and off-gas destruct system. This project will replace outdated PLC units and communication switches/modules for the ozone control system at the Mills plant. The project will also update the existing ozone control programming/software and its associated documentation to ensure that they are consistent with the newly installed equipment.

The Mills ozone control system upgrades require nine new PLCs and related communication hardware with spares. The PLCs and associated electronic components will be furnished by Royal Industrial Solutions through a procurement contract described below. Suez Treatment Solutions, Inc., under an agreement described below, will install updated ozone control software into the new PLCs and assist Metropolitan staff with the start-up and testing of the updated ozone control system. Metropolitan staff will perform final design, install the new PLCs and communication equipment, relocate electrical wiring outside the PLC cabinets as needed, perform software review, conduct system integration tests, and certify control system functionality following equipment tests.

A total of \$2,093,000 is required to perform this work. In addition to the amount of the procurement contract described below, other funds to be allocated include \$430,000 for specialized technical support by Suez Treatment Solutions, Inc. as described below and \$158,000 for communication equipment and materials. Allocated funds for Metropolitan staff activities include \$183,000 for final design, software review, and programming; \$383,000 for Metropolitan force activities, including equipment installation, start-up, and testing; \$158,000 for contract administration, environmental support, and project management. Allocated funds also include \$288,560 for remaining budget.

Attachment 1 provides the allocation of the required funds. The total estimated cost to complete the upgrades of the Mills ozone control system, including the amount appropriated to date and funds allocated for the work described in this action, is approximately \$2.111 million.

Award of Procurement Contract (Royal Industrial Solutions)

PLCs are used throughout Metropolitan's treatment and distribution system to provide localized process control, alarms, and monitoring. Prior to 2009, Metropolitan had over 100 PLC installations consisting of 18 different models by ten different manufacturers. The variety of PLC makes and models created challenges for technical support and coordination, spare parts, and training, as well as increased operational risks. To standardize PLCs throughout Metropolitan, Allen-Bradley was established as the sole brand for Metropolitan's PLCs in 2009. Royal Industrial Solutions is the sole authorized supplier of Allen-Bradley equipment for Riverside County. Pursuant to Section 8140(2)(e) of Metropolitan's Administrative Code, the Chief Operating Officer, as the General Manager's designee, has determined that the "upgrades, enhancements and additions to hardware and enhancements or additions to the software will not be as compatible as equipment or software from the original manufacturer/developer(s)." Staff recommends the use of a sole-source procurement of this equipment from Royal Industrial Solutions.

This action awards a \$492,440 contract to Royal Industrial Solutions to supply new ozonation system PLCs and associated components for the Mills plant. This amount is consistent with Metropolitan's previous purchases of Allen-Bradley equipment. As a procurement contract, there are no subcontracting opportunities.

Specialized Technical Support (Suez Treatment Solutions, Inc.) – New Agreement

The predecessor firm of Suez Treatment Solutions, Inc., Ozonia North America, was previously selected through competitive bidding to furnish the ozone generation equipment for each of Metropolitan's five treatment plants, and to provide training, start-up, and testing services. In 2016, Suez Treatment Solutions, Inc. purchased Ozonia

and now owns the proprietary knowledge of its ozone and control system equipment. Additionally, Suez has exclusive experience with the software programming, testing, and integration of large-capacity ozone generation equipment at Metropolitan's treatment plants. The selection of Suez Treatment Solutions, Inc. to modify, upgrade, and install the Mills ozone control system software into the new PLCs, and to provide start-up assistance of the new equipment represents the most cost-effective and efficient means to complete this specialized work. Per Section 8140(1)(d) of Metropolitan's Administrative Code, conducting a new competitive procurement process for the needed services would not produce an advantage, and as a result, the Chief Operating Officer, as the General Manager's designee, has certified that the contract is exempt from competitive procurement. Staff, therefore, recommends a sole-source procurement of these services from Suez Treatment Solutions, Inc.

This action authorizes a new agreement with Suez Treatment Solutions, Inc. for a not-to-exceed total of \$430,000, to modify, upgrade, and install the control system software, and to provide start-up assistance for the new ozone control system at the Mills plant. Due to the unique nature of these services, no Small Business Enterprise participation level was established. There are no subconsultants planned for this agreement.

