



- Board of Directors  
*Engineering and Operations Committee*

8/20/2013 Board Meeting

---

**8-4**

## **Subject**

---

Appropriate \$5.65 million; and award \$3,801,758 contract to J. F. Shea Construction, Inc., for seismic upgrades to the filter buildings at the F. E. Weymouth Water Treatment Plant (Approp. 15369)

## **Executive Summary**

---

This action awards a construction contract for seismic upgrades to the filter control buildings and filters at the F. E. Weymouth Water Treatment Plant. These structures house the plant's filtration process and need to be strengthened to prevent damage in the event of a major earthquake.

### **Timing and Urgency**

Metropolitan has an ongoing program to evaluate the seismic stability of its facilities in order to maintain reliable water deliveries and meet current seismic design practices and codes. While Metropolitan facilities have always been designed to meet codes that were in place at the time of their construction, structural improvements may be necessary as industry practices and code requirements are periodically updated.

A seismic assessment of the Weymouth filter buildings identified that these structures need to be strengthened to reduce the risk of damage following a major earthquake. Staff recommends proceeding with construction of the upgrades at this time.

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 2013/14.

## **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 State Water Project to Metropolitan's Central Pool portion of the distribution system, and to an exclusive service area. The Weymouth plant is located approximately 1.5 miles from the Sierra Madre Fault, which is capable of generating a 7.0 magnitude earthquake. The plant is located in the city of La Verne.

The original Weymouth facilities were constructed in accordance with the building codes of the late 1930s. Over time, additional structures were built on the site in accordance with then-current codes. Industry knowledge of earthquakes and seismic design has greatly improved over the years, leading to the development of more stringent 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 facilities at the Weymouth plant were identified to be in need of structural upgrades. Of the 32 structures and major conduits located on the plant site, 17 were found to be structurally adequate or have already been upgraded. Ten structures are currently being addressed with seismic assessments underway or with upgrades under design, while three structures will be the subject of future board actions. This action addresses the two remaining structures: Filter Building No. 1 and Filter Building No. 2.

The Weymouth plant has two integrated filter buildings. Filter Building No. 1 was completed in 1941 and was expanded in 1962, while Filter Building No. 2 was added in 1969. Each filter building has 24 multimedia filters and a control building which sits on the top deck. The structures have three levels. The lowest level consists of a sump which collects used filter backwash water. The middle level is comprised of the filter basins and galleries that house piping, valves, and equipment that operate and monitor the filters. The top level carries the control building that houses process control equipment for the filtration and backwash processes.

The planned seismic upgrades include reinforcement of the walls, floors, roof, and columns of the filter control buildings. To accommodate these upgrades, some existing electrical and mechanical equipment will be relocated. At the bottom level, new concrete piers will be added within the sump area below the filters.

Construction of the seismic upgrades will be completed during two shutdowns. The first shutdown will limit plant capacity to 260 mgd, and is scheduled to occur from December 2013 to February 2014. During this period, new concrete piers will be installed within the bottom sumps of both filter buildings. The second shutdown will limit plant capacity to 390 mgd, and is scheduled to occur from March to May 2014. During this period, existing electrical and mechanical equipment will be relocated in the control buildings to make room for reinforcement of columns. These shutdowns will not impact water deliveries to member agencies.

#### **Weymouth Filter Building Seismic Upgrades - Construction (\$5.65 million)**

Specifications No. 1713 for the Weymouth Filter Building Seismic Upgrades was advertised for bids on June 7, 2013. As shown in [Attachment 2](#), six bids were received and opened on July 18, 2013. The low bid from J. F. Shea Construction, Inc., in the amount of \$3,801,758, complies with the requirements of the specifications. The five higher bids ranged from approximately \$4.47 million to \$5.58 million. The engineer's estimate was \$4.57 million. For this contract, Metropolitan established a Small Business Enterprise (SBE) participation level of at least 20 percent of the bid amount.

