



- Board of Directors
Engineering and Operations Committee

11/5/2019 Board Meeting

7-3

Subject

Authorize refurbishment of the sleeve valves at the Hiram W. Wadsworth Pumping Plant; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

This action authorizes design, fabrication, and installation of interior valve components to refurbish seven 66-inch by 42-inch sleeve valves at the Hiram W. Wadsworth Pumping Plant (Wadsworth Pumping Plant) at Diamond Valley Lake (DVL). This project will enhance operational performance of the Wadsworth Pumping Plant and maintain reliable water deliveries to the San Diego Canal. This project was not included in the Capital Investment Plan (CIP) budget for fiscal years 2018/19 and 2019/20, and as such requires specific board authorization to proceed.

Recent inspections have identified numerous deteriorated sleeve valves at the Wadsworth Pumping Plant. The sleeve valves originally installed in 1999 control the flow of water from DVL to the San Diego Canal. While operation of the pumping plant has not yet been impacted, failure of the valves could lead to an unplanned shutdown and interruption of water delivery to member agencies.

Details

Background

DVL is Southern California's largest surface water reservoir, with a maximum storage capacity of 810,000 acre-feet. DVL, completed in 2000, is located south of the city of Hemet in Riverside County. The Wadsworth Pumping Plant, which is located adjacent to DVL, controls flows between DVL, the Inland Feeder, and the San Diego Canal; and additionally generates power from its turbine generators. The pumping plant has three primary purposes: (1) pumping water into DVL; (2) controlling reservoir outflow to the San Diego Canal by generating power with the pump/turbine units; and (3) controlling reservoir outflow using seven pressure-reducing sleeve valves. The sleeve valves are also relied upon for emergency dewatering of DVL.

The seven 66-inch by 42-inch sleeve valves were placed into operation over 20 years ago when the pumping plant was originally constructed. While regular inspections and maintenance activities are performed by Metropolitan staff, the valves have deteriorated over time. Inspections in 2019 of the units identified that internal valve components are vulnerable to both microbiologically-induced corrosion and crevice corrosion. One sleeve valve is currently out of service due to this deterioration, and it is recommended that all seven sleeve valves be refurbished to ensure long-term reliable operation of the Wadsworth Pumping Plant.

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 CIP, subject to any limits on the General Manager's authority and CEQA requirements. This project was not included in the CIP budget for fiscal years 2018/19 and 2019/20. Any project not included in the CIP budget requires specific board authorization to proceed. The project has been reviewed in accordance with Metropolitan's CIP prioritization criteria and is now recommended to be included in the Distribution System Reliability Program.

In accordance with the October 2018 action, the General Manager will authorize staff to proceed with the refurbishment of the sleeve valves at the Wadsworth Pumping Plant, pending the board authorization described below.

Based on the current CIP expenditure forecast, funds for the work to be performed pursuant to this action are available within the Capital Investment Plan Appropriation for Fiscal Years 2018/19 and 2019/20 (Appropriation No. 15509).

Wadsworth Pumping Plant Sleeve Valves Refurbishment – Design, Fabrication, and Installation

The planned design activities by Metropolitan staff include: (1) field investigation; (2) material assessment and selection; (3) preparation of drawings and specifications for refurbishment of sleeve valves; and (4) procurement of replacement mechanical components. Metropolitan staff will also provide fabrication and installation services, including: (1) disassembly of the units; (2) refurbishment of the seven sleeve valves, including fabrication of new components to replace worn or damaged components, replacement of internal seals, gaskets, and specialty fasteners, and sandblasting and recoating of the valve bodies and cylinder gates; (3) installation of a cathodic protection system to prevent future corrosion; (4) reassembly of the units; and (5) testing and recommissioning of the valves by a specialty vendor. The agreement with the specialty vendor is planned to be executed under the General Manager's Administrative Code Authority to award contracts of \$250,000 or less.

Metropolitan forces will perform this work for the following reasons: (1) staff will be able to expeditiously complete the work as soon as replacement parts are delivered and to modify the work schedule if water supply conditions change; and (2) with staff performing this work, costs associated with a relatively small construction contract (e.g., contract administration, installation specifications, and construction management) will be avoided.

A total of \$1,100,000 is required for this work. Allocated funds include \$105,000 for design phase activities described above; \$657,000 for Metropolitan force fabrication and construction described above; \$95,000 for procurement of mechanical components; \$15,000 for testing and commissioning; \$80,000 for project management; and \$148,000 for remaining budget. The procurement contracts for the replacement material for the valve components are planned to be awarded under the General Manager's Administrative Code Authority to award contracts of \$250,000 or less.

Attachment 1 provides the allocation of the required funds. The total estimated cost to complete the sleeve valve refurbishment is \$1.1 million.

As described above, final design and construction will be performed by Metropolitan staff. Engineering Services' performance metric target range for final design with construction less than \$3 million is 9 to 15 percent. For this project, the performance metric goal for final design is 9.6 percent of the total construction costs. The total cost of construction for this project is \$767,000.

Summary

This action authorizes the refurbishment of seven sleeve valves at the Wadsworth Pumping Plant. See **Attachment 1** for the Allocation of Funds and **Attachment 2** for the Location Map.

Project Milestone

June 2020 – Completion of refurbishment of seven sleeve valves at Wadsworth Pumping Plant

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.

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 action involves design, 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 as the structure replaced and will have the same purpose and capacity as the structure replaced. 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. Authorize refurbishment of seven sleeve valves at the Wadsworth Pumping Plant; and
- b. Amend the current CIP to include the refurbishment of seven sleeve valves at the Wadsworth Pumping Plant.

Fiscal Impact: \$1,100,000 in capital funds

Business Analysis: This option will maintain reliable operation of the Wadsworth Pumping Plant and will maintain reliable water deliveries to member agencies.

Option #2

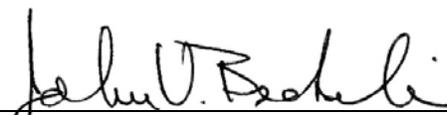
Do not proceed with refurbishment of the sleeve valves at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to enhance reliability of the Wadsworth Pumping Plant. Further deterioration of the sleeve valves could lead to unplanned outages while emergency repairs are performed.

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

Ref# es12670820

Distribution System

