



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

4/11/2023 Board Meeting

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7-5

**Subject**

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Authorize an increase of \$5.4 million to an existing agreement with Arcadis U.S., Inc., for a new not-to-exceed total amount of \$6.35 million, for engineering design services to rehabilitate Garvey Reservoir; the General Manager has determined that this proposed action is exempt or otherwise not subject to CEQA

**Executive Summary**

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The California Division of Drinking Water (DDW) requires that all reservoirs holding treated water be covered to protect them from contamination. The existing reservoir cover, liner, and supporting facilities at Garvey Reservoir have deteriorated and need rehabilitation to protect water quality and maintain reliable water deliveries. This action authorizes an amendment to an existing agreement to provide engineering services for final design of the Garvey Reservoir rehabilitation project.

**Details**

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**Background**

Garvey Reservoir was constructed in 1954 as a component of the Middle Feeder system. The reservoir receives treated water from the F. E. Weymouth Water Treatment Plant and has a maximum storage volume of 1,600 acre-feet. The reservoir provides critical hydraulic flexibility to Metropolitan's distribution system by stabilizing flows within the Middle Feeder. The reservoir also ensures deliveries to member agency service connections when pipelines are shut down for maintenance.

To protect treated water from contamination, DDW requires that all finished water reservoirs be covered. Metropolitan is in compliance with this requirement and has installed floating reservoir covers at all its larger treated water storage facilities. Floating reservoir covers consist of a thin membrane material that floats on the reservoir's water surface. While floating reservoir covers are a cost-effective means of maintaining water quality, the cover material deteriorates over time. If tears develop in the cover material, the potable water supply is susceptible to contamination. Metropolitan has a proactive reservoir cover inspection and maintenance program that includes regular inspections, both above and below the cover, to identify signs of deterioration or damage. This program ensures that the floating covers and reservoirs remain in compliance with DDW requirements. Metropolitan's experience has shown that the typical useful life for a floating cover is between 20 and 25 years. The existing floating cover and bottom liner at Garvey Reservoir were installed in 1999 and are at the end of their useful life.

In addition to replacing the reservoir's liner and cover, the rehabilitation work at the reservoir will also include a seismic retrofit or replacement of the 86.5-foot-tall and 16-foot-wide outlet tower to ensure the functionality of the reservoir remains intact in the event of a major earthquake in the vicinity; upgrade of the reservoir's on-site 114-square-foot water quality laboratory building to provide adequate work space and improve seismic performance; replacement of five original junction structure valves that are deteriorating and which control reservoir flows; replacement of the aging standby generator to enhance operational reliability during a power outage; and replacement of approximately 1,000 linear feet of perimeter fence along Orange Avenue to provide additional site security.

In March 2021, Metropolitan's Board authorized an agreement for engineering services to conduct preliminary design activities to rehabilitate the reservoir facilities. The work was conducted as a hybrid effort of consultant and Metropolitan staff. Preliminary design is now complete, and staff recommends proceeding with final design. Staff will return to the Board in fall 2023 to certify the Environmental Impact Report prepared for the project.

In accordance with the April 2022 action on the biennial budget for fiscal years 2022/23 and 2023/24, the General Manager will authorize staff to proceed with the action described herein, pending board authorization of the action described below. Based on the current Capital Investment Plan (CIP) expenditure forecast, funds for work to be performed pursuant to this action during the current biennium are available within the Capital Investment Plan Appropriation for Fiscal Years 2022/23 and 2023/24 (Appropriation No. 15525). This project has been reviewed in accordance with Metropolitan's CIP prioritization criteria and was approved by Metropolitan's CIP evaluation team to be included in the Reservoir Cover Replacement Program.

### **Garvey Reservoir Rehabilitation – Final Design**

Planned rehabilitation work includes replacement of the reservoir cover and liner; upgrades to the reservoir's rainwater collection, pumping, and subdrain systems; structural strengthening of the inlet/outlet tower; upgrade of the on-site water quality laboratory building; rehabilitation of the junction structure; and replacement of the existing standby generator and a portion of the security perimeter fence.

Final design phase activities include: (1) detailed structural analyses; (2) preparation of drawings and technical specifications; (3) development of a construction cost estimate; and (4) value engineering. These activities are planned to be conducted by both Metropolitan staff and Arcadis U.S., Inc., under an existing agreement described below. The scope of work for Arcadis includes final design for: (1) the replacement of the floating cover, reservoir liner, and subdrain system, (2) the inlet/outlet tower seismic rehabilitation, and (3) replacement of the standby generator at Garvey Reservoir. Metropolitan staff will perform final design for the remaining project elements, perform overall project management, and conduct technical reviews. It is anticipated that multiple construction contracts will be issued for the rehabilitation work to prioritize the most urgent work components.

A total of \$8.9 million is required for this work. Allocated funds include \$5.4 million for the final design activities by Arcadis described above. Allocated funds for Metropolitan staff activities include \$1.9 million for structural, mechanical, and instrumentation design and technical oversight and review of consultant's work; \$834,000 for shutdown planning, permitting, environmental support, and project management; and \$326,000 for remaining budget. Other allocated funds include \$440,000 for environmental documentation, value engineering, geotechnical investigations, and public outreach, which will be performed by specialty firms under contracts planned to be executed under the General Manager's Administrative Code authority.

As described above, final design will be performed by Arcadis U.S., Inc. and Metropolitan staff. Engineering Services' performance metric target range for final design with construction more than \$3 million is 9 to 12 percent. For this project, the performance metric goal for final design is 8.6 percent of the total construction cost. The estimated cost of construction for the rehabilitation of Garvey Reservoir is anticipated to range from \$85 million to \$89 million.

