



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

6/11/2013 Board Meeting

7-6

Subject

Appropriate \$800,000; and authorize construction of upgrades to the sodium hypochlorite feed system at Garvey Reservoir (Approp. 15377)

Executive Summary

This action authorizes construction by Metropolitan forces to upgrade the sodium hypochlorite feed system at Garvey Reservoir. This project will maintain water quality for member agencies served by the reservoir.

Timing and Urgency

Upgrades to the sodium hypochlorite feed system at Garvey Reservoir are needed to maintain treated water quality within the Central Pool portion of Metropolitan's distribution system. The existing hypochlorite system has exceeded its expected service life and has deteriorated over time, requiring frequent repairs. Failure of the chemical feed system would negatively affect water quality within the distribution system by not providing a minimum chlorine residual. Staff recommends proceeding with upgrade of the sodium hypochlorite feed system at this time.

This project has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria, and is categorized as an Infrastructure Upgrade project. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2012/13.

Details

Background

Garvey Reservoir was constructed in 1954 as a component of the Middle Feeder system, and is located in the city of Monterey Park. The reservoir receives treated water from the Weymouth plant and has a maximum storage volume of 1,600 acre-feet. Garvey Reservoir provides operational flexibility to the Central Pool by stabilizing flow rates within the Middle Feeder and maintaining deliveries to member agency service connections when pipelines are shut down for maintenance.

In 1995, a sodium hypochlorite system was installed at the outlet of the reservoir to maintain minimum chlorine residual levels in order to prevent taste and odor issues at service connections downstream of the reservoir. The feed system includes pumps, valves, and flow meters to add the proper dosage of sodium hypochlorite to the treated water.

The existing hypochlorite feed system has been in operation for over 18 years. This type of equipment has a typical service life of 15-20 years due to the corrosive nature of sodium hypochlorite. Although the feed system has performed well, it has begun to deteriorate. For example, the existing diaphragm chemical feed pumps require frequent repairs, which are difficult because replacement parts are no longer available. The polyvinyl chloride chemical delivery piping and the outer pipe of the double-walled containment piping have become brittle due to weathering, and are now susceptible to leaks. A sodium hypochlorite leak must be treated as hazardous waste and requires special handling and disposal. Failure of the system would interrupt the delivery of sodium

hypochlorite to the Garvey Reservoir outlet line, which would impact water quality to downstream member agency service connections.

Final design of the hypochlorite feed system was initiated in 2010, and has now been completed. Staff recommends proceeding with construction at this time.

Garvey Reservoir Sodium Hypochlorite Upgrades – Construction (\$800,000)

Planned upgrades to the sodium hypochlorite feed system include the installation of heavy duty pumps, addition of chemical containment sensors and alarms to meet current fire code requirements, installation of new grating and foundations for equipment, modification of the equipment layout to improve access for maintenance and repairs, and addition of automation features to the system. All construction will be performed by Metropolitan forces.

This action appropriates \$800,000 and authorizes construction of upgrades to the Garvey Reservoir sodium hypochlorite feed system. The requested funds include \$547,000 for Metropolitan force construction labor; \$131,000 for material and supplies; \$57,000 for project management and controls, and for preparation of record drawings; and \$65,000 for remaining budget.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2012/13 capital expenditure plan. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Map.

The work is included within capital Appropriation No. 15377, the Conveyance and Distribution System Rehabilitation Program, which was initiated in fiscal year 2003/04. Other projects authorized under Appropriation No. 15377 include the Orange County Feeder Lining Repairs, Box Springs Feeder Repairs, and the West Valley Feeder No. 1 Valve Structure Modifications. With the present action, the total funding for Appropriation No. 15377 will increase from \$68,095,700 to \$68,895,700.

Project Milestone

March 2014 – Completion of construction to upgrade the sodium hypochlorite feed system at Garvey Reservoir

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

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; 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 proposed 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 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).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under four Categorical Exemptions (Class 1, Section 15301; Class 2, Section 15302; Class 3, Section 15303; and Class 4, Section 15304 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Appropriate \$800,000; and
- b. Authorize construction to upgrade the sodium hypochlorite feed system at Garvey Reservoir.

Fiscal Impact: \$800,000 of capital funds under Approp. 15377

Business Analysis: This project will maintain treated water quality within the distribution system.

Option #2



Do not authorize the upgrade project at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to protect Metropolitan’s assets and maintain treated water quality within the distribution system.

Staff Recommendation

Option #1

	5/21/2013
Gordon Johnson Manager, Chief Engineer Engineering Services Group	<i>Date</i>
	5/29/2013
Jeffrey Nightlinger General Manager	<i>Date</i>

Attachment 1 – Financial Statement

Attachment 2 – Location Map

Financial Statement for Conveyance and Distribution System Rehabilitation Program

A breakdown of Board Action No. 36 for Appropriation No. 15377 for the Garvey Reservoir Sodium Hypochlorite Feed System¹ is as follows:

	Previous Total Appropriated Amount (May 2013)	Current Board Action No. 36 (June 2013)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 4,031,700	\$ -	\$ 4,031,700
Final Design	5,470,456	-	5,470,456
Owner Costs (Program mgmt.)	5,957,050	38,000	5,995,050
Submittals Review & Record Drwgs	135,000	19,000	154,000
Construction Inspection & Support	2,785,550	-	2,785,550
Metropolitan Force Construction	15,187,548	547,000	15,734,548
Materials & Supplies	5,926,075	131,000	6,057,075
Incidental Expenses	1,454,620	-	1,454,620
Professional/Technical Services	1,516,500	-	1,516,500
Equipment Use	960,350	-	960,350
Contracts	23,465,669	-	23,465,669
Remaining Budget	1,205,182 ²	65,000	1,270,182
Total	\$ 68,095,700	\$ 800,000	\$ 68,895,700

Funding Request

Program Name:	Conveyance and Distribution System Rehabilitation Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15377	Board Action No.:	36
Requested Amount:	\$ 800,000	Capital Program No.:	15377-I
Total Appropriated Amount:	\$ 68,895,700	Capital Program Page No.:	283
Total Program Estimate:	\$ 117,505,000	Program Goal:	I-Infrastructure Reliability

¹The total amount expended to date on the Garvey Reservoir sodium hypochlorite feed system is approximately \$357,647.

²Reflects previous reallocation of \$175,043 from Remaining Budget for: (1) \$445,957 credit for projects completed under budget; (2) \$180,000 for the Garvey Reservoir sodium hypochlorite feed system to address additional deteriorated equipment identified during design; (3) \$206,000 for the Power Plant Discharge Elimination project for higher than expected material costs and sewer connection fees during construction; and (4) \$235,000 for the Orange County Feeder relining project for value engineering and additional environmental documentation to assess construction impacts identified during preliminary design.

Distribution System

