



● **Board of Directors**  
***Engineering and Operations Committee***

12/11/2018 Board Meeting

---

**8-6**

**Subject**

---

Award \$26,900,000 contract to Michels Pipeline Construction to rehabilitate the circulating water and sump discharge piping systems at each Colorado River Aqueduct pumping plant; and authorize agreement with Marrs Services, Inc. for a not-to-exceed amount of \$5.4 million for specialized construction management and inspection support; the General Manager has determined that the proposed actions are exempt or otherwise not subject to CEQA

**Executive Summary**

---

This action awards a construction contract to rehabilitate circulating water and sump discharge piping systems at Metropolitan's five Colorado River Aqueduct (CRA) pumping plants. The systems include parallel pumps and piping which circulate cooling water and collect drainage water from several sources: return cooling water flows; washwater from plant maintenance activities; used backwash water from the plants' potable water treatment systems; and leakage from the main CRA pumps. This action also authorizes an agreement for specialized construction management and inspection services.

**Timing and Urgency**

The 75-year-old pump house circulating water and sump discharge piping systems have deteriorated and need to be replaced. Failure of the circulating water systems could result in flooding and overheating of the main CRA pumps, while failure of the sump discharge systems could result in overflow of the sump basins and flooding of the CRA pump bays. Such failures could impact water conveyance on the CRA. Staff recommends moving forward to rehabilitate the circulating water and sump discharge piping systems at this time to maintain reliable water deliveries.

This project has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria and is included in the CRA Reliability Program. Funds for this action are available within the appropriation for planned biennial CIP expenditures for fiscal years 2018/19 and 2019/20.

**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, siphons, and reservoirs; 63 miles of canals; and 55 miles of conduits. The aqueduct was constructed in the late 1930s and was placed into service in 1941.

Within the pump house at each of the five CRA pumping plants, there are two main sumps and five auxiliary sumps that collect water leakage from the main CRA pumps, backwash flows from the domestic water treatment system, washwater from plant maintenance activities, and return cooling water after it has been used to cool the main CRA pumps. These flows can at times exceed 2,700 gallons per hour. The sumps are located at the lowest level of each four-level pump house. Each main sump is approximately 9 feet wide, 20 feet long, and 35 feet deep, while each of the auxiliary sumps are approximately 8 feet wide, 10 feet long, and 6 feet deep. The main sump basins are located at either end of each pump house, and the five auxiliary sump basins are located at intermediate locations.

The sump basins contain portions of two separate piping systems: the sump discharge system and circulating water system. Each of these systems includes 16-inch diameter piping, pumps, valves, and couplings. The sump discharge system pumps water from the sump basins back to the CRA or to the pumping plant forebay, depending on the pumping plant. The circulating water system pressurizes water from the pumping plant's 16-foot-diameter inlet pipe, located upstream of the plant, into a closed piping system which passes through the sump basins. This water is delivered to separate storage tanks for the fire protection, potable water, and main pump cooling water systems. The circulating water system is also used to dewater the plant inlet pipe during shutdowns.

The sump discharge systems and circulating water systems were installed in the 1930s. These systems are partially submerged and operate in a humid and corrosive environment. Pipe leaks have become more frequent in recent years, requiring immediate system shutdowns for repair by divers. The circulating water systems are integral to pumping plant operation. Failure of the sump discharge or circulating water systems could result in overflow from the sump basins into the main pump bays, damaging electrical and mechanical equipment and potentially interrupting deliveries from the CRA.

In October 2014, Metropolitan's Board authorized design to rehabilitate the sump collection, discharge, and circulating water equipment and piping systems. Design has been completed, and staff recommends proceeding with construction at this time.

### **Circulating Water and Sump Discharge Piping Systems Rehabilitation at all five CRA pumping plants – Construction**

The scope of the construction contract includes removal and replacement of the existing pumps, actuators, valves, and associated piping at 35 sump basins located within the five CRA pumping plants; replacement of existing platforms, grating, ladders, handrails, and sump covers, including lighting and ventilation; electrical upgrades; and hazardous material handling and disposal. Metropolitan force activities will include: (1) shutdown of portions of sump systems and 480 V power systems; (2) installation of conduits and electrical wiring in the pump plant control rooms; (3) system integration into the Supervisory Control and Data Acquisition system; and (4) return of the sump and 480 V power systems to service.

