



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

7/11/2017 Board Meeting

8-6

Subject

Adopt CEQA determination and appropriate \$3.3 million; and authorize increase in change order authority for the construction contract to rehabilitate Palos Verdes Reservoir (Appropriation No. 15417)

Executive Summary

This action authorizes an increase in the General Manager's authority to execute change orders for the construction contract currently underway to rehabilitate Palos Verdes Reservoir. During the course of construction, several issues arose that caused construction challenges and delays, including inclement weather, water-related impacts, and differing site conditions. Staff has held discussions with the contractor regarding the cost impact to the contract, and recommends that the change order authority be amended at this time so that construction may continue without further delays.

Timing and Urgency

The rehabilitation of Palos Verdes Reservoir and its return to service will improve reliability and flexibility for the delivery of treated water within Metropolitan's Central Pool. Due primarily to the heavy rains that occurred during winter 2016/17, the contractor incurred additional labor and material costs.

Metropolitan's construction contracts are typically completed with final change order amounts falling well within the General Manager's Administrative Code authority. On the Palos Verdes Reservoir project, the extent of extra work required will exceed the General Manager's authority. An increase in change order authority is requested at this time in order for the work to continue without further delays and to be completed at the lowest overall cost.

Details

Background

Palos Verdes Reservoir is the final delivery point for both the Second Lower Feeder and the Palos Verdes Feeder. This facility has a storage capacity of 1,105 acre-feet and is located in the city of Rolling Hills Estates. Palos Verdes Reservoir was constructed in 1939 to provide operational storage and hydraulic flexibility within the distribution system. Since its construction, the only means available for dewatering the reservoir has been to lower its operating level through potable water deliveries to member agencies. There is no piped connection to drain the reservoir, or to convey storm water from the reservoir site to a storm drain. Member agencies that typically receive water stored in the reservoir include the cities of Compton, Long Beach, and Torrance, and the harbor area of the city of Los Angeles.

Palos Verdes Reservoir has an earthen dam and is approximately 1,000 feet wide by 1,500 feet long, with a maximum depth of 60 feet. Following a detailed inspection of the facility in 2011, the reservoir was removed from service because of wear and tear on the floating cover and damage to the concrete liner that was discovered at the reservoir's side slopes and bottom.

Following extensive geotechnical investigations, seismic stability analyses, and technical review by the state Division of Safety of Dams, the design to rehabilitate Palos Verdes Reservoir was completed in 2015. In November 2015, Metropolitan's Board awarded a \$29.56 million contract to OHL USA, Inc. to perform the

repairs. The work includes removal of the reservoir's existing concrete lining; re-grading of the clay sub-liner; modification of the existing spillway, inlet/outlet tower, and secondary inlet and outlet structures; installation of a new sub-drain system, asphalt concrete lining, geomembrane liner, and geomembrane floating cover; modification of the existing electrical system, sodium hypochlorite feed system, rainwater removal system from the floating cover, and drainage piping; installation of a new isolation valve and flow meter upstream of the reservoir; and addition of a precast concrete instrumentation and water quality laboratory building.

The rehabilitation contract is currently approximately 30 percent complete. However, due primarily to the heavy rains that occurred during winter 2016/17, and to some differing site conditions, the work will extend beyond the original contract completion date.

Metropolitan's Administrative Code authorizes the General Manager to execute change orders on construction contracts in an aggregate amount not to exceed 5 percent of the initial amount of the contract or \$250,000, whichever is greater. If changes occur on a construction contract that will exceed this total, additional authorization from the Board is required. At this time, the subject contract has experienced changes that will exceed the General Manager's Administrative Code authority.

