



- Board of Directors  
*Engineering and Operations Committee*

5/14/2013 Board Meeting

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**8-4**

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## **Subject**

Appropriate \$6.3 million; award \$3,032,940.84 contract to Val-Matic Valve & Manufacturing for procurement of rubber-lined butterfly valves; award \$281,550.85 contract to DeZURIK for procurement of high-performance butterfly valves; and authorize: (1) final design for installation of filter valves at the Diemer plant; and (2) professional services agreement with Carollo Engineers, Inc. (Approps. 15436 and 15369)

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## **Executive Summary**

This action awards two procurement contracts for 267 butterfly valves to replace existing filter valves at the Robert B. Diemer Water Treatment Plant, and authorizes final design for installation of these valves. This action also authorizes a professional services agreement for preliminary design to replace similar filter valves at the F. E. Weymouth Water Treatment Plant. These projects will enhance reliability and performance of the water treatment process at the Diemer and Weymouth plants. Funds for the Weymouth work were previously appropriated, and no additional funds are required under this action.

## **Timing and Urgency**

The filter valves at the Diemer and Weymouth plants have been in continuous service for over 50 years. Despite receiving regular maintenance, these valves have gradually deteriorated over time. Detailed inspections conducted over the last several shutdown seasons identified various stages of corrosion and degradation of embedded seals. In addition, many of the valves leak. Staff has concluded that the filter valves at the Diemer and Weymouth plants need to be replaced. Due to the long lead-time needed to procure valves, and the importance of the Diemer and Weymouth plants in delivering treated water to Metropolitan's Central Pool, staff recommends award of the valve procurement contract and proceeding with design activities at this time.

These projects have been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria, and are categorized as Infrastructure Reliability projects. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2012/13.

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## **Details**

### **Background**

The Diemer plant was placed into service in 1963 with an initial capacity of 200 million gallons per day (mgd). In 1969, the plant was expanded to its present treatment capacity of 520 mgd. The Weymouth plant was placed into service in 1941 with an initial capacity of 100 mgd, and was expanded twice to its current capacity of 520 mgd. Both plants deliver a blend of waters from the Colorado River and State Water Project to Metropolitan's Central Pool portion of the distribution system and to exclusive service areas. The Diemer plant is located in the city of Yorba Linda, while the Weymouth plant is located in the city of La Verne.

In a typical filtration cycle, filters are operated by opening and closing a series of valves which allow water to flow in and out of the filter beds during filtration and backwashing. These valves are designed to close tightly to prevent mixing of filtered and unfiltered water and to prevent leakage into the washwater reclamation system.

Over the life of the Diemer and Weymouth plants, staff has performed regular maintenance on the filter valves to support reliable plant operation. However, gradual deterioration of the valves has occurred through continuous use, including corrosion of the valve bodies and degradation of the embedded seals. These valves do not conform to the current American Water Works Association (AWWA) standard and are no longer manufactured. As a result, direct replacement valves are not available. During the years following construction of these filters, Metropolitan shifted to standardized valves and now typically specifies the use of AWWA-type valves. AWWA Standard No. C504-06 establishes the design requirements which represent a consensus of the water industry to provide uniform, suitable, and economical valves. To enable these modern valves to be installed at the Diemer and Weymouth plants, modifications will be required to the filter piping, electrical conduits, structural supports, and other appurtenances, while a number of conflicting utilities will need to be relocated.

In March 2011, Metropolitan's Board authorized final design to replace the Diemer filter valves. This action awards two procurement contracts for all 267 filter valves needed at the Diemer plant. In March 2011, the Board also authorized preliminary design to replace filter valves at the Weymouth plant. This action authorizes a professional services agreement to support the preliminary design effort at the Weymouth plant.

### **Diemer Filter Valve Replacement – Procurement and Final Design (\$6,300,000)**

The Diemer plant has 48 filters in two modules. Each filter contains five filter valves, and each module is operated in conjunction with two large-diameter isolation valves in the backwash system, and six isolation valves in the surface wash system. The existing 256 filter valves were installed during the original plant construction in 1963 and during the plant expansion in 1969. The filter valves range in diameter from 16 to 48 inches.

The existing valves have received routine maintenance over their 45 to 50 years in service, but have gradually deteriorated over time. During a March 2007 Diemer plant shutdown, staff dismantled several of the valves and identified various stages of corrosion, including severely corroded discs and worn-out embedded elastomer seals that leak excessively. Since that time, additional valves have been inspected on a regular basis, with similar findings. Staff has concluded that all of the filter valves need to be replaced. Most of the motorized actuators used to open and close the valves are in good condition, and appear to require only minor refurbishment. As a result, actuator replacement is not recommended at this time.

