



- Board of Directors
Engineering and Operations Committee

3/12/2013 Board Meeting

7-3

Subject

Appropriate \$225,000; and authorize seismic assessments of three buildings at the F. E. Weymouth Water Treatment Plant (Approp. 15477)

Executive Summary

This action authorizes detailed seismic assessments of Metropolitan's Water Quality Laboratory, the Engineering Building, and the Central Stores Building on the grounds of the F. E. Weymouth Water Treatment Plant. Seismic upgrades would reduce the risk of significant damage to these buildings in the event of a major earthquake. This action also authorizes an agreement with IDS Group, Inc. for detailed structural analyses of these buildings.

Timing and Urgency

Metropolitan has an ongoing program to evaluate the seismic stability of its facilities in order to maintain reliable water deliveries 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, seismic upgrades are necessary as industry practices and code requirements are periodically updated. Staff conducted initial assessments of the Water Quality Laboratory, Engineering Building, and Central Stores Building, and concluded that these structures may be vulnerable to damage in the event of a significant earthquake. Due to the importance of these structures in maintaining treated water quality and supporting Metropolitan's emergency response capability, staff recommends proceeding with detailed seismic assessments of these buildings.

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

Details

Background

The Weymouth plant was placed into service in 1941 with an initial capacity of 100 million gallons per day (mgd), and was expanded twice to its present capacity of 520 mgd. The plant delivers a blend of waters from the Colorado River and the State Water Project to Metropolitan's Central Pool portion of the distribution system, and to an exclusive service area. Due to its central location and status as Metropolitan's first plant, many key support facilities such as the Water Quality Laboratory and Machine/Fabrication Shop are located on its grounds.

The Weymouth plant is located within the city of La Verne, approximately 1.5 miles from the Sierra Madre Fault, which is capable of generating a 7.0 magnitude earthquake. The original Weymouth plant facilities were constructed in accordance with the building codes of the early 1940s. Over time, additional structures were built on its site, in accordance with then-current building codes. Industry knowledge of earthquakes and seismic design has greatly improved over the years, leading to the development of more stringent, modern seismic codes. To minimize the risk of damage to the plant during a major earthquake, staff initiated a seismic assessment program in 2003 to identify and upgrade structures and major conduits which are potentially at risk. Through this effort,

several buildings at the Weymouth plant were identified to be in need of structural upgrades. The resulting projects have been prioritized and their schedules coordinated with other work planned at the plant.

Of the 32 structures and major conduits located at the Weymouth plant, 12 were found to be structurally adequate. Five have recently been upgraded, while 15 structures are being addressed as follows. Final design is presently underway for seismic upgrades to four structures: Filter Building No. 1, Filter Building No. 2, the East Washwater Tank, and the West Washwater Tank. Preliminary design is underway for upgrades to three structures: the plant's treatment basin inlet channel, the Administration Building, and the Control Building. The two softener buildings and three metal storage buildings will be the subject of future actions. This action addresses the three remaining structures: the Water Quality Laboratory, the Engineering Building, and Central Stores.

Water Quality Laboratory, Engineering Building, and Central Stores Seismic Upgrade – Study (\$225,000)

Recent initial seismic assessments at the La Verne site identified three buildings that may experience significant damage in a major earthquake: the southern portion of the Water Quality Laboratory, the Engineering Building, and Central Stores. The original 27,000-square-foot southern portion of the Water Quality Laboratory is a one-story concrete structure with steel-braced frames. It was constructed in 1985 to perform water quality testing for all of Metropolitan's treatment plants and the distribution system, and to support Metropolitan's efforts to assess emerging contaminants and future treatment technologies. Currently, more than 300,000 water quality analyses are conducted in this building each year to ensure that water deliveries to member agencies meet the highest water quality standards. The 19,400-square-foot Engineering Building is a one-story concrete tilt-up building constructed in 1970. It houses Metropolitan's construction inspectors, corrosion control and metallurgy engineers, and material and concrete testing technicians and their laboratory equipment. The 7,860-square-foot Central Stores Building is a one-story precast concrete tilt-up building constructed in 1968. Shipping and receiving for the Weymouth plant and the central portion of Metropolitan's distribution system, and for water treatment specialty items, are performed within the Central Stores Building. Long lead-time spare parts and equipment are also stored within the facility. Over 150 employees work in the three subject buildings. Staff recommends conducting detailed seismic assessments to develop suitable and cost-effective structural strengthening concepts.

