



- Board of Directors
Engineering and Operations Committee

5/10/2011 Board Meeting

7-1

Subject

Appropriate \$220,000; and authorize preliminary design of seismic upgrades for water tanks at the Sepulveda Canyon Control Facility (Approp. 15441)

Description

This action authorizes preliminary design of seismic upgrades for two water storage tanks at the Sepulveda Canyon Control Facility. These tanks are a critical component of the Sepulveda Feeder, which delivers treated water from the Jensen plant to Metropolitan's Central Pool. The planned upgrades will reduce the risk of significant damage to the water tanks in the event of a major earthquake, and the resulting disruption to treated water deliveries.

Timing and Urgency

Metropolitan has an ongoing program to evaluate the seismic stability of its structures in order to maintain reliable operation and to meet current seismic design practices and code requirements. Although Metropolitan facilities have always been designed to meet codes that were in place at the time of their construction, industry practices and code requirements are periodically updated, particularly following a major earthquake. Staff has recently completed a seismic assessment which identified that the Sepulveda Canyon Control Facility's two water storage tanks are seismically vulnerable. The water storage tanks require upgrades to maintain continued operation in the event of a significant earthquake. Due to the critical nature of the facility in delivering treated water into Metropolitan's Central Pool, and directly to the city of Los Angeles and West Basin Municipal Water District, staff recommends proceeding with preliminary design of the upgrades at this time.

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

Background

The Sepulveda Feeder is a 42-mile-long prestressed concrete cylinder and steel pipeline that conveys treated water from Metropolitan's Jensen plant in Granada Hills to an interconnection with the Second Lower Feeder in Torrance, and thence into Palos Verdes Reservoir. The Sepulveda Feeder varies in diameter from 50 to 86 inches and was constructed in the early 1970s. The Sepulveda Canyon Control Facility is located in the Sepulveda Pass, immediately west of the San Diego Freeway (I-405). The facility includes a pressure control structure, a control building, and two steel water storage tanks. These tanks are used to regulate and balance flows along the Sepulveda Feeder.

In April 2010, Metropolitan's Board authorized a risk assessment study of the two water storage tanks at the Sepulveda Canyon Facility. The assessment identified that a 6.8 magnitude earthquake on the Santa Monica Fault, which is located within one mile of the site, would cause significant damage to both water tanks, rendering the tanks inoperable. Extensive repairs would be required which could result in a complete shutdown of the Sepulveda Feeder for up to 3 months due to the unique challenges of repairing the tanks. This outage would shut

down 24 miles of pipeline downstream of the facility, impacting Metropolitan's ability to deliver treated water from the Jensen plant into the Central Pool.

Sepulveda Canyon Control Facility Seismic Upgrades – Preliminary Design Phase (\$220,000)

The two Sepulveda Canyon Control Facility water storage tanks are located in a highly visible area along Sepulveda Boulevard, in the vicinity of the J. Paul Getty Museum. The tanks are 41 feet high with diameters of 230 feet and 145 feet, and storage capacities of approximately 11.6 and 4.6 million gallons. Both tanks were constructed of welded steel in accordance with applicable codes of their time.

Proposed structural upgrades include reinforcing the tank shells and adding anchors to secure the tanks from overturning. A geotechnical site investigation and slope deformation analysis is recommended as part of preliminary design, since one tank is located near the edge of a slope. The geotechnical investigation is recommended to be performed by URS Corporation, as discussed below. All other activities will be performed by Metropolitan staff.

This action appropriates \$220,000 and authorizes preliminary design phase activities for seismic upgrades to the Sepulveda Canyon Control Facility water tanks. Planned activities include: field investigations, detailed engineering analyses of retrofit modifications, preparation of environmental documentation, code review and permitting, development of a construction cost estimate, and preparation of a preliminary design report. Staff will return to the Board at a later date for authorization of final design.

Specialized Technical Support – No Action Required

The geotechnical assessment is recommended to be performed by URS under an existing board-authorized agreement. Since geotechnical site investigations are a technical specialty for which Metropolitan does not have in-house expertise, Metropolitan relies on consulting firms for support. URS was selected through a competitive process via Request for Qualifications No. 931. For this agreement, Metropolitan has established a Small Business Enterprise (SBE) participation level of 18 percent. The estimated cost for these services is \$75,000. The scope will include drilling test borings, taking soil samples for laboratory testing, and assessing potential seismic hazards such as ground shaking, landslides, and slope instability.