Procurement specifications for the Diemer filter valves have been divided into two packages which include furnishing 203 rubber-lined butterfly valves ranging in diameter from 30 to 48 inches, and furnishing 64 high-performance butterfly valves ranging in diameter from 16 to 30 inches. This total of 267 valves includes 11 spare units. Fabrication and delivery of the valves is expected to take approximately 14 months. Staff will return to the Board at a later date for award of a contract to install the valves and modify the filter galleries.

Piping and equipment modifications will be required within the galleries to accommodate the dimensional differences and revised actuator locations of the new valves. Installation procedures will be optimized to reduce the duration that each filter module will be out of service. Planned final design phase activities for installation of the valves include field investigations using 3-dimensional survey technology to efficiently detail the existing valve locations, adjacent equipment, and electrical conduits, in order to resolve dimensional conflicts prior to construction; design of piping and electrical modifications; design of extension shafts, support stands and adapter spools to connect the new valves to existing piping; hazardous materials investigation; preparation of drawings and specifications; development of a construction cost estimate; receipt of competitive bids; and all other activities in advance of award of a construction contract. All final design activities will be performed by Metropolitan staff.

### **Award of Valve Procurement Contracts**

Specifications No. 1729 for furnishing 203 rubber-lined butterfly valves for the Diemer plant was advertised for bids on March 8, 2013. As shown in [Attachment 2](#), six bids were received and opened on April 4, 2013. The low bid from Val-Matic Valve & Manufacturing, in the amount of \$3,032,940.84, complies with the requirements of the specifications. Based on a survey of vendors, the budgetary cost estimate for this equipment ranged from \$4 million to \$5 million. Specifications No. 1745 for furnishing 64 high-performance butterfly valves for the Diemer plant was advertised for bids on March 14, 2013. As shown in [Attachment 2](#), six bids were received and

opened on April 10, 2013. The low bid was deemed to be nonresponsive. The lowest responsive bid was received from DeZURIK, in the amount of \$281,550.85. This bid complies with the requirements of the specifications. Based on a survey of vendors, the budgetary cost estimate for the high-performance butterfly valves ranged from \$500,000 to \$600,000. Staff investigated the differences between the budgetary cost estimates and low bids for the two contracts and believes that the combination of the current highly competitive bidding climate and the large volume of valves to be procured resulted in the lower bid amounts. Due to the highly specialized nature of the filter valves, no Small Business Enterprise (SBE) participation level was established for the two procurement contracts.

This action appropriates \$6.3 million, awards a \$3,032,940.84 contract to Val-Matic Valve & Manufacturing, awards a \$281,550.85 contract to DeZURIK, and authorizes final design for installation of the valves at the Diemer plant. The contract amounts include all sales and use taxes imposed by the state of California. In addition to the amounts of the contracts, the appropriated funds include \$485,000 for fabrication inspection and functional testing; \$300,000 for materials and supplies, and for valve storage; \$139,000 for review of submittals and responses to requests for information; \$1.1 million for final design and field investigations for installation of the valves; \$331,000 for shutdown planning, contract administration, receipt of bids for the installation contract, and for project management; and \$630,508 for remaining budget.

The anticipated cost of final design is approximately 11.9 percent of the estimated construction cost. Engineering Services' goal for design of projects with construction cost greater than \$3 million is 9 to 12 percent. The construction cost for this project is anticipated to range from \$12 million to \$14 million, including the purchase cost of the valves.

**Agreement for Preliminary Design to Replace Weymouth Filter Valves – Carollo Engineers, Inc. (No funds required)**

Metropolitan's plan for execution of capital projects to meet board-adopted schedules relies on the use of both in-house staff and professional consultants. Due to the assignment of key technical staff to critical infrastructure projects, Metropolitan has insufficient in-house resources to complete the preliminary design for the Weymouth Filter Valve Replacement within the planned timeline. Staff recommends that Carollo Engineers, Inc. perform preliminary design to replace filter valves at the Weymouth plant. The planned scope of work includes determining modifications of piping, electrical equipment, control systems, and other items required for the valve and actuator installations; developing final design criteria; preparing conceptual layout drawings; developing a preliminary construction cost estimate; and assisting with a third-party value engineering review. The estimated cost for these services is \$243,000. Carollo Engineers was selected through a competitive process via Request for Qualifications No. 927. For this agreement, Metropolitan has established an SBE participation level of 20 percent.

This action authorizes a professional services agreement with Carollo Engineers, Inc., in an amount not to exceed \$243,000, for preliminary design to replace filter valves at the Weymouth plant. No additional funds are required under this action, as sufficient funds were previously appropriated to conduct preliminary design for this project.

