



- Board of Directors  
*Engineering and Operations Committee*

8/20/2019 Board Meeting

---

**8-2**

## **Subject**

---

Award \$10,439,354 contract to McMillen Jacobs Associates to replace radial gates along the Colorado River Aqueduct; authorize a \$600,000 increase to an agreement with Lee & Ro, Inc., for a new not-to-exceed total of \$920,000; the proposed actions are in furtherance of a project that the General Manager has determined is exempt or otherwise not subject to CEQA

## **Executive Summary**

---

This action awards a construction contract to replace seven radial gates along the Colorado River Aqueduct (CRA) and amends an existing agreement with Lee & Ro, Inc. to provide technical support during construction.

There are a total of 14 radial gates located along the CRA that are used to dewater the aqueduct for maintenance and repairs and to safely release water in case of emergency. Seven of these existing 78-year-old gates are deteriorating and need to be replaced. If any of the radial gates were to fail, uncontrolled flows could potentially be released to the surrounding areas.

## **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 cut-and-cover conduits. The aqueduct was constructed in the late 1930s and was placed into service in 1941. Radial gates are an integral part of the CRA system, allowing different sections of the CRA to be dewatered for maintenance and repairs, and enabling the safe release of water from the CRA in an emergency.

There are a total of 14 radial gates located along the CRA. The gate is normally in the closed position on the side of the CRA. Each gate is constructed of a steel framework that resembles a slice of pie, with a curved plate that rotates to block flow when the gate is in the closed position. When dewatering of the aqueduct is required, an electric motor actuator is used to pivot the gate upward from the closed to the open position which releases water from the aqueduct into the surrounding area. The electric motor, hoisting mechanism, and radial gate are mounted on a concrete structure. The gates have widths ranging from 10 to 22 feet, and heights ranging from 11 to 20 feet.

Recent inspections identified eight of the gates where significant corrosion has occurred on the gates' steel frames and mechanical components, and the concrete structures exhibit cracking and spalling. In addition, during 78 years of continuous service in the harsh desert climate, the performance of the motor actuators on these gates has diminished, requiring frequent repairs. These eight gates are located at the Rice Wasteway, Vidal Junction Wasteway, Coxcomb Wasteway, Iron Mountain Wasteway, Hinds Sand Trap, Eagle Sand Trap, Eagle Wasteway, and Eagle Mountain Reservoir Spillway. If any of these gates were to fail, uncontrolled flows could potentially be released to the surrounding areas.

In May 2014, Metropolitan's Board authorized final design to replace eight deteriorating radial gates along the CRA. Due to its significantly deteriorated condition, in December 2017, the Board authorized replacement of a single gate at Eagle Mountain Reservoir, which is now complete. The design for replacement of the remaining seven gates is also complete, and the construction contract is ready to proceed at this time.

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 Colorado River Aqueduct Reliability Program.

In accordance with the October 2018 action, the General Manager will authorize staff to proceed with fabrication and installation of seven CRA radial gates pending board award of the contract described below. Funds for the work to be performed pursuant to the subject contract during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Year 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 Radial Gates Replacement – Construction**

The scope of the construction contract includes: (1) removal of the existing gates, fabrication and installation of new stainless steel radial gates and electric motor actuators at seven sites along the CRA; (2) extension of power supply and control equipment for each gate; (3) upgrade of electrical equipment associated with each gate; (4) site improvements at each gate location including rehabilitation of damaged platforms and concrete surfaces, and replacement of guardrails and handrails; (5) abatement and disposal of hazardous material; and (6) provision of two diesel-powered generators for gate operation during a power outage.

A total of \$16.5 million is required to perform this work. In addition to the amount of the contract, other funds to be allocated include: \$1,600,000 for construction management and inspection; \$1,282,000 for Metropolitan force activities including installation, programming and integration of Supervisory Control and Data Acquisition equipment; procurement and installation of solar power equipment at three remote sites to allow for radial gate signal transmissions; dewatering the CRA at each work site, and returning the CRA to service after contractor work is completed; \$94,000 for materials and supplies; \$458,000 for submittals review and preparation of record drawings by Metropolitan staff; \$600,000 for technical support during construction by Lee & Ro, Inc., as discussed below; \$521,000 for environmental monitoring, contract administration, and project management; and \$1,505,646 for remaining budget. Replacement of the gates and actuators will occur over two CRA shutdowns scheduled for the winters of 2020 and 2021.

