



● **Board of Directors**
Engineering and Operations Committee

7/14/2015 Board Meeting

8-2

Subject

Appropriate \$2.35 million; and award \$1,292,000 contract to Kiewit Infrastructure West Co. to replace hydraulic gates at the F. E. Weymouth Water Treatment Plant (Approps. 15369 and 15440)

Executive Summary

This action awards a construction contract to replace shutoff gates at the finished water reservoir and water channels at the F. E. Weymouth Water Treatment Plant. Following 50-70 years of continuous operation, the existing gates have deteriorated and need to be replaced. This work is scheduled to be completed during the Weymouth plant's next full-plant shutdown in February 2016.

Timing and Urgency

The Weymouth finished water reservoir is classified as a dam by the California Division of Safety of Dams (DSOD). Per DSOD requirements, the reservoir's shutoff gates must be maintained in fully functional condition. During a scheduled inspection conducted in March 2011, water leakage was detected at the reservoir's outlet and bypass gates. These gates are exhibiting signs of corrosion and deterioration, and need to be replaced.

Within the hydraulic channels located throughout the Weymouth plant, drop gates are employed to dewater individual channels in order to perform maintenance and repairs. Many of the carbon steel drop gates at the Weymouth plant are corroded and need to be replaced. Fourteen drop gates should be addressed at this time in order to proceed with needed valve replacement work at Filter Buildings Nos. 1 and 2.

Both sets of gates will be installed during a shutdown of the Weymouth plant scheduled for February 2016. Each project has been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria, and each is included in the Treatment Plant Reliability Program. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2015/16.

Details

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 a service area within Los Angeles and Orange Counties. The Weymouth plant is located in the city of La Verne.

Metropolitan staff conducts regular maintenance of the Weymouth plant's structures, mechanical components, and electrical equipment. Although the plant continues to perform reliably today, its systems are exhibiting signs of normal wear and tear, as may be expected from more than 50 years of continuous operation. Two projects are recommended to move forward at this time in order to maintain plant reliability and comply with DSOD requirements.

Project No. 1 – Finished Water Reservoir Gate Replacement – Construction (\$2,020,000)

The finished water reservoir at the Weymouth plant has three inlet gates, three outlet gates, and three bypass gates. Properly functioning gates are required to comply with DSOD requirements and to isolate the reservoir

when it is removed from service for maintenance. All nine gates were installed when the reservoir was constructed in 1964. Each 8-foot by 8-foot slide gate is motor-operated and fabricated of ribbed carbon steel plate, mounted vertically within a gate guide. The gates are routinely exercised to verify proper operation.

Despite receiving regular maintenance over their service life, the reservoir gates are exhibiting signs of corrosion and deterioration. In 2005, a routine test revealed that one of the inlet gates would not close due to corrosion of both the gate and its guides. During the next scheduled plant shutdown in 2006, water leakage was detected at the other inlet gates. As a result, all three inlet gates were replaced, and the six outlet and bypass gates were inspected during a March 2011 shutdown. The six other gates and guides were also found to be corroded and in need of replacement, along with two motor control centers that provide electrical service to the reservoir gates. In November 2013, Metropolitan's Board authorized design to replace the six remaining gates. A \$780,024 procurement contract for fabrication of the gates was awarded in September 2014.

Project No. 2 - Basin and Filter Drop Gate Replacement – Construction (\$330,000)

The Weymouth plant utilizes 20 drop gates to isolate and dewater individual hydraulic channels within the treatment basins and filters in order to perform needed maintenance and repairs. These gates were installed in phases between the 1940's and 1960's. Each drop gate consists of a ribbed carbon steel plate, approximately 12 feet wide by 10 feet tall, which fits into a steel U-shaped guide located within a channel. When a basin needs to be isolated, gates are dropped by crane into their guides, and the isolated channels are dewatered.

Staff has assessed the condition of the Weymouth plant's existing drop gates and gate guides, and found that many of the gates leak due to corrosion of the steel. Rehabilitation or replacement of the existing gates has been prioritized based on their condition. The initial stage of work included the installation of six new gates and guides during December 2006 and March 2011 plant shutdowns. In November 2013, Metropolitan's Board authorized design and procurement to replace the remaining 14 drop gates.

Since installation of both the reservoir gates and the basin/filter drop gates may only occur during a full-plant shutdown, both projects have been consolidated into a single construction contract for efficiency. Design has been completed, and staff recommends moving forward with installation of the gates during an upcoming Weymouth plant shutdown. This shutdown is scheduled for February 2016, when all water-containing structures and conduits will be completely dewatered.

