



- Board of Directors
Engineering and Operations Committee

4/14/2020 Board Meeting

7-1

Subject

Award a \$1,206,535 contract to Wigen Water Technologies for procurement of water treatment equipment for the domestic water systems at the Colorado River Aqueduct pumping plants; the proposed action is in furtherance of a project that was previously determined to be categorically exempt

Executive Summary

This action awards a procurement contract for water treatment equipment for the domestic water systems at the five Colorado River Aqueduct (CRA) pumping plants.

The CRA pumping plants and villages are isolated facilities that rely on local domestic water treatment systems for the supply of potable water. These water treatment systems have been in operation for nearly 28 years. While still operational today, major components of these aging systems are deteriorating, and require frequent repairs and adjustments. Replacement parts are difficult to obtain due to the age of the existing equipment. In order to maintain compliance with drinking water regulations, reduce the frequency of repairs, and maintain reliable operation, the systems need to be replaced.

Details

Background

The CRA is a 242-mile-long conveyance system that transports water from the Colorado River to Lake Mathews. It consists of five pumping plants, 124 miles of tunnels, 63 miles of canals, and 55 miles of conduits, siphons, and reservoirs. The aqueduct was constructed in the late 1930s and was placed into service in 1941. The CRA pumping plants are located in remote areas of Riverside and San Bernardino Counties, where municipal water supplies are not available.

The CRA pumping plants and villages are isolated facilities that rely on local domestic water systems for the supply of potable water. Water from the aqueduct is initially pumped to the on-site domestic water system for treatment to meet potable water standards. The domestic water systems contain water treatment equipment that includes membrane filtration, activated carbon adsorption, and sodium hypochlorite feed systems. Following treatment, the water is then pumped to a storage tank located on the hill above each pump house. From this location, it is then conveyed by gravity through distribution piping to the pump house, guest lodge and kitchen, employee houses, and support buildings. The largest treatment system can process up to 30,000 gallons per day. Metropolitan staff regularly monitors and tests water quality within the domestic water networks in accordance with state Division of Drinking Water requirements.

The existing water treatment systems are early-generation membrane filtration units. While still operational today, they are deteriorating and require frequent repairs and adjustments. Replacement parts are difficult to obtain as the original equipment supplier no longer produces spare parts. The domestic water treatment systems are critical components of the infrastructure that supports the CRA pumping plants. In order to maintain compliance with drinking water regulations, reduce the frequency of repairs, and maintain reliable operation, the systems need to be replaced.

The existing treatment equipment will be replaced with new systems that include strainers, membrane filtration systems, and disinfection equipment. The strainers and membrane filtration systems will be installed at the same

locations as the existing equipment within the pump houses. The new disinfection equipment and existing granulated activated carbon vessels will be relocated to new climate-controlled enclosures adjacent to the pump houses. The water quality monitoring instrumentation and laboratory equipment will also be replaced. The water treatment systems will fully comply with state and federal drinking water regulations, and the planned capacities will be consistent with projections of current and future demands at each plant.

In July 2018, Metropolitan's Board authorized design to replace the domestic water treatment systems at all five pumping plants. Competitive bids have been received for the new water treatment equipment, and final design of the installation contract package is underway. Due to the long lead-time needed to procure these systems, staff recommends awarding the procurement contract for these systems at this time. Staff will return to the Board in 2021 to award a construction contract to install the domestic water treatment systems.

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 CRA Reliability Program.

In accordance with the October 2018 action, the General Manager will authorize staff to proceed with procurement activities for the domestic water treatment systems at each CRA pumping plant, 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.

CRA Domestic Water Treatment Systems Replacement – Procurement

The scope of the procurement contract includes furnishing six water treatment units: one each for the five pumping plants and one spare unit. Each skid-mounted unit includes membrane modules and housing, process pumps, valves, piping, and a programmable logic controller.

A total of \$1,800,000 is required to perform this work. In addition to the amount of the contract, the allocated funds include \$149,000 for factory fabrication inspection and functional testing; \$78,000 for receipt, handling, and storage of equipment delivery at each plant; \$125,000 for submittals review, technical support, and responding to manufacturer requests for information; \$68,000 for contract administration and project management; and \$173,465 for remaining budget.

Attachment 1 provides the allocation of required funds. The total estimated cost to complete the CRA Domestic Water Treatment Systems Replacement, including the amount appropriated to date, funds allocated for the work described in this action, and all future actions is expected to range between \$18 million and \$20 million. Approximately \$1.9 million has been expended on this project to date.

Award of Procurement Contract (Wigen Water Technologies)

Specifications No. 1955 for furnishing six water treatment units for the CRA Domestic Water Treatment Systems was advertised for bids on February 6, 2020. As shown in **Attachment 2**, three bids were received and opened on March 10, 2020. As a procurement contract, there are no subcontracting opportunities.

The bid from Wigen Water Technologies in the amount of \$1,206,535, complies with the requirements of the specifications. This amount includes all sales and use taxes imposed by the State of California. The budgetary estimate for this material, based on a survey of vendors, ranged from \$1.3 million to \$1.7 million.

This action awards a \$1,206,535 procurement contract to Wigen Water Technologies to furnish six membrane filtration systems and appurtenances.