#### ***Award of Construction Contract (Michels Pipeline Construction)***

Specifications No. 1874 for CRA rehabilitation of the CRA Pumping Plants circulating water and sump discharge piping systems was advertised for bids on September 13, 2018. As shown in **Attachment 1**, four bids were received and opened on November 7, 2018. The low bid from Michels Pipeline Construction in the amount of \$26,900,000 complies with the requirements of the specifications. The other bids ranged from \$28,126,000 to \$36,354,007, while the engineer's estimate was \$28,000,000. For this contract, Metropolitan established a Small Business Enterprise (SBE) participation level of at least 15 percent of the bid amount. Michels Pipeline Construction has committed to meet this level of participation. The subcontractors for this contract are listed in **Attachment 2**.

This action awards a \$26,900,000 contract to Michels Pipeline Construction to rehabilitate the circulating water and sump discharge piping systems at all five CRA pumping plants. A total of \$38 million has been budgeted for this work; besides the amount of the contract, other allocated funds include: \$2,674,000 for construction management and inspection; \$800,000 for specialized construction inspection by Marrs Services, Inc., as described below; \$1,930,000 for Metropolitan force activities as described above; \$1,656,000 for submittal review and record drawings; \$829,000 for contract administration, environmental monitoring, and project management; and \$3,211,000 for remaining budget.

For this project, the anticipated cost of inspection is approximately 12 percent of the total construction cost. Engineering Services' goal for inspection of projects with construction greater than \$3 million is 9 to 12 percent.

The total cost of construction for this project is \$28,830,000, which includes the amount of the contract (\$26,900,000) and Metropolitan force activities (\$1,930,000).

#### **Specialized Inspection Support (Marrs Services, Inc.) – New Agreement**

Request for Qualifications (RFQ) No. 1077 was issued in August 2014 to establish a pool of qualified firms to provide on-site inspection and construction contract administration services for Metropolitan's conveyance, distribution, storage, and treatment facilities. Fifteen firms submitted SOQs, which were then evaluated based on

qualifications, key personnel, experience related to planned projects, past performance, environmental sensitivity, and business outreach. A total of eight firms were prequalified to provide services through this process. All of the eight prequalified firms are eligible to submit proposals on project-specific agreements. Agreements are currently in place with two of the eight prequalified firms, with a combined total of approximately \$12 million in authorized agreements to date.

Over the next several fiscal years, a number of CRA projects have been identified that will require construction management and inspection services beyond the level that can be supported by in-house staff and existing agreements. These projects involve rehabilitation of: (1) electrical systems; (2) instrumentation and controls; (3) mechanical equipment refurbishment; (4) pipelines and valves; and (5) site and erosion protection improvements.

Request For Proposal No. 1189 was issued on August 15, 2018 to all pre-qualified consultants under RFQ No. 1077 to provide construction management and inspection services for CRA projects. Two proposals were received on September 11, 2018. A new on-call agreement is recommended to be awarded at this time to Marris Services, Inc. based on their demonstrated previous experience during the construction of a wide variety of infrastructure rehabilitation projects. For the CRA Circulating Water and Sump Discharge Piping Systems Rehabilitation project, Marris Services will perform selected construction management and inspection services.

This action authorizes an on-call agreement with Marris Services, Inc. in an amount not-to-exceed \$5.4 million for specialized inspection services during construction. The duration of this agreement will be three years, and work assignments will be issued to the consultant through task orders on a project-by-project basis. For this agreement, Metropolitan established an SBE participation level of 25 percent. Marris Services, Inc. has agreed to meet this level of participation. The subconsultants for this agreement are listed in **Attachment 3**.