Summary

This action appropriates \$220,000 and authorizes preliminary design of seismic upgrades for the Sepulveda Canyon Control Facility's water storage tanks. Staff will return to the Board at a later date for authorization of final design phase activities. This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in 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 Program - Phase 2, which was initiated in fiscal year 2006/07. Appropriation No. 15441 also includes other projects such as the Upper Feeder Service Connection Rehabilitation, Santa Ana River Bridge Seismic Retrofit, and the Lake Skinner Outlet Conduit Repair. With the present action, the total funding for Appropriation No. 15441 will increase from \$30,579,000 to \$30,799,000.

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

Project Milestone

December 2011 – Completion of preliminary design

Policy

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)

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 the funding and minor alterations of existing private or public facilities, along with minor modifications in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees. In addition, the proposed action consists of basic data collection and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource. This may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded. These activities would result in negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under Class 1, Class 4, and Class 6 Categorical Exemptions (Sections 15301, 15304 and 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under three Categorical Exemptions (Class 1, Section 15301; Class 4, Section 15304; and Class 6, Section 15306 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Appropriate \$220,000; and
- b. Authorize preliminary design of seismic upgrades for the Sepulveda Canyon Control Facility water storage tanks.

Fiscal Impact: \$220,000 in budgeted funds under Approp. 15441

Business Analysis: This option will protect Metropolitan's assets, enhance reliability of deliveries to member agencies, and reduce the risk of costly emergency repairs.

Option #2

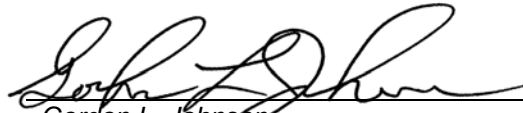
Do not proceed with the seismic upgrade retrofit at this time.

Fiscal Impact: None

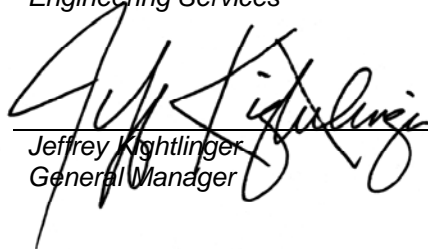
Business Analysis: This option would forego an opportunity to mitigate the risk of seismic failure of a critical component of Metropolitan's distribution system.

Staff Recommendation

Option #1


Gordon L. Johnson
Manager/Chief Engineer,
Engineering Services

4/19/2011
Date


Jeffrey Nightlinger
General Manager

4/25/2011
Date

Attachment 1 – Financial Statement

Attachment 2 – Location Map

Ref# es12609840

Financial Statement for Conveyance and Distribution System Rehabilitation Program – Phase II

A breakdown of Board Action No. 31 for Appropriation No. 15441 for the Sepulveda Canyon Control Facility Seismic Upgrades* is as follows:

	Previous Total Appropriated Amount (Jan. 2011)	Current Board Action No. 31 (May 2011)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 1,784,200	\$ 77,800	\$ 1,862,000
Final Design	2,331,400	-	2,331,400
Owner Costs (Program mgmt, permitting, envir. doc.)	3,645,750	49,400	3,695,150
Construction Inspection & Support	1,414,000	-	1,414,000
Metropolitan Force Construction	6,956,700	-	6,956,700
Materials and Supplies	1,438,100	-	1,438,100
Incidental Expenses	767,400	3,000	770,400
Professional/Technical Services (URS Corp.)	1,043,500	75,000	1,118,500
Equipment Use	228,200	-	228,200
Contracts	8,074,130	-	8,074,130
Remaining Budget	2,895,620	14,800	2,910,420
Total	\$ 30,579,000	\$ 220,000	\$ 30,799,000

Funding Request

Program Name:	Conveyance and Distribution System Rehabilitation Program - Phase II		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15441	Board Action No.:	31
Requested Amount:	\$ 220,000	Capital Program No.:	15441
Total Appropriated Amount:	\$ 30,799,000	Capital Program Page No.:	277
Total Program Estimate:	\$ 53,850,000	Program Goal:	Infrastructure Reliability

* The total amount expended to date on the Sepulveda Canyon Control Facility Seismic Retrofit project is approximately \$64,700.

Distribution System