Construction Contract Award

Specifications No. 1784 to replace hydraulic gates at the Weymouth plant was advertised for bids on May 7, 2015. As shown in [Attachment 2](#), three bids were received and opened on June 9, 2015. The low bid from Kiewit Infrastructure West Co. in the amount of \$1,292,000 complies with the requirements of the specifications. The two higher bids were \$1,333,028 and \$2,688,230, while the engineer's estimate was \$2 million. Staff investigated the difference between the engineer's estimate and the low bid and attributes the difference to the current competitive bidding climate and the contractor's planned efficiencies for work performed round-the-clock under shutdown conditions.

For this contract, Metropolitan established a Small Business Enterprise (SBE) participation level of at least 25 percent of the bid amount. Kiewit Infrastructure West Co. has committed to meet this level of participation. The subcontractors for this contract are listed in [Attachment 3](#).

This action appropriates \$2.35 million and awards a \$1,292,000 contract to Kiewit Infrastructure West Co. to install reservoir gates and basin/filter drop gates at the Weymouth plant. In addition to the amount of the contract, the requested funds include \$234,000 for construction support by Metropolitan forces, which includes installation of a Remote Terminal Unit, Supervisory Control and Data Acquisition (SCADA) integration, start-up of motor control centers, and gate testing. The requested funds also include \$293,000 for construction inspection; \$207,000 for submittals review, technical support, and record drawing preparation; \$96,000 for DSOD reporting and project management; and \$228,000 for remaining budget.

Inspection of the construction will be performed by Metropolitan staff. For this project, the anticipated cost of inspection is approximately 9.8 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 is approximately \$2.98 million, which includes the contract (\$1,292,000), reservoir gate procurement (\$780,024), drop gate fabrication (\$671,000) and Metropolitan force activities (\$234,000).

This work has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2015/16 capital expenditure plan. See [Attachment 1](#) for the Financial Statements, [Attachment 2](#) for the Abstract of Bids, [Attachment 3](#) for the List of Subcontractors, and [Attachment 4](#) for the Location Map.

The total estimated cost to complete the gate replacement at the Weymouth finished water reservoir, including the amount appropriated to date and current funds requested, is approximately \$4.55 million. The Reservoir Gate Replacement project is included within capital Appropriation No. 15440, the Weymouth Improvements Program – FY 2006/07 Through FY 2011/12, which was initiated in fiscal year 2006/07. With the present action, the total funding for Appropriation No. 15440 will increase from \$15,418,000 to \$17,438,000.

The total estimated cost to complete the basin and filter drop gate replacement, including the amount appropriated to date and current funds requested, is approximately \$2.17 million. The Basin and Filter Drop Gate Replacement project is included within capital Appropriation No. 15369, the Weymouth Improvements Program – FY 2001/02 Through 2005/06, which was initiated in fiscal year 2001/02. With the present action, the total funding for Appropriation No. 15369 will increase from \$177,709,802 to \$178,039,802. ***Project Milestone***

March 2016 – Completion of construction

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 overall activities involve the funding, minor alterations and replacement of existing facilities with negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under Class 1 and Class 2 Categorical Exemptions (Sections 15301 and 15302 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under two Categorical Exemptions (Class 1, Section 15301 and Class 2, Section 15302 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination that the proposed action is categorically exempt, and

- a. Appropriate \$2.35 million; and
- b. Award \$1,292,000 contract to Kiewit Infrastructure West Co. to replace hydraulic gates at the Weymouth plant.

Fiscal Impact: \$2.02 million in capital funds under Approp. No. 15440, and \$330,000 in capital funds under Approp. No. 15369

Business Analysis: This option will maintain compliance with water quality and dam safety regulations, and will enhance reliability of the Weymouth plant.

Option #2

Do not proceed with construction at this time.

Fiscal Impact: None

Business Analysis: This option would require an additional full-plant shutdown at the Weymouth plant in order to replace the gates at a later date.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer
Engineering Services
6/22/2015
Date



Jeffrey Kightlinger
General Manager
7/1/2015
Date

Attachment 1 – Financial Statements

Attachment 2 – Abstract of Bids

Attachment 3 – Subcontractors for Low Bidder

Attachment 4 – Location Map

Ref# es12637101

Financial Statement for Weymouth Improvements Appropriation

A breakdown of Board Action No. 44 for Appropriation No. 15369 to replace basin and filter drop gates at the Weymouth plant¹ is as follows:

