



- Board of Directors
Engineering and Operations Committee

10/14/2014 Board Meeting

8-8

Subject

Appropriate \$2.3 million; and award \$1,465,000 contract to Kiewit Infrastructure West Co. for seismic upgrades to the east washwater tank at the F. E. Weymouth Water Treatment Plant (Approp. 15369)

Executive Summary

This action awards a construction contract for seismic upgrades to the east washwater tank at the F. E. Weymouth Water Treatment Plant. This tank stores water for backwashing filters and is a critical component of the Weymouth plant's filtration process.

Timing and Urgency

Metropolitan has an ongoing program to evaluate the seismic stability of its facilities 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 up-to-date codes that were in place at the time of their construction, industry practices and code requirements are periodically updated, particularly following a major earthquake.

Structural assessments of the two washwater tanks at the Weymouth plant identified that they are seismically vulnerable and should be upgraded to reduce the risk of damage from a major seismic event. Due to the importance of the tanks for the plant's filtration process, the work has been phased to minimize impacts to plant operations. Staff recommends proceeding with upgrades to the first of the two tanks at this time. Staff will return to the board in fiscal year 2016/17 to award a construction contract for the west tank.

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 2014/15.

Details

Background

The Weymouth plant was placed into service in 1941 with an initial capacity of 100 million gallons per day (mgd), and has been expanded twice to its current treatment capacity of 520 mgd. The plant delivers a blend of waters from the Colorado River Aqueduct 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 in the city of La Verne, approximately 1.5 miles south of the Sierra Madre Fault. This fault is capable of generating a 7.0-magnitude earthquake.

The Weymouth plant utilizes two aboveground welded steel tanks to store filtered water for use in backwashing filters. Backwashing cleanses the filters after they have been on-line for 20 to 80 hours in active filtration service. A small portion of the filtered water is pumped into and stored in the plant's washwater tanks, from which it is released by gravity to backwash dirty filters when needed.

The Weymouth washwater tanks have storage capacities of 1 million and 1.3 million gallons. The west tank measures 48 feet in diameter by 71 feet high and was placed into service in 1941. The east tank measures 60 feet

in diameter by 63 feet high and was erected in the early 1960s. Both tanks were designed and constructed in accordance with applicable codes of their time.

As part of Metropolitan's seismic assessment program, staff conducted detailed structural evaluations of the two washwater tanks. The evaluations were based on current building codes and updated site-specific geotechnical information. These evaluations concluded that both tanks require structural upgrades to withstand a significant earthquake.

In September 2011, Metropolitan's Board authorized final design of seismic upgrades to the two washwater tanks. The work has been phased so that one tank will remain in service at all times. Upgrades to the east tank will proceed first in order to avoid potential conflicts with construction of the adjacent hypochlorite feed facilities. Final design of the east tank upgrades has been completed, and staff recommends proceeding with construction at this time. Final design of the west tank upgrades is currently underway. Staff will return to the Board to award a construction contract for the west tank in fiscal year 2016/17.

Planned upgrades for the east tank include the addition of 2-foot-diameter concrete drilled piles and a grade beam under the perimeter of the tank; a new anchorage system; relocation of electrical equipment due to interferences with the foundation improvements; installation of a flexible coupling at the 42-inch-diameter outlet pipe; and replacement of the tank isolation valve.

Weymouth East Washwater Tank Seismic Upgrades – Construction (\$2.3 million)

Specifications No. 1730 for the Weymouth East Washwater Tank Seismic Upgrades was advertised for bids on August 25, 2014. As shown in [Attachment 2](#), four bids were received and opened on September 16, 2014. The low bid from Kiewit Infrastructure West Co. in the amount of \$1,465,000 complies with the requirements of the specifications. The three higher bids ranged from approximately \$1.56 million to \$1.79 million, while the engineer's estimate was \$1.37 million. For this contract, Metropolitan established a Small Business Enterprise participation level of at least 20 percent of the total bid amount.

This action appropriates \$2.3 million and awards a \$1,465,000 contract to Kiewit Infrastructure West Co. for seismic upgrades to the east washwater tank at the Weymouth plant. In addition to the amount of the contract, the requested funds include \$228,000 for construction support by Metropolitan forces, which includes dewatering, modification of the plant's Supervisory Control and Data Acquisition (SCADA) system, testing, and final disinfection. The requested funds also include \$230,000 for construction inspection; \$115,000 for submittals review and record drawing preparation by Metropolitan staff; \$120,000 for hazardous materials management, contract administration, and project management; and \$142,000 for remaining budget.