### **Summary**

This action awards a construction contract to Michels Pipeline Construction for rehabilitation of the circulating water and sump discharge piping systems at all five CRA pumping plants and authorizes an agreement with Marris Services, Inc. for specialized construction management and inspection services. This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the capital expenditure plan for fiscal years 2018/19 and 2019/20. See **Attachment 1** for the Abstract of Bids, **Attachment 2** for the listing of Subcontractors for Low Bidder, **Attachment 3** for the listing of Subconsultants for the Agreement with Marris Services, and **Attachment 4** for the Location Map.

A total of \$38 million is required for this work. No appropriation of funds is required for work planned over fiscal years 2018/19 and 2019/20 as sufficient funds are available within Appropriation No. 15509, the Capital Investment Plan for Fiscal Years 2018/19 and 2019/20.

### ***Project Milestone***

December 2021 – Completion of rehabilitation of the circulating water and sump discharge piping systems at all five CRA pumping plants

### **Policy**

---

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

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 49921, dated October 13, 2014, the Board authorized final design to rehabilitate the sump systems.

### **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**

- a. Award \$26,900,000 contract to Michels Pipeline Construction to rehabilitate the circulating water and sump discharge piping systems at all five CRA pumping plants; and
- b. Authorize agreement with Marris Services, Inc. with a not-to-exceed amount of \$5.4 million, for specialized inspection support.

**Fiscal Impact:** \$38 million in capital funds

**Business Analysis:** This project will enhance reliability of the CRA pumping plants.

**Option #2**

Do not proceed with the project at this time.

**Fiscal Impact:** None

**Business Analysis:** This option may lead to more extensive and costly repairs in the future.

**Staff Recommendation**

---

Option #1

  
 \_\_\_\_\_ 11/26/2018  
 John V. Bednarski Date  
 Manager/Chief Engineer  
 Engineering Services

  
 \_\_\_\_\_ 11/28/2018  
 Jeffrey Kightlinger Date  
 General Manager

**Attachment 1 – Abstract of Bids**

**Attachment 2 – Subcontractors for Low Bidder**

**Attachment 3 – Subconsultants for Agreement with Marris Services, Inc.**

**Attachment 4 – Location Map**

Ref# es12661518

**The Metropolitan Water District of Southern California**

**Abstract of Bids Received on November 7, 2018 at 2:00 P.M.**

**Specifications No. 1874**

**CRA Pumping Plants Circulating Water and Sump Discharge Piping Rehabilitation**

The work includes removal and replacement of the existing pumps, actuators, valves, and associated piping at five CRA pumping plants; replacement of existing platforms, grating, ladders, handrails, and sump covers including lighting and ventilation; electrical upgrades; and hazardous material handling and disposal.

Engineer's estimate: \$28,000,000

<b>Bidder and Location</b>	<b>Total</b>	<b>SBE \$</b>	<b>SBE %</b>	<b>Met SBE<sup>1</sup></b>
<b>Michels Pipeline Construction Westminster, CA</b>	<b>\$26,900,000</b>	<b>\$4,035,000</b>	<b>15</b>	<b>Yes</b>
Kiewit Infrastructure West Co. Santa Fe Springs, CA	\$28,126,000	-	-	-
PCL Construction, Inc. Long Beach, CA	\$28,511,129	-	-	-
McMillen Jacobs Associates Boise, Idaho	\$36,354,007			

<sup>1</sup> Small Business Enterprise (SBE) participation level established at 15% for this contract.

**The Metropolitan Water District of Southern California**

**Subcontractors for Low Bidder**

**Specifications No. 1874**

**CRA Pumping Plants Circulating Water and Sump Discharge Piping Rehabilitation**

Low bidder: Michels Pipeline Construction

<b>Subcontractor and Location</b>
Techno Coatings Anaheim, CA
316 Engineering and Construction Co. Rosemead, CA
Romero Construction Service, Inc Ontario, CA
RM Myers Corporation Anaheim, CA
Southern Contracting Company San Marcos, CA

**The Metropolitan Water District of Southern California**

**Subconsultants for Agreement with Marrs Services, Inc.**

**CRA Pumping Plants Circulating Water and Sump Discharge Piping Rehabilitation**

<b>Subconsultant and Location</b>
Jacobs Project Management Co. (CH2M Hill) Los Angeles, CA

### Location Map

