



● Board of Directors  
*Engineering and Operations Committee*

6/14/2011 Board Meeting

7-3

**Subject**

Appropriate \$510,000; and authorize agreement with Roctest, Inc. for upgrades of the Automated Data Acquisition System at Garvey Reservoir (Approp. 15441)

**Description**

This action authorizes an agreement to upgrade the existing Automated Data Acquisition System (ADAS) for real-time monitoring of groundwater levels and seepage at Garvey Reservoir. This system measures dam performance and enables prompt response in case of potential problems within the dam embankment or foundation.

**Timing and Urgency**

The current ADAS equipment at Garvey Reservoir has reached the end of its service life and is beginning to deteriorate and provide unreliable data. Repair of the equipment has become increasingly difficult as the units are no longer manufactured and spare parts are difficult to obtain. A new ADAS is needed to continue providing reliable record-keeping of the groundwater levels at the reservoir and to comply with an agreement with the city of Monterey Park.

The project has been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria and is categorized as an Infrastructure Rehabilitation and Replacement project. The project is budgeted within Metropolitan's CIP for fiscal year 2010/11.

**Background**

Garvey Reservoir receives treated water from the F. E. Weymouth Water Treatment Plant and supplies it to the Central Pool portion of Metropolitan's distribution system. It is located outside of Metropolitan's service area within the city of Monterey Park. The reservoir was constructed in 1954 and has a maximum capacity of 1,610 acre-feet. In 1989, seepage was observed at Garvey Reservoir due to damage from the 1987 Whittier Narrows earthquake. As a result, the reservoir was taken out of service for repairs. In 1993, a settlement agreement was reached between Monterey Park and Metropolitan to address that city's concerns about the reservoir. Under this agreement, Metropolitan is required to provide Monterey Park with groundwater level and seepage measurements at Garvey Reservoir on a daily basis. In 1999, the reservoir was placed back into service with an ADAS, which is comprised of a network of automatic sensing piezometers within the dam foundation and within the embankment under the perimeter road, along with recording and telemetry equipment.

The ADAS includes electronic water level sensors to continuously measure groundwater elevations, field-located data collection units to record water level data, and a network to store and transmit real-time data to Metropolitan and to Monterey Park. If predefined water levels in monitoring wells are exceeded, alarms will be activated at Metropolitan's Operations Control Center at Eagle Rock, where Metropolitan's distribution system is monitored on a 24-hour-per-day basis. This comprehensive dam monitoring system, which provides real-time data to better understand normal dam performance and to detect changes, is an effective and prudent measure to address public safety. Similar dam monitoring systems have been installed at Diamond Valley Lake and the Cajalco Creek Dam, and will be evaluated for Metropolitan's other dams during future upgrade projects.

**Garvey Reservoir ADAS Upgrades – Procurement and Installation (\$510,000)**

The use of instrumentation to enable real-time monitoring of groundwater levels and seepage provides comprehensive and timely information on dam performance. Changes in seepage patterns are typically the first indicators of possible problems in dam embankments or their foundations. The ADAS equipment at Garvey Reservoir has reached the end of its service life. The existing ADAS equipment is showing signs of deterioration, as evidenced by data loss and inaccurate data recording, which requires manual correction of the results. The existing system needs to be replaced.

The planned scope of work includes the procurement and installation of new automatic water sensing devices and high water level alarms within 41 piezometers and observation wells located around the reservoir; installation of four Remote Terminal Units (RTUs), one repeater assembly, and one base station with host computer; and integration of the new equipment with Metropolitan's Supervisory Control and Data Acquisition (SCADA) system. The planned system will provide more accurate data gathering and will improve the reliability of alarms sent to Metropolitan's Operations Control Center.

This action appropriates \$510,000 to procure and install a new ADAS at Garvey Reservoir. The system is recommended to be installed by Roctest, Inc., as discussed below. The appropriated funds include \$425,000 for the Roctest, Inc. agreement; \$39,200 for inspection and startup by Metropolitan staff; \$15,000 for project management; \$6,600 for submittals review; and \$24,200 for remaining budget.

**Roctest, Inc. – New Agreement**

Request for Proposals (RFP) No. 915 was issued in April 2010 for the procurement, installation and integration of a new ADAS at Garvey Reservoir. Staff reviewed proposals from four firms, and evaluated those proposals based on qualifications and staffing plan, costs, record of past performance, references, technical approach and methodology, guarantee of support and spare parts, environmental sensitivity, and project schedule. Roctest, Inc. was selected to provide the needed services based on the above listed evaluation criteria.

This action authorizes an agreement with Roctest, Inc., in an amount not to exceed \$425,000, for the procurement and installation of the Garvey Automated Data Acquisition System. For this agreement, Metropolitan has established a Small Business Enterprise (SBE) participation level of 10 percent.

**Summary**

This action appropriates \$510,000; authorizes procurement and installation of a new ADAS at Garvey Reservoir; and authorizes an agreement with Roctest, Inc. This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included within the fiscal year 2010/11 capital budget. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Map.