Palos Verdes Reservoir Rehabilitation – Increase in Change Order Authority (\$2,300,000)

During the course of construction, the contractor encountered several issues that caused additional labor and material costs to be incurred. These issues include:

Weather delays and water-related impacts – Under the contract, early construction activities included demolition and removal of the existing concrete liner. After the liner was removed down to the clay sub-liner, heavy rainfall from a series of winter storms directed approximately 13 million gallons of runoff from the adjacent drainage area into the unlined reservoir. The heavy rains also raised local groundwater levels. As a result, the contractor expended additional effort to dewater and recondition the saturated and soft clay sub-liner. The total duration of delays associated with these issues will exceed 120 days. Some examples of additional work resulting from the weather and water-related issues include:

- Installation of a temporary pump system with silt removal features was required to remove storm runoff from within the reservoir and discharge into a local storm drain.
- Unanticipated construction dewatering was needed to lower the groundwater elevation, dry out the reservoir, and enable re-grading of the clay sub-liner to proceed. Ancillary work included rehabilitation of an onsite percolation basin to receive the pumped groundwater. The contractor also stored pumped groundwater in a portable tank for onsite dust control operations and to dissipate the groundwater.
- The higher-than-anticipated groundwater elevation required a French drain system to be enlarged and extended, to enable long-term reservoir seepage flows and groundwater to be conveyed to a sump collection system. The French drain was originally sized to meet historical groundwater levels.

The estimated amount to address these weather- and water-related issues is \$2.1 million.

Groundwater may not be discharged into a storm drain without extensive permitting and water quality testing. Treatment of the water may also be necessary to meet discharge standards. The Palos Verdes Reservoir does not presently have a permit in place to allow the discharge of groundwater into the storm drain. As a long-term operational enhancement for the reservoir, staff has initiated the application process to acquire a discharge permit.

Differing site conditions – The contract included removal of the Second Lower Feeder's existing reinforced concrete inlet apron and replacement with a new buried concrete box culvert. Based on record information, the material to be excavated was anticipated to be native material. Upon excavation, the contractor discovered a mixture of boulders and cobbles within the native soil which required the use of more powerful equipment, and required additional resources and time. The estimated cost to address this issue is \$200,000.

Per Metropolitan's Administrative Code, the General Manager has the authority to execute change orders for this contract up to a maximum of \$1,478,000. In order to resolve the issues described above, staff recommends that the change order authority be increased by \$2.3 million, for a new maximum amount of \$3,778,000.

This action appropriates \$2.3 million and authorizes an increase of \$2.3 million in the General Manager's authority to execute change orders for the construction contract to rehabilitate Palos Verdes Reservoir, up to an aggregate amount not to exceed \$3,778,000.

Palos Verdes Reservoir Rehabilitation – Construction Management and Technical Support (\$1,000,000)

In addressing the weather- and water-related issues that arose during the construction, staff expended significantly more time than originally anticipated to support the work and minimize delays to the contractor. The additional activities included geotechnical investigations, acquisition of stormwater discharge permits, and the initiation of permitting for groundwater discharge to the regional storm drain system. In addition, due to the extended duration of construction, Metropolitan's onsite inspection and support activities will increase beyond the level planned.

Engineering Services' goal for inspection of projects with construction greater than \$3 million is 9 to 12 percent of the total construction cost. For this project, the original budget established for inspection was below this range (\$2.06 million, or 6.7 percent of the total construction cost). In order to manage the extended construction effectively and address the weather- and water-related issues described above, staff recommends that an additional \$1 million be appropriated for staff to support the construction. With this increase, the new budget for inspection and support will be \$3.06 million, or 9.3 percent of the total construction cost.

This action appropriates \$1 million for staff to continue to perform inspection and support the construction contract currently underway to rehabilitate Palos Verdes Reservoir.

Summary

This action appropriates \$3.3 million and authorizes an increase in the General Manager's authority to execute change orders for the construction contract to rehabilitate Palos Verdes Reservoir. This project is included within capital Appropriation No. 15417, the Reservoir Cover Replacement Appropriation, which was initiated in fiscal year 2001/02. With the present action, the total funding for this appropriation will increase from \$43,316,000 to \$46,616,000.

The total estimated cost to complete the rehabilitation of Palos Verdes Reservoir, including the amount appropriated to date and current funds requested, is \$39.3 million.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2017/18 capital expenditure plan. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Map.