Alternatives Considered

Early in the project development phase, staff considered two alternatives to improve the reliability and resiliency of the ozone control system at the Mills plant. The first alternative involved obtaining a license from Suez Treatment Solutions to upgrade/modify the ozone control system software. This alternative was not selected because the software was copyrighted, and Metropolitan staff does not have the same level of knowledge as the original developer. In the second alternative, Metropolitan would hire Suez Treatment Solutions, Inc. through a consulting agreement to update the software for the new PLC hardware to be installed by Metropolitan. This approach does not require Metropolitan to obtain programming rights or to have detailed knowledge of the software. Consequently, staff recommends the upgrade of the Mills plant ozone control system equipment software be conducted via a consulting agreement with Suez Treatment Solutions, Inc.

Summary

This action awards a \$492,440 procurement contract to Royal Industrial Solutions and authorizes an agreement with Suez Treatment Solutions, Inc. for a not-to-exceed total of \$430,000 to upgrade the ozone system at the Mills plant. See **Attachment 1** for the Allocation of Funds and **Attachment 2** for the Location Map.

Project Milestone

December 2022 – Completion of ozone control system upgrades

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 51962, dated April 2020, the Board appropriated a total of \$245 million for projects identified in the Capital Investment Plan for Fiscal Years 2020/21 and 2021/22.

By Minute Item 50671, dated December 13, 2016, the Board authorized upgrades to the ozone control system at the Jensen Plant.

By Minute Item 51786, dated November 5, 2019, the Board authorized upgrades to the ozone control system at the Skinner Plant.

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 proposed action involves operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving

negligible or no expansion of existing or former use and no possibility of significantly impacting the physical environment. In addition, the proposed action includes the replacement and reconstruction of existing utility systems and facilities where the new structure will be located on the same site as the structure replaced and will have the same purpose and capacity as the structure replaced. 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

- a. Award a \$492,440 procurement contract to Royal Industrial Solutions for the ozone control system equipment for the Mills plant; and
- b. Authorize an agreement with Suez Treatment Solutions, Inc. for a not-to-exceed total of \$430,000 for specialized technical support of the upgrade.

Fiscal Impact: \$2.093 million will be funded from capital funds. Approximately \$1.580 million will be incurred in the current biennium and have been previously authorized. The remaining \$.513 funds for this action will be accounted for and appropriated under the next biennial budget.

Business Analysis: This option will enhance the continued operational reliability of the Mills ozonation system.

Option #2

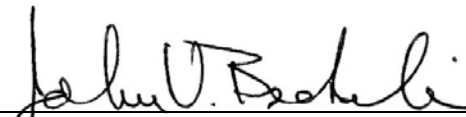
Do not proceed with this project at this time.

Fiscal Impact: None

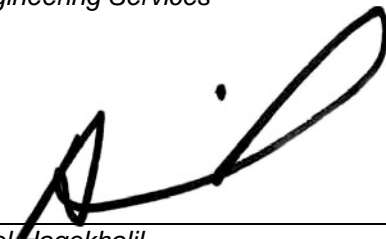
Business Analysis This option will forgo an opportunity to enhance the operational reliability of the ozone system at the Mills plant. Ozone PLC and communication equipment would be replaced individually as they fail. An extended outage of the ozone disinfection system could occur if critical components of the control system were to fail and replacement parts could not be procured.

Staff Recommendation

Option #1



John V. Bednarski
Manager/Chief Engineer
Engineering Services
7/22/2021
Date



Adel Hagekhalil
General Manager
8/3/2021
Date

Attachment 1 – Allocation of Funds

Attachment 2 – Location Map

Ref# es12682404

Allocation of Funds for Mills Ozone Control System Upgrades

	Current Board Action (Aug. 2021)
Labor	
Studies & Investigations	\$ -
Final Design	183,000
Owner Costs (Program mgmt., envir. monitoring)	158,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	383,000
Materials & Supplies	
Royal Industrial Solutions	492,440
Communication Equipment & Materials	158,000
Incidental Expenses	-
Professional/Technical Services	
Suez Treatment Solutions, Inc.	430,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Remaining Budget	288,560
Total	\$ 2,093,000

The total amount expended to date to replace the Mills Ozonation Control System Upgrade is approximately \$18,000. The total estimated cost to complete the Mills Ozonation Control System Upgrade, including the amount appropriated to date and funds allocated for the work described in this action, is \$2.111 million. No future funding requests are currently anticipated for this project.