This project is included within capital Appropriation No. 15441, the Conveyance and Distribution System Rehabilitation Phase 2, which was initiated in fiscal year 2006/07. Appropriation No. 15441 also includes projects such as prestressed concrete cylinder pipe repairs on the Lake Skinner Outlet Conduit, Rialto Pipeline, San Diego Pipeline No. 5, and Sepulveda Feeder. With the present action for Garvey Reservoir, the total funding for Appropriation No. 15441 will increase from \$31,059,000 to \$31,569,000.

The project is consistent with Metropolitan's goals for sustainability by enhancing the reliability of the existing distribution system in order to maintain reliable water deliveries in the future.

**Project Milestone**

January 2012 – Completion of ADAS installation

## **Policy**

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Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

## **California Environmental Quality Act (CEQA)**

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CEQA determination for Option #1:

This project was previously determined to be categorically exempt under the provisions of CEQA and State CEQA Guidelines. The Board found this project to be exempt under Class 1, Section 15301; Class 2, Section 15302; and Class 3, Section 15303 of the State CEQA Guidelines on July 26, 2007. Additionally, at the Final Design phase of this project, the Board found this project to be exempt under Class 1, Section 15301; and Class 6, Section 15306 of the State CEQA Guidelines on February 27, 2008. A Notice of Exemption (NOE) was filed on the project in 2007 and 2008 and the statute of limitations has ended. With the current board actions, there are no substantial changes proposed to the project since the original NOEs were filed. Hence, the previous environmental documentations, in conjunction with the project, fully comply with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation is necessary for the Board to act with regards to the proposed actions.

The CEQA determination is: Determine that the proposed actions have been previously addressed in the July 26, 2007 NOE (Class 1, Section 15301; Class 2, Section 15302; and Class 3, Section 15303 of the State CEQA Guidelines) and in the February 27, 2008 NOE (Class 1, Section 15301; and Class 6, 15306 of the State CEQA Guidelines) and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

None required

## **Board Options**

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### **Option #1**

Adopt the CEQA determination and

- a. Appropriate \$510,000; and
- b. Authorize agreement with Roctest, Inc., in an amount not to exceed \$425,000, for Automatic Data Acquisition System upgrades at Garvey Reservoir.

**Fiscal Impact:** \$510,000 in budgeted funds under Approp. No. 15441

**Business Analysis:** These upgrades will enable continued real-time monitoring of dam performance, in accordance with Metropolitan's agreement with the city of Monterey Park.

### **Option #2**

Do not proceed with upgrades of the ADAS at Garvey Reservoir at this time.

**Fiscal Impact:** None

**Business Analysis:** This option would forego an opportunity to improve reliability of the ADAS at Garvey Reservoir. As existing equipment fails, staff would manually monitor piezometers and measure groundwater levels.

**Staff Recommendation**

Option #1



Gordon Johnson  
Manager, Chief Engineer, Engineering Services

5/20/2011  
Date



Jeffrey Kightlinger  
General Manager

6/1/2011  
Date

**Attachment 1 – Financial Attachment****Attachment 2 – Location Map**

Ref# es12610319

## **Financial Statement for Conveyance and Distribution System Rehabilitation Program – Stage 2**

A breakdown of Board Action No. 33 for Appropriation No. 15441 for the Automated Data Acquisition System Upgrades at Garvey Reservoir \* is as follows:

	<b>Previous Total Appropriated Amount (June 2011)</b>	<b>Current Board Action No. 33 (June 2011)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ 1,970,000	\$ -	\$ 1,970,000
Final Design	2,331,400	-	2,331,400
Owner Costs (Prog. mgmt)	3,722,350	15,000	3,737,350
Submittals Review	6,500	6,600	13,100
Inspection & Support	1,425,100	39,200	1,464,300
Metropolitan Force Construction	6,972,300	-	6,972,300
Materials and Supplies	1,438,100	-	1,438,100
Incidental Expenses	770,400	-	770,400
Professional/Technical Services	1,118,500	425,000	1,543,500
Equipment Use	228,200	-	228,200
Contracts	8,136,730	-	8,136,730
Remaining Budget	2,939,420	24,200	2,963,620
<b>Total</b>	<b>\$ 31,059,000</b>	<b>\$ 510,000</b>	<b>\$ 31,569,000</b>

### **Funding Request**

<b>Program Name:</b>	Conveyance and Distribution System Rehabilitation Program - Phase 2		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15441	<b>Board Action No.:</b>	33
<b>Requested Amount:</b>	\$ 510,000	<b>Capital Program No.:</b>	15441
<b>Total Appropriated Amount:</b>	\$ 31,569,000	<b>Capital Program Page No.:</b>	277
<b>Total Program Estimate:</b>	\$ 68,224,000	<b>Program Goal:</b>	Infrastructure Reliability

\* The total amount expended to date on the Garvey Reservoir ADAS project is approximately \$219,500.

