



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

12/10/2019 Board Meeting

8-3

Subject

Award \$5,316,900 contract to Gracon LLC to rehabilitate the discharge structure at Gene Wash Reservoir; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

This action awards a construction contract to rehabilitate the discharge structure on the Gene Wash Reservoir dam on the Colorado River Aqueduct (CRA).

The existing discharge structure is located at the base of Gene Wash dam and has been in continuous operation for 80 years. The structure consists of a shut off valve and a fixed cone valve. If the reservoir needed to be drained rapidly in the event of an emergency, the valves would be opened to safely release the water. The project includes replacing these two critical valves along with upgrading associated equipment. The Gene Wash dam is under the jurisdiction of the California Division of Safety of Dams (DSOD), which requires that the discharge valves be fully operational at all times. This extensive refurbishment is the first major maintenance that has been conducted on this structure since its original construction in 1937, and the work will ensure the continued reliable operation of the discharge facilities.

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 Gene Wash and Copper Basin Reservoirs are critical hydraulic components of the CRA that enable Metropolitan to balance and control aqueduct flows. Gene Wash was constructed in 1937 and holds 6,300 acre-feet of water. Copper Basin was constructed in 1938 and holds 24,200 acre-feet of water. Each facility has a concrete-arch dam with a discharge structure at its base that contains a trash rack, a 4-foot-diameter outlet pipe, a shutoff gate valve, and a fixed cone (Howell-Bunger) discharge valve. The gate valve and fixed cone valve would be used to rapidly drain the reservoir in the event of an emergency.

Under normal operating conditions, the gate valves and fixed cone valves at each dam are closed. On a semiannual basis, staff exercises these valves during site inspections with DSOD staff. Water discharged from Gene Wash and Copper Basin Reservoirs travels through a natural drainage course and is ultimately returned to the Colorado River. Following more than 80 years of continuous service and regular maintenance, the fixed cone valves are leaking, and the gate valves have become unreliable during operation. The fixed cone valves, gate valves, and their electrical systems have deteriorated beyond the point where regular maintenance can resolve the issues, and the equipment needs to be replaced.

In February 2015, Metropolitan's board authorized design to rehabilitate the discharge structures at Gene Wash and Copper Basin Reservoirs. In December 2016, Metropolitan's board awarded a contract for procurement of two fixed cone valves and actuators to replace the existing discharge valves at each reservoir. Fabrication of the fixed cone valves is complete, and the valves have been delivered and stored at Gene Pumping Plant.

Rehabilitation of the discharge structures at both reservoirs will be implemented in two stages to address the unique configuration of each reservoir and to minimize the outage duration of each reservoir's emergency drawdown system. Stage 1, which is the subject of this board action, includes the construction work to rehabilitate the Gene Wash Reservoir discharge structure. Stage 2 will include rehabilitation of the Copper Basin discharge structure. Final design of Stage 1 is now complete, and the construction will proceed once the Board awards the construction contract. Staff will return to the Board at a later date for the award of a construction contract for Stage 2 at Copper Basin Reservoir.

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 rehabilitation of the Gene Wash discharge facilities, pending contract award by the Board. The contract to rehabilitate the discharge structure at Gene Wash is described below. Based on the current CIP expenditure forecast, 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 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.

Gene Wash Reservoir Discharge Structure Rehabilitation – Construction

The scope of the construction contract includes: (1) replacement of the existing discharge valve and actuator with a Metropolitan-furnished 42-inch fixed cone valve and actuator; (2) refurbishment of the existing 42-inch slide gate valve; (3) recoating of the dam discharge pipeline interior; (4) refurbishment of the existing valve house at the base of the dam; (5) upgrades of associated electrical systems; and (6) design, fabrication, and installation of a temporary underwater isolation device. The underwater isolation device will include a custom-designed bulkhead or plug system with a bypass valve and pneumatic actuator, which will be installed at the upstream end of the sluiceway for a period of approximately eight to nine months. The device will isolate the reservoir from the discharge structure, while the bypass valve will remain capable of releasing reservoir flows in the event of a dam safety emergency. This approach to drawing down the reservoir during construction has been approved by DSOD.