This action appropriates \$5.65 million and awards a \$3,801,758 contract to J. F. Shea Construction, Inc. for seismic upgrades to the filter control buildings and filters at the Weymouth plant. In addition to the amount of the contract, the requested funds include \$208,000 for Metropolitan force construction, which includes field support to shut down portions of the filter buildings in sequence and return them to service. The requested funds also include \$481,000 for construction inspection; \$258,000 for submittals review and preparation of record drawings by Metropolitan design staff; \$283,000 for project management, environmental monitoring, and permitting with the city of La Verne; and \$618,242 for remaining budget. Metropolitan staff will perform inspection of the work, while environmental monitoring will be performed by Environmental Science Associates (ESA) under an existing professional services agreement. ESA was selected through a competitive process via Request for Qualifications (RFQ) No. 956. For this agreement, Metropolitan has established an SBE participation level of 18 percent. The estimated cost for these services is \$53,000.

The anticipated cost of inspection for this project is approximately 12 percent of the total construction cost. Engineering Services' goal for inspection of projects with construction cost greater than \$3 million is 9 to 12 percent. The total cost of construction is \$4,009,758.

The total estimated cost to complete the seismic upgrade of the two Weymouth filter buildings, including the amount expended to date and the current funds requested, is \$7.65 million.

This work has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2013/14 capital expenditure plan. See [Attachment 1](#) for the Financial Statement, [Attachment 2](#) for the Abstract of Bids, and [Attachment 3](#) for the Location Map.

This work will be performed under the Weymouth Improvements Program (Appropriation No.15369), which was initiated in fiscal year 2001/02. With the present action, the total amount appropriated for this program will increase from \$163,442,000 to \$169,092,000.

#### ***Project Milestone***

March 2015 – Completion of construction of filter building seismic upgrades

## Policy

---

Metropolitan Water District Administrative Code Section 5108: Appropriations

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

## California Environmental Quality Act (CEQA)

---

CEQA determination for Option #1:

The environmental effects from the Filter Building Seismic Upgrades Project were evaluated in the F. E. Weymouth Filtration Plant Ozonation Facilities and Site Improvements Program Final Environmental Impact Report (Final EIR), which was certified by the Board on April 12, 2005. The Board also approved the Findings of Fact (Findings), the Statement of Overriding Considerations, the Mitigation Monitoring and Reporting Program (MMRP), and the project itself. The current Board action is solely based on award of a construction contract for the Filter Building Seismic Upgrades Project, and not on any changes to the approved program itself. Hence, the previous environmental documentation acted on by the Board in conjunction with the proposed action fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation is necessary for the Board to act on the proposed action.

The CEQA determination is: Determine that the proposed action has been previously addressed in the certified 2005 Final EIR, Findings, SOC, and MMRP, and 2007 Addendum, and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

None required

## Board Options

---

### Option #1

Adopt the CEQA determination that the proposed action has been previously addressed in the certified EIR and that no further environmental analysis or documentation is required and

- a. Appropriate \$5.65 million; and
- b. Award \$3,801,758 million contract to J. F. Shea Construction, Inc. for seismic upgrades to the Weymouth filter buildings.

**Fiscal Impact:** \$5.65 million in capital funds under Approp. 15369

**Business Analysis:** This option will enhance reliability of the water treatment process at the Weymouth plant and meet updated seismic and building code requirements.

### Option #2

Do not award the construction contract and re-advertise in an attempt to receive more favorable bids.