	Previous Total Appropriated Amount (June 2015)	Current Board Action No. 44 (July 2015)	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.)	8,042,984	26,000	8,068,984
Submittals Review & Record Drwgs	3,262,723	30,000	3,292,723
Construction Inspection & Support	14,261,690	37,000	14,298,690
Metropolitan Force Construction	8,188,780	27,000	8,215,780
Materials & Supplies	2,678,526	10,000	2,688,526
Incidental Expenses	718,341	5,000	723,341
Professional/Technical Services	13,748,100	-	13,748,100
Equipment Use	-	-	-
Contracts	110,770,412	-	110,770,412
Kiewit Infrastructure West Co.	-	195,000	195,000
Remaining Budget	2,588,628	-	2,588,628
Total	\$ 177,709,802	\$ 330,000	\$ 178,039,802

Funding Request

Appropriation Name:	Weymouth Improvements Appropriation		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15369	Board Action No.:	44
Requested Amount:	\$330,000	Budget Page No.:	323
Total Appropriated Amount:	\$178,039,802	Total Appropriation Estimate:	\$241,000,000

¹The total amount expended to date on the Weymouth Basin Drop Gate Replacement project is approximately \$1,199,000. The total estimated cost to complete this project, including the amount appropriated to date and current funds requested, is approximately \$2.17 million.

Financial Statement for Weymouth Improvements Appropriation – FY 2006/07 Through FY 2011/12

A breakdown of Board Action No. 20 for Appropriation No. 15440 to replace gates at the Weymouth plant’s finished water reservoir¹ is as follows:

	Previous Total Appropriated Amount (Sep. 2014)	Current Board Action No. 20 (July 2015)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 1,179,500	\$ -	\$ 1,179,500
Final Design	2,276,093	-	2,276,093
Owner Costs (Program mgmt., permitting)	1,501,154	70,000	1,571,154
Submittals Review & Record Drwgs	236,100	177,000	413,100
Construction Inspection & Support	1,030,600	256,000	1,286,600
Metropolitan Force Construction	571,100	128,000	699,100
Materials & Supplies	1,263,024	56,000	1,319,024
Incidental Expenses	84,800	8,000	92,800
Professional/Technical Services	974,000	-	974,000
Equipment Use	2,500	-	2,500
Contracts	5,730,112	-	5,730,112
Kiewit Infrastructure West Co.	-	1,097,000	1,097,000
Remaining Budget	569,017 ²	228,000	797,017
Total	\$ 15,418,000	\$ 2,020,000	\$ 17,438,000

Funding Request

Appropriation Name:	Weymouth Improvements Appropriation – FY 2006/07 Through FY 2011/12		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15440	Board Action No.:	20
Requested Amount:	\$2,020,000	Budget Page No.:	325
Total Appropriated Amount:	\$17,438,000	Total Appropriation Estimate:	\$73,100,000

¹The total amount expended to date on the Weymouth Reservoir Gate Replacement project is approximately \$1.11 million. The total estimated cost to complete this project, including the amount appropriated to date and current funds requested, is approximately \$4.55 million.

²Includes previous reallocation from Remaining Budget of \$248,500 for final design of two motor control centers that support the finished water reservoir gates; \$243,709 for additional construction costs for Weymouth chemical feed piping and containment upgrades; and \$32,320 returned to Remaining Budget due to completion of the Weymouth Filter Demonstration project below budget.

The Metropolitan Water District of Southern California

Abstract of Bids Received on June 9, 2015 at 2:00 P.M.

Specifications No. 1784

F. E. Weymouth Water Treatment Plant Finished Water Reservoir Gate Replacement

The work consists of demolition and replacement of three bypass gates and three outlet gates at the finished water reservoir, including refurbishment of existing wall thimbles and installation of new gate actuators; replacement of two motor control centers at the reservoir's inlet and outlet structures; and installation of drop gate guides at 14 locations inside the plant's water channels.

Engineer's Estimate: \$2,000,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE¹
Kiewit Infrastructure West Co. Santa Fe Springs, CA	\$1,292,000	\$317,650	28.8%	Yes
J. F. Shea Construction, Inc. Walnut, CA	\$1,333,028	-	-	-
PCL Construction, Inc. Corona, CA	\$2,688,230	-	-	-

¹ SBE (Small Business Enterprise) participation level established at 25 percent for this contract

The Metropolitan Water District of Southern California

Subcontractors for Low Bidder

Specifications No. 1784

Weymouth Finished Water Reservoir Gate Replacement

Low Bidder: Kiewit Infrastructure West Co.

Subcontractor and Location
GGG Demolition, Inc., Orange, CA
Dean's Certified Welding, Inc., Temecula, CA
Cor-Ray Painting Co., Inc., Santa Fe Springs, CA
CSI Electric, Santa Fe Springs, CA