This action appropriates \$225,000 and authorizes detailed assessments to seismically upgrade the Water Quality Laboratory, Engineering Building, and Central Stores. Requested funds include \$155,000 for development of conceptual design drawings, structural analyses, and evaluation of retrofit impacts on each building's functions; \$41,000 for permitting and project management; and \$29,000 for remaining budget. The work will primarily be performed by Metropolitan staff, with specialized support by IDS Group, Inc., as discussed below. Staff will return to the Board at a later date for authorization of preliminary design phase activities.

Specialized Structural Analyses - IDS Group, Inc. (No Action Required)

Specialized support for assessment of the Water Quality Laboratory, Engineering Building, and Central Stores is recommended to be provided by IDS Group, Inc. under a new professional services agreement. This agreement is planned to be awarded under the General Manager's Administrative Code authority. IDS Group will perform detailed structural modeling and develop preliminary retrofit concepts. IDS Group was selected through a competitive process via Request for Qualifications No. 1012, and is a Small Business Enterprise. The estimated cost for these services is \$81,000.

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.

This project is included within capital Appropriation No. 15477, the Weymouth Improvements Program – FY 2012/13 Through FY 2017/18. Other projects authorized under Appropriation No. 15477 include the Basin Inlet Channel Seismic Upgrades, Basin Inlet Gates Improvements, and Domestic and Fire Water System Upgrades. With the present action, the total funding for Appropriation No. 15477 will increase from \$1.02 million to \$1,245,000.

Project Milestone

August 2013 – Completion of seismic evaluation of the Water Quality Laboratory, Engineering Building, and Central Stores

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 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. Accordingly, the proposed action qualifies as a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under a Categorical Exemption (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 \$225,000; and
- b. Authorize detailed seismic assessments of the Water Quality Laboratory, Engineering Building, and Central Stores Building at the Weymouth plant.

Fiscal Impact: \$225,000 in capital funds under Approp. 15477

Business Analysis: This option will enhance water delivery reliability and worker safety in the event of a major earthquake and would bring key facilities into compliance with updated seismic and building codes requirements.

Option #2

Do not proceed with the seismic assessments at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to reduce seismic risks to key facilities at the Weymouth plant.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer
Engineering Services

2/20/2013
Date



Jeffrey Kightlinger
General Manager

2/25/2013
Date

Attachment 1 – Financial Statement

Attachment 2 – Location Map

Ref# es12621365

Financial Statement for Weymouth Improvements Program – FY 2012/13 Through FY 2017/18

A breakdown of Board Action No. 4 for Appropriation No. 15477 for the seismic upgrade of three buildings at the Weymouth plant¹ is as follows:

	Previous Total Appropriated Amount (Mar. 2013)	Current Board Action No. 4 (Mar. 2013)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 545,000	\$ 74,000	\$ 619,000
Final Design	71,000	-	71,000
Owner Costs	168,700	40,000	208,700
Submittals Review & Record Drwgs	-	-	-
Construction Inspection & Support	-	-	-
Metropolitan Force Construction	17,000	-	17,000
Materials & Supplies	500	-	500
Incidental Expenses	11,000	1,000	12,000
Professional/Technical Services	64,000	-	64,000
IDS Group, Inc.		81,000	81,000
Contracts	-	-	-
Remaining Budget	142,800	29,000	171,800
Total	\$ 1,020,000	\$ 225,000	\$ 1,245,000

Funding Request

Program Name:	Weymouth Improvements Program – FY 2012/13 Through FY 2017/18		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment, or General Funds		
Appropriation No.:	15477	Board Action No.:	4
Requested Amount:	\$ 225,000	Capital Program No.:	15477-I
Total Appropriated Amount:	\$ 1,245,000	Capital Program Page No.:	340
Total Program Estimate:	\$ 105,203,000	Program Goal:	I-Infrastructure & Reliability

¹ This action is the initial appropriation for seismic upgrade of the Water Quality Laboratory, Engineering Building, and Central Stores Building at the Weymouth plant.

Distribution System