**Fiscal Impact:** None

**Business Analysis:** This option may or may not result in lower bids, and would delay the needed seismic upgrades.

**Staff Recommendation**

---

Option #1

 7/31/2013  
Gordon Johnson *Date*  
Manager/Chief Engineer  
Engineering Services

 8/7/2013  
Jeffrey Knightlinger *Date*  
General Manager

**Attachment 1 – Financial Statement**

**Attachment 2 – Abstract of Bids**

**Attachment 3 – Location Map**

Ref# es12625715

## Financial Statement for Weymouth Improvements Program

A breakdown of Board Action No. 39 for Appropriation No. 15369 for the Weymouth Filter Building Seismic Upgrades<sup>1</sup> is as follows:

	<b>Previous Total Appropriated Amount (March 2012)</b>	<b>Current Board Action No. 39 (Aug. 2013)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ 2,801,477	\$ -	\$ 2,801,477
Final Design	9,836,141	-	9,836,141
Owner Costs (Program mgmt., permitting)	7,989,275	223,000	8,212,275
Submittals Review & Record Drwgs.	2,889,723	258,000	3,147,723
Construction Inspection & Support	13,550,690	481,000	14,031,690
Metropolitan Force Construction	7,424,780	208,000	7,632,780
Materials & Supplies	2,393,046	6,000	2,399,046
Incidental Expenses	717,748	1,000	718,748
Professional/Technical Services	12,768,100	-	12,768,100
ESA	-	53,000	53,000
Equipment Use	-	-	-
Contracts	100,467,852	3,801,758	104,269,610
Remaining Budget	2,603,168 <sup>2</sup>	618,242	3,221,410
<b>Total</b>	<b>\$ 163,442,000</b>	<b>\$ 5,650,000</b>	<b>\$ 169,092,000</b>

## Funding Request

<b>Program Name:</b>	Weymouth Improvements Program		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15369	<b>Board Action No.:</b>	39
<b>Requested Amount:</b>	\$ 5,650,000	<b>Budget Page No.:</b>	338
<b>Total Appropriated Amount:</b>	\$ 169,092,000	<b>Total Program Estimate:</b>	\$ 296,443,000

<sup>1</sup> The total amount expended to date on the Weymouth Filter Building Seismic Upgrade Project is approximately \$2,000,000. The total estimated amount to complete this project, including the amount expended to date and the current funds requested, is \$7,650,000.

<sup>2</sup> Reflects previous reallocation of \$4,309,465 from Remaining Budget for: (1) \$1,181,000 for the Weymouth coagulant tank farm for additional costs to enlarge the Uninterruptible Power Supply and extend the construction schedule to minimize conflicts with other construction projects; (2) \$2,700,000 for the Weymouth rapid mix and fire/domestic water system to relocate utility interferences and settle weather delays to the contractor's schedule; (3) \$175,000 for the Weymouth incoming electrical service for S. C. Edison revisions to accommodate the city of LaVerne; (4) \$245,000 for structural analyses of the Weymouth Administration Building to minimize construction costs on future seismic upgrades; (5) \$8,465 to assess future treatment technologies which may be applicable to the treatment basin refurbishment project.

**The Metropolitan Water District of Southern California**

**Abstract of Bids Received on July 18, 2013 at 2:00 P.M.**

**Specifications No. 1713**

**F. E. Weymouth Water Treatment Plant Filter Building Seismic Upgrades**

The work consists of seismic upgrades to the filter control buildings and filters at the F. E. Weymouth Water Treatment Plant.

**Engineer's Estimate: \$4,570,000**

<b>Bidder and Location</b>	<b>Total</b>	<b>SBE \$</b>	<b>SBE %</b>	<b>Met SBE<sup>1</sup></b>
<b>J. F. Shea Construction, Inc., Walnut, CA</b>	<b>\$3,801,758</b>	<b>\$996,108</b>	<b>26%</b>	<b>Yes</b>
Kana Engineering Group, Inc., Rancho Cucamonga, CA	\$4,469,000	-	--	
Environmental Construction, Inc., Woodland Hills, CA	\$4,851,058	-	--	
Stronghold Engineering, Inc., Riverside, CA	\$4,971,217	-	--	
Icon West, Inc., Los Angeles, CA	\$5,170,000	-	--	
Morillo Construction. Inc., Pasadena, CA	\$5,580,000	-	--	

<sup>1</sup> SBE (Small Business Enterprise) participation level was established at 20 percent for this contract.

# Distribution System