A total of \$9.8 million is required to perform this work. In addition to the amount of the contract described below, other funds to be allocated include: \$815,000 for construction management and inspection by Metropolitan forces; \$1,040,000 for other Metropolitan force activities, including rerouting electrical service for the dam, providing valve access for DSOD monthly inspections during construction, SCADA system integration, outage coordination, establishing clearances, and equipment start-up and testing; \$130,000 for procurement of a remote terminal unit (RTU) to control and monitor the new discharge valve; \$562,000 for submittals review, responding to requests for information, and preparation of record drawings; \$140,000 for technical support by COWI North America Inc., a specialized consulting firm with marine construction experience; \$382,000 for contract administration, environmental monitoring, and project management; and \$1,414,000 for remaining budget. COWI North America Inc. will provide technical support during construction under an existing agreement, which will be amended under the General Manager's authority.

Attachment 1 provides the allocation of the required funds. The total estimated cost to complete the Gene Wash Discharge Structure Rehabilitation project, including the amount allocated to date and funds allocated for the work described in this action and future actions, is approximately \$11.7 million. Approximately \$1.9 million has been expended on this project to date.

Award of Construction Contract (Gracon LLC)

Specifications No. 1666 for replacement of the Gene Wash discharge valve was advertised for bids on September 16, 2019. As shown in **Attachment 2**, seven bids were received and opened on November 8, 2019. The low bid from Gracon LLC in the amount of \$5,316,900 complies with the requirements of the specifications. The other bids ranged from \$6.4 million to \$10.9 million, while the engineer's estimate was \$8.1 million. For this

contract, Metropolitan established a Small Business Enterprise (SBE) participation level of at least 20 percent of the bid amount. Gracon LLC is an SBE firm and thus achieves 100 percent participation. The subcontractors for this contract are listed in **Attachment 3**.

This action awards a \$5,316,900 contract to Gracon LLC for the replacement of the discharge valve and rehabilitation of the discharge structure at Gene Wash Reservoir.

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 11.9 percent of the total construction cost. The total cost of construction for this project is \$6,866,900, which includes the amount of the contract (\$5,316,900), the cost of Metropolitan-furnished discharge valve and RTU (\$510,000), and Metropolitan force activities (\$1,040,000).

Alternatives Considered

During design, staff examined the feasibility of implementing the rehabilitation of the discharge structures at both reservoirs under a single construction contract. Under this approach, there may have been the potential to reduce some project costs such as contractor mobilization as well as construction contract administration. However, as design of both facilities progressed, it was determined that the Copper Basin portion of the project was more complex when compared to Gene Wash. Specifically, site access limitations at Copper Basin will require significant planning and design work to ensure the project can be implemented in a cost-effective manner. These site access issues do not exist at the Gene Wash site. Secondly, by breaking the project into two contracts, multiple bidding opportunities are afforded to the contracting community, thereby potentially creating more competitive bidding environments for both projects. The use of multiple contracts allows staff to incorporate lessons learned from the Gene Wash Reservoir discharge structure rehabilitation into the contract for Copper Basin Reservoir. Finally, due to the complexities at Copper Basin, it is anticipated that the use of separate construction contracts will allow the Gene Wash project to be completed approximately 12-14 months earlier when compared to a project approach that combines work at both sites into one construction contract.

Summary

This action awards a \$5,316,900 contract to Gracon LLC for replacement of the emergency discharge valve and rehabilitation of the discharge structure at Gene Wash Reservoir. 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 the discharge valve replacement at Gene Wash Reservoir

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 50035, dated February 10, 2015, the Board authorized final design to rehabilitate the discharge structures at Copper Basin and Gene Wash Reservoirs

By Minute Item 50663, dated December 13, 2016, the Board authorized awarding a \$599,730 contract to Integrated 8(a) Solutions to furnish fixed cone valves and actuators; and authorized preliminary design to improve access to Copper Basin and Gene Wash Reservoirs

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 categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed project involves the funding; minor alterations, and 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 proposed action involves minor modifications in the condition of land, water, and/or vegetation which does not involve removal of healthy, mature, scenic trees. Accordingly, the proposed action qualifies under Class 1, Class 2, Class 3, and Class 4 Categorical Exemptions (Sections 15301, 15302, 15303, and 15304 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Award \$5,316,900 contract to Gracon LLC to replace the discharge valve and rehabilitate the discharge structure at Gene Wash Reservoir.