### **Engineering Services (Arcadis U.S., Inc.) – Amendment to Agreement**

Arcadis U.S., Inc. was selected through a competitive process via Request for Proposals No. 1255 based on the firm's experience with reservoir covers and specifically for their expertise in reservoir storage facilities. In March 2021, Metropolitan's Board authorized an agreement with Arcadis U.S., Inc. for a not-to-exceed amount of \$950,000 to perform preliminary design for the rehabilitation of Garvey Reservoir. Arcadis has completed preliminary design activities and is now recommended to perform the final design scope of work discussed above under the agreement amendment.

This action authorizes an increase of \$5.4 million to the existing agreement with Arcadis U.S., Inc for a new not-to-exceed total of \$6.35 million to perform final design to rehabilitate Garvey Reservoir. For this agreement, Metropolitan has established a Small Business Enterprise participation level of 25 percent. Arcadis has agreed to meet this level of participation. The planned subconsultants for this work are listed in **Attachment 2**.

**Alternatives Considered**

Upon completion of preliminary design for the rehabilitation of Garvey Reservoir facilities, staff reassessed the availability and capability of in-house Metropolitan staff to conduct final design, considering: (1) current work assignments for in-house staff to determine the potential availability of staff to conduct this work; and (2) specialized technical expertise needs. The current approach uses in-house staff for items normally encountered when working on capital improvement projects, while consultants are utilized for specialized design elements. This strategy has been successful as the reservoir covers and liners require specialized design, and the in-house engineering staff does not routinely work in these areas of design.

After assessing the current workload and expertise of in-house staff, and the relative priority of this project, staff recommends continuing the use of both a specialized consultant and in-house staff to perform final design for the rehabilitation of Garvey Reservoir.

**Summary**

This action authorizes an amendment to an agreement with Arcadis U.S., Inc., for a new not-to-exceed amount of \$6.35 million, to provide engineering services to rehabilitate Garvey Reservoir. See **Attachment 1** for the Allocation of Funds, **Attachment 2** for the List of Subconsultants, and **Attachment 3** for the Location Map.

***Project Milestone***

November 2024 – Completion of final design to rehabilitate Garvey Reservoir

**Policy**

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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 52301, dated March 9, 2021, the Board authorized an agreement with Arcadis U.S., Inc., for engineering services to rehabilitate Garvey Reservoir.

By Minute Item 52778, dated April 12, 2022, the Board appropriated a total of \$600 million for projects identified in the Capital Investment Plan for Fiscal Years 2022/23 and 2023/24.

**California Environmental Quality Act (CEQA)**

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**CEQA determination for Option #1:**

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action provides for data collection, design, and technical support with no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under Class 6 (Section 15306) of the State CEQA Guidelines.

**CEQA determination for Option #2:**

None required

## Board Options

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### Option #1

Authorize an increase of \$5.4 million to an existing agreement with Arcadis U.S., Inc., for a new not-to-exceed total amount of \$6.35 million, for engineering design services to rehabilitate Garvey Reservoir.

**Fiscal Impact:** \$8.9 million in capital funds. Approximately \$7.2 million will be incurred in the current biennium and have been previously authorized. The remaining capital expenditures will be funded from future CIP budgets following board approval of those budgets.

**Business Analysis:** This action will sustain reliable operation of Garvey Reservoir within Metropolitan's distribution system.

### Option #2

Do not proceed with the agreement increase at this time.

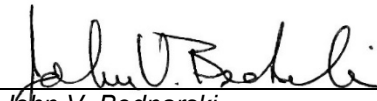

**Fiscal Impact:** None

**Business Analysis:** With this option, staff would continue to assess potential initiatives to minimize the risk of disruption to operations within the distribution system while an agreement for the required specialized services is authorized to proceed.

## Staff Recommendation

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### Option #1

	3/30/2023
_____ John V. Bednarski Manager/Chief Engineer Engineering Services	Date
	4/4/2023
_____ Adel Hagekhalil General Manager	Date

**Attachment 1 – Allocation of Funds**

**Attachment 2 – Listing of Subconsultants**

**Attachment 3 – Location Map**

Ref# es12694216

### **Allocation of Funds for Garvey Reservoir Rehabilitation**

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	<b>Current Board Action (Apr. 2023)</b>
Labor	
Studies & Investigations	\$ -
Final Design	1,900,000
Owner Costs (Program mgmt., envir. planning)	834,000
Construction Inspection & Support	-
Metropolitan Force Construction	-
Materials & Supplies	-
Incidental Expenses	-
Professional/Technical Services	
Arcadis U.S., Inc.	5,400,000
Value Engineering	100,000
Geotechnical Investigations	190,000
Environmental Documentation	100,000
Public Outreach	50,000
Contracts	-
Remaining Budget	326,000
<b>Total</b>	<b>\$ 8,900,000</b>

The total amount expended to rehabilitate Garvey Reservoir is approximately \$3.25 million. The total estimated cost to complete this project, including the amount appropriated to date, funds allocated for the work described in this action, and future construction costs, is anticipated to range from \$98.2 million to \$102.5 million.

**The Metropolitan Water District of Southern California**  
**Subconsultants for Agreement with Arcadis U.S., Inc.**  
**Garvey Reservoir Rehabilitation**

<b>Subconsultant and Location</b>	<b>Service Category; Specialty</b>
Hilts Consulting Group, Inc. Yorba Linda, CA	Structural Design; Reservoir Cover and Liner Design
Paul Hansen Engineering Rancho Palos Verdes, CA	Cost estimating
AirX Utility Surveyor, Inc Ontario CA	Utility Locating and Potholing Services
WestLAND Group, Inc Ontario, CA	Utility Mapping
HMC Architects Los Angeles, CA	Architectural Design
SC SOLUTIONS Sunnyvale, CA	Seismic Analysis

# Distribution System