Alternatives Considered

During planning and design of this project, staff considered rehabilitation and upgrading of deteriorating components of the existing skid-mounted water treatment systems. This approach would allow for the continued use of the existing membrane filtration systems. However, this would not address the reduced availability or reliability of membrane modules and other spare parts compatible with the currently installed, obsolete systems.

Additionally, staff evaluated multiple alternative treatment technologies to determine the most cost-effective and reliable solution. The treatment technologies considered included: (1) conventional treatment with granular activated carbon filtration (GAC); (2) polymeric microfiltration (MF) membranes with GAC; (3) ceramic MF membranes with GAC; and (4) nanofiltration membranes. Due to its proven ability to reliably and cost-effectively meet water quality objectives, polymeric MF membranes were selected as the recommended treatment technology to be installed with the new equipment, as described in this board letter.

Summary

This action awards a procurement contract to Wigen Water Technologies, in an amount not-to-exceed \$1,206,535 to replace the domestic water treatment systems at each CRA pumping plant. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Abstract of Bids, and **Attachment 3** for the Location Map.

Project Milestones

January 2021 – Initial delivery of water treatment equipment

March 2021 – Award installation contract

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

By Minute Item 51250, dated July 10, 2018, the Board authorized final design to replace the CRA domestic water systems.

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 in furtherance of a project that was previously determined to be categorically exempt under Classes 1, 2, 3, and 4 (Sections 15301, 15302, 15303, and 15304) of the State CEQA Guidelines on January 12, 2016. With the current board action, there is no substantial change proposed since the original project was first approved in 2016. Hence, the previous environmental documentation in conjunction with the project fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation is necessary for the Board to act on the proposed action.

CEQA determination for Option #2:

None required

Board Options

Option #1

Award a \$1,206,535 contract to Wigen Water Technologies to procure water treatment equipment for CRA Domestic Water Treatment Systems.

Fiscal Impact: Expenditure of \$1.8 million in capital funds. Approximately \$150,000 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 critical infrastructure that supports the efficient operation and reliability of the CRA pumping plants.

Option #2

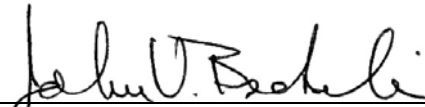
Do not proceed with this project at this time.

Fiscal Impact: None

Business Analysis: This option will forego an opportunity to improve the operational reliability of the domestic water treatment systems, which may lead to costly urgent repairs.

Staff Recommendation

Option #1



John V. Bednarski
Manager/Chief Engineer
Engineering Services

3/19/2020

Date



Jeffrey Kightlinger
General Manager

3/25/2020

Date

Attachment 1 – Allocation of Funds

Attachment 2 – Abstract of Bids

Attachment 3 – Location Map

Ref# es12669215

Allocation of Funds for CRA Domestic Water Treatment Systems Replacement

	Current Board Action (April 2020)	
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Labor		
Studies & Investigations	\$	-
Final Design		-
Owner Costs (Program mgmt., contract administration)		68,000
Submittals Review & Record Drwgs.		125,000
Fabrication Inspection & Support		149,000
Metropolitan Force Construction		53,000
Materials & Supplies		-
Incidental Expenses		25,000
Professional/Technical Services		-
Right-of-Way		-
Equipment Use		-
Contracts		-
Wigen Water Technologies		1,206,535
Remaining Budget		173,465
Total	\$	1,800,000
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The total amount expended to date to replace the domestic water treatment systems at the CRA pumping plants is approximately \$1.9 million. The total estimated cost to complete the CRA domestic water treatment systems replacement, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from \$18 million to \$20 million.

The Metropolitan Water District of Southern California
Abstract of Bids Received on March 10, 2020, at 2:00 P.M.

Specifications No. 1955
Furnishing Membrane Filtration Units for CRA Domestic Water Treatment Systems

The work includes furnishing six membrane filtration systems (three 15-gpm and three 30-gpm units); and associated fittings and accessories.

Estimated Range of Cost: \$1.3 million to \$1.7 million

Bidder and Location	Base Bid Price Total¹	Small Business or Disabled Veteran Business (Y/N)	Regional Business (Y/N)	Bid Price Reduction for SBE/DVBE or RBE²	Total Evaluated Bid Price
Wigen Water Technologies Chaska, MN	\$1,206,535.00	Y	N	(\$12,500)	\$1,194,035.00
Westech Engineering, Inc. Salt Lake City, UT tbd	\$1,694,757.25	N	N	\$0	\$1,694,757.25
DuPont de Nemours, Inc. dba FilmTec Corporation Tewksbury, MA	\$1,892,243.07	N	N	\$0	\$1,892,243.07

¹ Includes sales and use taxes of 7.75 percent imposed by the state of California, which took effect on October 1, 2018.

² For bid evaluation purposes, bidders who qualified as a Small Business Enterprise (SBE) or Disabled Veteran Business Enterprise (DVBE) received a five percent bid-price reduction credit. In addition, bidders who qualified as a Regional Business Enterprise (RBE) received a five percent bid-price reduction credit. The total reduction credit shall not exceed \$25,000.

Location Map