Project Milestone

August 2018—Completion of contract for the rehabilitation of Palos Verdes Reservoir

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Section 8123: Authority of the General Manager to Amend Contracts

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

To comply with CEQA and the State CEQA Guidelines, Metropolitan as the Lead Agency prepared a Mitigated Negative Declaration (MND) for the Palos Verdes Reservoir upgrades project. The MND was distributed for a 30-day public review period that began on March 19, 2015. The Board later adopted the MND on July 14, 2015. Subsequent to this action, two addenda were prepared in response to minor project modifications. Section 15164(b) of the State CEQA Guidelines provides that an addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in

Section 15162 of the State CEQA Guidelines calling for the preparation of a subsequent EIR or negative declaration have occurred. Addendum No. 1 addressed upgrades to the on-site water quality laboratory and blow-off infrastructure. Addendum No. 2 addressed installation of vertical drains within an on-site percolation basin. Addendum No. 1 was adopted by the Board in November 2015, and Addendum No. 2 was completed in September 2016. The present action is solely based on an increase in change order authority and not on any changes to the approved project itself. Hence, the previously adopted environmental documentation in conjunction with the current action fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further environmental documentation is necessary for the Board to act on with respect to the proposed action.

The CEQA determination is: Determine that the proposed action has been previously addressed in the adopted 2015 Mitigated Negative Declaration and subsequent addenda, and that no further analysis or documentation is required.

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination that the proposed action has been previously addressed in the adopted 2015 Mitigated Negative Declaration and that no further environmental analysis or documentation is required, and

- a. Appropriate \$3.3 million; and
- b. Authorize increase of \$2.3 million in change order authority for the rehabilitation of Palos Verdes Reservoir, up to an aggregate amount not to exceed \$3,778,000.

Fiscal Impact: \$3.3 million of capital funds under Appropriation No. 15417

Business Analysis: This option will enable the reservoir rehabilitation contract to continue without further delays. Timely completion of the contract will allow needed pipeline rehabilitation projects to move forward on schedule.

Option #2

Do not authorize an increase in change order authority at this time, and direct staff to revisit the amount negotiated with the contractor for the additional work.

Fiscal Impact: None

Business Analysis: This option is unlikely to result in lower costs for the extra work performed, and may cause further delays in project completion.

Staff Recommendation

Option #1



 Gordon Johnson
 Manager/Chief Engineer
 Engineering Services

6/23/2017

Date



 Jeffrey Krontlinger
 General Manager

6/27/2017

Date

Attachment 1 – Financial Statement

Attachment 2 – Location Map

Ref# es12656866

Financial Statement for Reservoir Cover Replacement Appropriation

A breakdown of Board Action No. 7 for Appropriation No. 15417 to rehabilitate Palos Verdes Reservoir ¹ is as follows:

	Previous Total Appropriated Amount (Apr. 2017)	Current Board Action No. 7 (July 2017)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 1,021,000	\$ -	\$ 1,021,000
Final Design	251,000	-	251,000
Owner Costs (Program mgmt.)	2,131,420	100,000	2,231,420
Submittals Review & Record Drwgs	200,000	-	200,000
Construction Inspection & Support	2,278,000	900,000	3,178,000
Metropolitan Force Construction	1,050,000	-	1,050,000
Materials & Supplies	11,000	-	11,000
Incidental Expenses	384,840	-	384,840
Equipment Use	-	-	-
Professional/Technical Services	3,031,223	-	3,031,223
Contracts	1,478,012	-	1,478,012
OHL USA, Inc.	29,560,000	2,300,000	31,860,000
Remaining Budget	1,919,505	-	1,919,505
Total	\$ 43,316,000	\$ 3,300,000	\$ 46,616,000

Funding Request

Appropriation Name:	Reservoir Cover Replacement Appropriation		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15417	Board Action No.:	7
Requested Amount:	\$3,300,000	Budget Page No.:	251
Total Appropriated Amount:	\$46,616,000	Total Appropriation Estimate	\$41,500,000

¹The total amount expended to date to rehabilitate Palos Verdes Reservoir is \$14.4 million. The total estimated cost to complete the project, including the amount appropriated to date and current funds requested, is approximately \$39.3 million.

