THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

- Board of Directors
  Engineering and Operations Committee

11/5/2019 Board Meeting

7-2

Subject

Award $476,000 equipment procurement contract to Royal Industrial Solutions for upgrade of the ozone control system at the Robert A. Skinner Water Treatment Plant, and authorize an agreement with Suez Treatment Solutions, Inc., in an amount not to exceed $320,000 for specialized technical support during the upgrade; the General Manager has determined that the proposed actions are exempt or otherwise not subject to CEQA

Executive Summary

This action awards a procurement contract to replace outdated ozone control equipment, and authorizes a new agreement to upgrade the software for the ozone control system at the Robert A. Skinner Water Treatment Plant (Skinner plant).

Ozone is used as the primary disinfectant at Metropolitan's five water treatment plants. Reliable operation of the ozone system at the Skinner 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 The existing control system equipment for the ozone system at the Skinner plant is outdated and is no longer supported by the manufacturer. The equipment needs replacing and its control software updated to maintain reliable operation of the ozone system.

Details

Background

The Skinner plant commenced service in 1976 and currently has a capacity of 350 million gallons per day (mgd). It delivers a blend of waters from the Colorado River and State Water Project (SWP) to Eastern Municipal Water District, Western Municipal Water District of Riverside County, and the San Diego County Water Authority. The plant is located north of Temecula in 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 blend of SWP and Colorado River Aqueduct 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 for the Jensen plant was replaced in 2018, and replacement of the control system at the Skinner plant is the subject of this action. Staff plans to replace the control system at the Mills plant at a future date. These upgrades include the procurement and installation of new control equipment, including PLCs, as well as new programming for the ozonation system.

In October 2018, 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.

In accordance with the October 2018 action, the General Manager will authorize staff to proceed with the upgrades to the Skinner ozone control system, pending Board award of the procurement contract and authorization of the agreement described below. 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 2018/19 and 2019/20 (Appropriation No. 15509).

Skinner Ozone Control System Upgrades – Equipment Procurement & Installation

The Skinner ozone control system consists of PLCs, software, and communication equipment that includes communication switches, input/output modules, and data communication cables. The system controls and supervises operation of the ozone generators, ozone contactors, and off-gas destruct system. This project will replace outdated PLC units and communication modules for the ozone control system at the Skinner plant and will update the existing control software and its associated documentation.

The Skinner ozone control system upgrades require 12 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 staff with the start-up and testing of the updated ozone control system. Metropolitan staff will perform final design, relocate electrical wiring outside the PLC cabinets, conduct system integration tests, and certify control system functionality following equipment tests.

A total of $1,455,000 is required to perform this work. In addition to the amount of the procurement contract described below, other funds to be allocated include: $126,000 for final design, programming; $145,000 for Metropolitan force activities, including equipment installation, start-up, and testing; $77,000 for communication equipment; $320,000 for specialized technical support by Suez Treatment Solutions, Inc. as described below; $115,000 for contract administration, environmental support, and project management; and $196,000 for remaining budget.

Attachment 1 provides the allocation of the required funds. The total estimated cost to complete the upgrades of the Skinner ozone control system, including the amount appropriated to date and funds allocated for the work described in this action, is approximately $1.455 million. Approximately $30,000 has been expended on this project to date.

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 creates challenges for support, coordination, spare parts, and training, as well as increased operational risks. In order 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 General Manager has determined that the "upgrades, enhancement 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.

This action awards a $476,000 contract to Royal Industrial Solutions to supply new ozonation system PLCs and associated components for the Skinner 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

Suez Treatment Solutions' predecessor firm, Ozonia North America, was previously selected through competitive bidding to furnish the ozone generation equipment for each of Metropolitan's 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 programing, 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 Skinner 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, staff recommends that these services be provided by Suez Treatment Solutions, Inc. Staff recommends a sole source procurement of these services.

This action authorizes a new agreement with Suez Treatment Solutions, Inc. for a not-to-exceed total of $320,000, to modify, upgrade, and install the control system software, and to provide start-up assistance for the new ozone control system at the Skinner 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.

Summary

This action awards a $476,000 procurement contract to Royal Industrial Solutions and authorizes an agreement with Suez Treatment Solutions, Inc. for a not-to-exceed total of $320,000 to upgrade the ozone system at the Skinner plant. See **Attachment 1** for the Allocation of Funds and **Attachment 2** for the Location Map.

Project Milestone

March 2020 – 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 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.

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

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Action No. 1 – Award a procurement contract with Royal Industrial Solutions to upgrade equipment at the Skinner Plant

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed actions involve the funding, 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 structures and facilities where the new structure will be located on the same site and will have the same purpose and capacity as the structure to be replaced. Accordingly, the proposed action qualifies under Class 1 and Class 2 Categorical Exemptions (Sections 15301 and 15302 of the State CEQA Guidelines).

Action No. 2 – Authorize a new agreement with Suez Treatment Solutions, Inc.

The proposed actions are categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed actions involve the funding, 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 actions include the replacement and reconstruction of existing structures and facilities where the new structure will be located on the same site and as the structure replaced and will have the same purpose and capacity as the structure replaced. Further, the proposed actions 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. 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. Accordingly, the proposed action qualifies under Class 1, Class 2, and Class 6 Categorical Exemptions (Sections 15301, 15302, and 15306 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

a. Award $476,000 procurement contract to Royal Industrial Solutions for the ozone control system equipment for the Skinner plant; and
b. Authorize an agreement with Suez Treatment Solutions, Inc. for a not-to-exceed total of $320,000, for specialized technical support of the upgrade.