**Attachment 1** provides the allocation of the required funds. The total estimated cost to complete the installation of the radial gates, including the amount appropriated to date and funds allocated for the work described in this action, is approximately \$20.6 million. Approximately \$3.8 million has been expended on this project to date.

### ***Award of Construction Contract (McMillen Jacobs Associates)***

Specifications No. 1816 for the replacement of CRA radial gates was advertised for bids on May 15, 2019. As shown in **Attachment 2**, six bids were received and opened on July 9, 2019. The low bid from McMillen Jacobs Associates in the amount of \$10,439,354 complies with the requirements of the specifications. The higher bids ranged from approximately \$11,600,000 to \$23,200,000, while the engineer's estimate was \$14,000,000. Staff investigated the difference between the low bid and the engineer's estimate and attributes the difference to lower gate fabrication costs including lower material prices, and lower-than-expected overhead and profit rates in light of the high number of bidders for this large project. For this contract, Metropolitan established a Small Business Enterprise (SBE) participation level of at least 20 percent of the bid amount. McMillen Jacobs Associates has committed to meet this level of participation. The subcontractors for this contract are listed in **Attachment 3**.

This action awards a \$10,439,354 contract to McMillen Jacobs Associates for replacement of seven radial gates along the CRA.

As described above, construction inspection will be performed by Metropolitan staff. Engineering Services' performance metric target range for inspection of projects with construction greater than \$3 million is 9 to 12 percent. For this project, the performance metric goal for inspection is 13.5 percent of the total construction cost. Inspection costs for this project are projected at this level due to the around-the-clock concurrent inspection required during the two shutdowns, and due to the multiple remote locations and long travel times between sites. The total cost of construction for this project is \$11,815,354, which includes the amount of the contract (\$10,439,354) and Metropolitan force activities and materials (\$1,376,000).

**Technical Support During Construction (Lee & Ro, Inc.) – Amendment to Agreement**

Lee & Ro, Inc. performed final design for replacement of the seven existing radial gates under a board-authorized agreement. As the engineer of record, Lee & Ro, Inc. is recommended to provide technical support during construction. Planned activities include responding to requests for information from the contractor, specialized submittal review advising staff on technical issues as they may arise during construction, and assisting with start-up of the equipment. The estimated cost for these services is \$600,000. Lee & Ro, Inc. is an SBE firm, and thus achieves 100 percent SBE participation. No subconsultants are planned for this agreement.

This action authorizes an increase of \$600,000 to an existing agreement with Lee & Ro, Inc., for a new not-to-exceed total of \$920,000 to provide technical support during the construction phase of this project.

**Summary**

This action awards a \$10,439,354 contract to McMillen Jacobs Associates for replacement of seven radial gates along the CRA and amends an existing agreement with Lee & Ro, Inc. to provide technical support during the construction. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the Abstract of Bids, **Attachment 3** for the listing of Subcontractors for Low Bidder, and **Attachment 4** for the Location Map.

**Project Milestone**

June 2021 – Completion of replacement of seven radial gates along the CRA

**Policy**

---

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

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 51048, dated December 12, 2017, the Board authorized awarding a \$1,433,000 contract to Lasater Construction Co., Inc. to replace a spillway gate at Eagle Mountain Reservoir

By Minute Item 49766, dated May 13, 2014, the Board authorized final design to replace radial gates on the Colorado River Aqueduct

**California Environmental Quality Act (CEQA)**

---

**CEQA determination for Option #1:**

The proposed actions are in furtherance of a project that is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The project involves the funding, final design, and minor alterations, reconstruction or replacement of existing public facilities along with the construction of minor appurtenant structures with no expansion of use and no possibility of significantly impacting the physical environment. In addition, the project involves minor modifications in the condition of land, water, and/or vegetation which does not involve removal of healthy, mature, scenic trees. Accordingly, the project qualifies under Class 1, Class 2, Class 3, and Class 4 Categorical Exemptions (Sections 15301, 15302, 15303, and 15304 of the State CEQA Guidelines). Therefore, the proposed actions are exempt from CEQA.