Fiscal Impact: Expenditure of \$9.8 million in capital funds. Approximately \$1,000,000 will be incurred in the current fiscal year and has been previously authorized. The remaining funds from this action and for future construction costs will be accounted for and appropriated under the next biennial budget.

Business Analysis: This option will enhance safety and maintain compliance with DSOD regulations.

Option #2

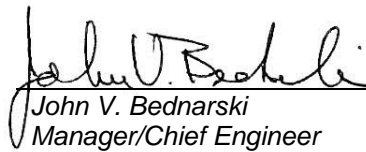
Do not award a contract to replace the discharge valve at Gene Wash Reservoir at this time.

Fiscal Impact: None

Business Analysis: This option would delay the replacement of the discharge valve and would forego an opportunity to enhance reliability of the CRA.

Staff Recommendation

Option #1


 _____ 11/26/2019
 John V. Bednarski Date
 Manager/Chief Engineer
 Engineering Services


 _____ 12/3/2019
 Jeffrey Knightlinger Date
 General Manager

Attachment 1 – Allocation of Funds

Attachment 2 – Abstract of Bids

Attachment 3 – Subcontractors for Low Bidder

Attachment 4 – Location Map

Allocation of Funds for Gene Wash Reservoir Discharge Valve Replacement

	Current Board Action (Dec. 2019)
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Labor	
Studies & Investigations	\$ -
Final Design	-
Owner Costs (Program mgmt., contract admin., envir. monitoring)	352,000
Submittals Review & Record Drwgs.	562,000
Construction Inspection & Support	805,000
Metropolitan Force Construction	1,040,000
Materials & Supplies	130,000
Incidental Expenses	40,000
Professional/Technical Services	
COWI North America, Inc.	140,000
Right-of-Way	-
Equipment Use	-
Contracts	-
Gracon LLC	5,316,900
Remaining Budget	1,414,100
Total	<hr/> \$ 9,800,000 <hr/>

The total amount expended to date for Gene Wash Reservoir Discharge Valve Replacement is approximately \$1.9 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 and future work, is \$11.7 million.

The Metropolitan Water District of Southern California

Abstract of Bids Received on November 5, 2019 at 2:00 P.M.

**Specifications No. 1666
Gene Wash Reservoir Discharge Valve Replacement**

The planned work consists of replacement of the existing discharge valve and actuator with a Metropolitan-furnished 42-inch fixed cone valve and actuator; refurbishment of the existing 42-inch slide gate valve; recoating of the dam discharge pipeline interior; refurbishment of the existing valve house at the base of the dam; upgrades of associated electrical systems; and fabrication and installation of a temporary underwater isolation.

Engineer's estimate: \$8,100,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE¹
Gracon LLC Lafayette, CO	\$5,316,900	\$5,316,900	100%	YES
Triton Marine Construction Corp. Bremerton, WA	\$6,467,923	-	-	-
J. F. Shea Construction, Inc. Walnut, CA	\$7,666,000	-	-	-
McMillen Jacobs Associates Boise, ID	\$7,886,000			
Abhe & Svoboda, Inc. Alpine, CA	\$8,306,510	-	-	-
Kiewit Infrastructure West Co. Santa Fe Springs, CA	\$8,397,000	-	-	-
Innovative Engineering and Maintenance Wilmington, CA	\$10,971,000	-	-	-

¹ 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. 1666

Gene Wash Reservoir Discharge Valve Replacement

Low bidder: Gracon LLC

Subcontractor and Location
AUS Diving Spokane, WA
Techno Coatings Anaheim, CA
Deere & Ault Consultants, Inc. Boise, ID
GeoStabilization International Commerce City, CO
JH Engineering, LLC Austin, TX
Island Lake Marine & Sports, Inc. Fort Collins, CO
Walsh Energy Consulting Las Vegas, NV
G2 Metal Fab Livermore, CA

Location Map