Metropolitan staff will perform inspection of the construction contract. For this project, the anticipated cost of inspection is approximately 13.6 percent of the total construction cost. Engineering Services' goal for inspection of projects with construction cost less than \$3 million is 9 to 15 percent. For this project, the total cost of construction, which includes the construction contract and Metropolitan force support, is \$1.69 million.

The total estimated cost to complete the seismic upgrades to the two washwater tanks, including the amount authorized to date, current funds requested, and future construction costs, is anticipated to range from \$5.5 million to \$6 million.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2014/15 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 project is included within capital Appropriation No. 15369, the Weymouth Improvements Appropriation, which was initiated in fiscal year 2001/02. With the present action, the total funding for Appropriation No. 15369 will increase from \$171,879,000 to \$174,179,000.

Project Milestone

December 2015 – Completion of seismic upgrades to the east washwater tank

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 environmental effects from the Washwater Tank 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 authorizing award of a construction contract for the Washwater Tank 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 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 this action has been previously addressed in the certified EIR and that no further environmental analysis or documentation is required, and

- a. Appropriate \$2.3 million; and
- b. Award \$1,465,000 contract to Kiewit Infrastructure West Co. for seismic upgrades to the Weymouth plant's east washwater tank.

Fiscal Impact: \$2.3 million in capital funds under Approp. 15369

Business Analysis: This option will enhance reliability and continued operation of the Weymouth plant in the event of a significant earthquake.

Option #2

Do not proceed with the project at this time.

Fiscal Impact: None

Business Analysis: This option would forgo an opportunity to reduce the risk of delivery interruptions from the Weymouth plant following a major seismic event.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer,
Engineering Services

9/30/2014

Date



Jeffrey Kightlinger
General Manager

10/1/2014

Date

Attachment 1 – Financial Statement

Attachment 2 – Abstract of Bids

Attachment 3 – Location Map

Ref# es12632666

Financial Statement for Weymouth Improvements Appropriation

A breakdown of Board Action No. 42 for Appropriation No. 15369 for seismic upgrades to the Weymouth washwater tanks¹ is as follows:

	Previous Total Appropriated Amount (May 2014)	Current Board Action No. 42 (Oct. 2014)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 2,801,477	\$ -	\$ 2,801,477
Final Design	10,648,141	-	10,648,141
Owner Costs (Program mgmt.)	8,497,275	120,000	8,617,275
Submittals Review & Record Drwgs	3,147,723	115,000	3,262,723
Construction Inspection & Support	14,031,690	230,000	14,261,690
Metropolitan Force Construction	7,973,780	215,000	8,188,780
Materials & Supplies	2,729,046	5,000	2,734,046
Incidental Expenses	723,748	8,000	731,748
Professional/Technical Services	13,748,100	-	13,748,100
Equipment Use	-	-	-
Contracts	105,774,610	1,465,000	107,239,610
Remaining Budget	1,803,410 ²	142,000	1,945,410
Total	\$ 171,879,000	\$ 2,300,000	\$ 174,179,000

Funding Request

Appropriation Name:	Weymouth Improvements Appropriation		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15369	Board Action No.:	42
Requested Amount:	\$ 2,300,000	Budget Page No.:	323
Total Appropriated Amount:	\$ 174,179,000	Total Appropriation Estimate:	\$241,000,000

¹The total amount expended to date on the Weymouth washwater tanks seismic upgrades is approximately \$704,000. The total estimated cost to complete this project, including the amount authorized to date, current funds requested, and future construction costs, is anticipated to range from \$5.5 million to \$6 million.

²Reflects previous reallocation of \$1,505,000 from Remaining Budget for the Weymouth power system upgrades for additional construction costs, due to the complexities of upgrading aged facilities while keeping the plant in operation.

The Metropolitan Water District of Southern California
Abstract of Bids Received on September 16, 2014 at 2:00 P.M.
Specifications No. 1730
Weymouth East Washwater Tank Seismic Upgrades

The work consists of installation of a new anchorage system and supplemental foundation, installation of a flexible coupling at the tank outlet pipe, and replacement of the existing 42-inch diameter tank isolation valve.

Engineer's Estimate: \$1,370,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE¹
Kiewit Infrastructure West Co., Santa Fe Springs, CA	\$ 1,465,000	\$ 289,759	20.39%	Yes
Steve P. Rados, Inc., Santa Ana, CA	\$ 1,560,000	–	–	–
J. F. Shea Construction, Inc., Walnut, CA	\$ 1,664,084	–	–	–
Mladen Buntich Construction Co., Inc., Upland, CA	\$ 1,794,000	–	–	–

¹ SBE (Small Business Enterprise) participation level was established at 20% for this contract

Distribution System