Fiscal Impact: $1.455 million in capital funds
Business Analysis: This option will enhance the continued operational reliability of the Skinner 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 Skinner 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.

Staff Recommendation

Option #1

10/11/2019
John V. Bednarski *Date*
Manager/Chief Engineer
Engineering Services

10/24/2019
Jeffrey Kightlinger *Date*
General Manager

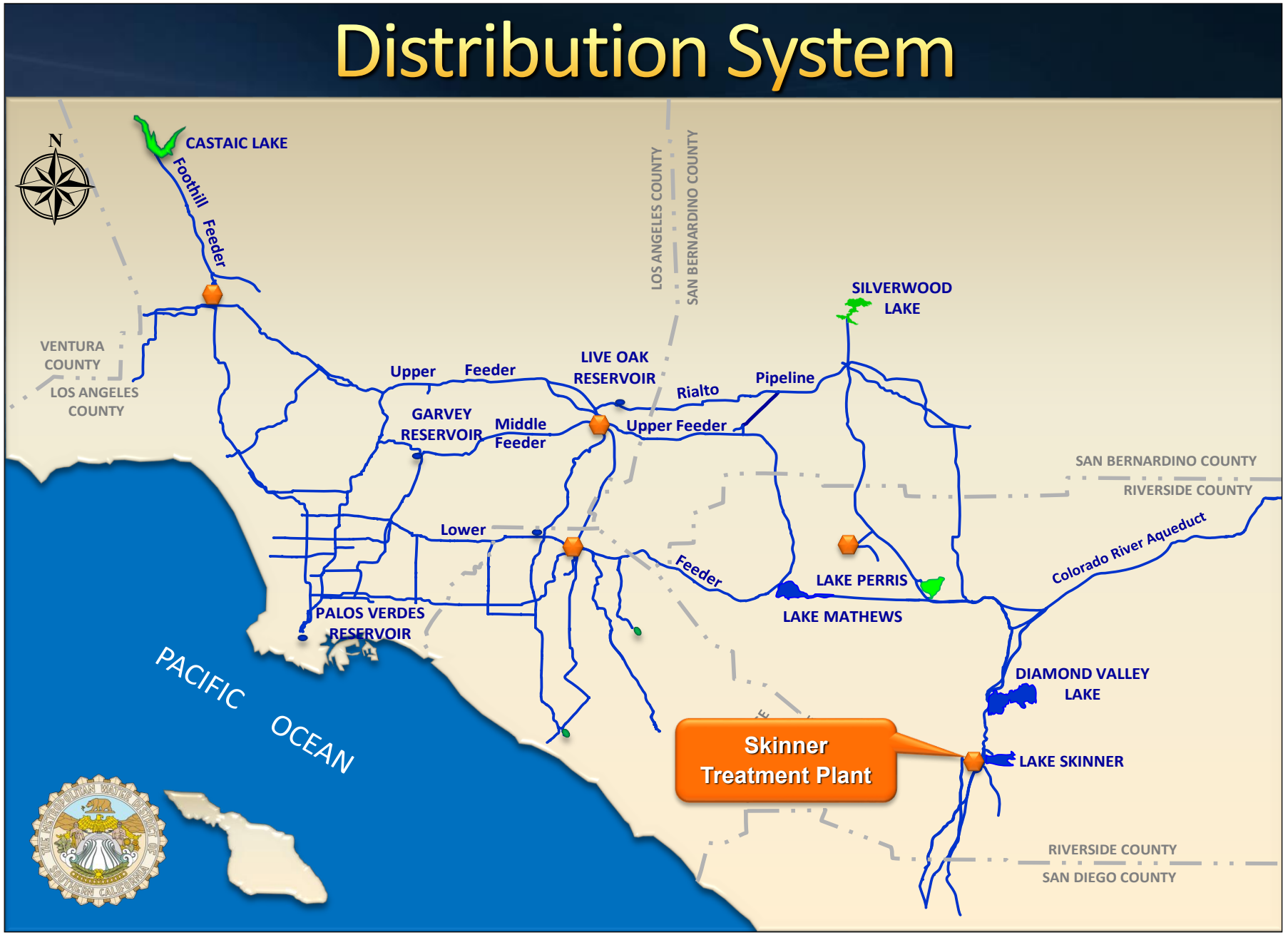
Attachment 1 – Allocation of Funds

Attachment 2 – Location Map

Allocation of Funds for Skinner Ozone Control System Upgrades

	Current Board Action (Nov. 2019)
Labor	
Studies & Investigations	$ -
Final Design	126,000
Owner Costs (Program mgmt., envir. monitoring)	115,000
Submittals Review & Record Drwgs.	-
Construction Inspection & Support	-
Metropolitan Force Construction	145,000
Materials & Supplies	
Royal Industrial Solutions	476,000
Communication Equipment	77,000
Incidental Expenses	-
Professional/Technical Services	-
Suez Treatment Solutions, Inc.	320,000
Right-of-Way	-
Equipment Use	-
Contract	-
Remaining Budget	196,000
Total	**$ 1,455,000**

The total amount expended to date on the Skinner Ozone Control System Upgrades project is approximately $30,000 . 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 $1.455 milion. No future funding requests are currently anticipated for this project.


Distribution System
N
CASTAIC LAKE
Foothill Feeder
VENTURA COUNTY
LOS ANGELES COUNTY
LOS ANGELES COUNTY
SAN BERNARDINO COUNTY
SILVERWOOD LAKE
Upper Feeder
LIVE OAK RESERVOIR
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
Skinner Treatment Plant
LAKE SKINNER
RIVERSIDE COUNTY
SAN DIEGO COUNTY