**CEQA determination for Option #2:**

None required

**Board Options**

---

**Option #1**

- a. Award \$10,439,354 contract to McMillen Jacobs Associates to replace seven radial gates along the CRA; and
- b. Authorize an increase of \$600,000 to an agreement with Lee & Ro, Inc., for a new not-to-exceed total of \$920,000.

**Fiscal Impact:** \$16.5 million in capital funds

**Business Analysis:** This option will increase operational reliability of the CRA delivery system, and reduce the risk of uncontrolled and unplanned release water to the surrounding areas.

**Option #2**

Do not proceed with replacing the radial gates at this time.

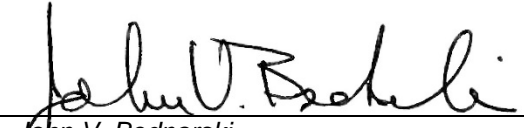
**Fiscal Impact:** None

**Business Analysis:** This option would forego an opportunity to enhance reliability of the CRA. Further deterioration of any of the gates could lead to excessive leakage, more extensive repairs, and increased costs.

**Staff Recommendation**

---

Option # 1

  
 \_\_\_\_\_ 7/25/2019  
 John V. Bednarski Date  
 Manager/Chief Engineer  
 Engineering Services

  
 \_\_\_\_\_ 7/31/2019  
 Jeffrey Kightlinger Date  
 General Manager

**Attachment 1 – Allocation of Funds**

**Attachment 2 – Abstract of Bids**

**Attachment 3 – Subcontractors for Low Bidder**

**Attachment 4 – Location Map**

Ref# Es12672250

### **Allocation of Funds for CRA Radial Gates Replacement**

---

	<b>Current Board Action (Aug. 2019)</b>
Labor	
Studies & Investigations	\$ -
Final Design	-
Owner Costs (Program mgmt., envir. monitoring)	521,000
Submittals Review & Record Drwgs.	458,000
Construction Inspection & Support	1,600,000
Metropolitan Force Construction	1,119,000
Materials & Supplies	94,000
Incidental Expenses	163,000
Professional/Technical Services	-
Lee & Ro, Inc.	600,000
Right-of-Way	-
Equipment Use	-
Contracts	-
McMillen Jacobs Associates	10,439,354
Remaining Budget	1,505,646
<b>Total</b>	<b>\$ 16,500,000</b>

The total amount expended to date to replace the radial gates is approximately \$3.8 million. The total estimated cost to complete this project, including the amount appropriated to date and funds allocated for the work described in this action, is \$20,606,000.

**The Metropolitan Water District of Southern California**

**Abstract of Bids Received on July 9, 2019, at 2:00 P.M.**

**Specifications No. 1816  
CRA Radial Gates Replacement**

The work consists of removal of the existing gates; fabrication and installation of new stainless steel radial gates at seven sites along the CRA; extension of power supply and control; upgrade of the electrical equipment, rehabilitation of damaged platforms and concrete surfaces; site improvements, abatement and disposal of hazardous material; and furnishing of two diesel-powered generators for temporary power.

Engineer's estimate: \$14,000,000

<b>Bidder and Location</b>	<b>Total</b>	<b>SBE \$</b>	<b>SBE %</b>	<b>Met SBE<sup>1</sup></b>
McMillen Jacobs Associates Boise, ID	<b>\$10,439,354</b>	<b>\$2,129,954</b>	<b>20.4%</b>	<b>Yes</b>
Steve P. Rados, Inc. Santa Ana, CA	\$11,565,172	-	-	-
J.F. Shea Construction, Inc. Walnut, CA	\$12,079,000	-	-	-
PCL Construction, Inc. Long Beach, CA	\$13,483,000	-	-	-
Abhe & Svoboda, Inc. Alpine, CA	\$14,347,472	-	-	-
Gracon, LLC Lafayette, CO	\$23,200,000	-	-	-

<sup>1</sup> Small Business Enterprise (SBE) participation level established at 20% for this contract.

**The Metropolitan Water District of Southern California**

**Subcontractors for Low Bidder**

**Specifications No. 1816  
CRA Radial Gates Replacement**

Low bidder: McMillen Jacobs Associates

<b>Subcontractor and Location</b>
Southland E&I Services, Inc. Mira Loma, CA
Environmental Construction Group, Inc. Signal Hill, CA
CMC Rebar West San Diego, CA

### Location Map