**Summary**

This action appropriates \$6.3 million; awards two procurement contracts to furnish butterfly valves; authorizes final design for installation of the procured valves at the Diemer plant; and authorizes a professional services agreement for preliminary design to replace filter valves at the Weymouth plant. Both projects have 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, [Attachment 2](#) for the Abstracts of Bids, and [Attachment 3](#) for the Location Map.

The Diemer Filter Valve Replacement project is included within the Diemer Improvements Program - FY 2006/07 through FY 2011/12 (Appropriation No. 15436), which was initiated in fiscal year 2006/07. Other projects authorized under Appropriation No. 15436 include the Diemer Hatch Cover Replacement; Lower Maintenance Road Rehabilitation; the East Washwater Tank Roof Refurbishment; and the Filter Building Seismic

Upgrades. With the present action, the total funding for Appropriation No. 15436 will increase from \$26,919,000 to \$33,219,000.

The Weymouth Filter Valve Replacement project is included within capital Appropriation No. 15369, the Weymouth Improvements Program, which was initiated in fiscal year 2001/02. Other projects authorized under Appropriation No. 15369 include the Weymouth Coagulant Tank Farm Modifications; Junction Structure Seismic Upgrades; Rapid Mix System; and Electrical Upgrades. With the present action, the total funding for Appropriation No. 15369 will remain at \$163,442,000.

### ***Project Milestones***

December 2013 – Completion of preliminary design for replacement of Weymouth filter valves

July 2014 – Delivery of the Diemer filter valves

### **Policy**

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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)**

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CEQA determination for Option #1:

#### **Diemer Filter Valve Replacement – Procurement and Final Design**

The proposed actions involve funding, design, equipment procurement, and minor alterations, reconstruction or replacement of existing public facilities with negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed actions qualify under Class 1, Class 2, and Class 6 Categorical Exemptions (Sections 15301, 15302, and 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed actions are exempt from CEQA pursuant to Sections 15301, 15302, and 15306 of the State CEQA Guidelines.

#### **Agreement for Preliminary Design for Weymouth Filter Valves – Carollo Engineers, Inc.**

The proposed actions consist 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 actions qualify for a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines). In addition, the proposed actions are not subject to CEQA because they involve other government fiscal activities, which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed actions are exempt from CEQA pursuant to Sections 15306 and 15378(b)(4) of the State CEQA Guidelines.

CEQA determination for Option #2:

#### **Diemer Filter Valve Replacement – Procurement and Final Design**

None required

#### **Agreement for Preliminary Design for Weymouth Filter Valves – Carollo Engineers, Inc.**

The proposed actions consist 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 actions qualify for a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines). In addition, the proposed actions are not subject to CEQA because they involve other

government fiscal activities, which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed actions are exempt from CEQA pursuant to Sections 15306 and 15378(b)(4) of the State CEQA Guidelines.

**Board Options**

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**Option #1**

Adopt the CEQA determinations and

- a. Appropriate \$6.3 million;
- b. Award \$3,032,940.84 contract to Val-Matic Valve & Manufacturing to furnish rubber-lined butterfly valves;
- c. Award \$281,550.85 contract to DeZURIK to furnish high-performance butterfly valves;
- d. Authorize final design for installation of filter valves at the Diemer plant; and
- e. Authorize agreement with Carollo Engineers, Inc., in an amount not to exceed \$243,000, for preliminary design to replace filter valves at the Weymouth plant.

**Fiscal Impact:** \$6.3 million of capital funds under Approp. 15436

**Business Analysis:** This option will enhance reliability and performance of the filters at the Diemer and Weymouth plants.

**Option #2**

Adopt the CEQA determination and

- a. Do not award the procurement contracts and readvertise in an attempt to receive more favorable bids; and
- b. Authorize agreement with Carollo Engineers, Inc., in an amount not to exceed \$243,000, for preliminary design to replace filter valves at the Weymouth plant.

**Fiscal Impact:** None

**Business Analysis:** This option may or may not result in lower bids, and would extend the duration of filter valve replacement projects by another shutdown season.

**Staff Recommendation**

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Option #1

 4/22/2013  
 \_\_\_\_\_  
 Date

Gordon Johnson  
Manager/Chief Engineer,  
Engineering Services

 4/29/2013  
 \_\_\_\_\_  
 Date

Jeffrey Kightlinger  
General Manager

[Attachment 1 – Financial Statement](#)

[Attachment 2 – Abstracts of Bids](#)

[Attachment 3 – Location Map](#)

### **Financial Statement for Diemer Improvements Program – FY 2006/07 Through FY 2011/12**

A breakdown of Board Action No. 16 for Appropriation No. 15436 for the Diemer Filter Valve Replacement project<sup>1</sup> is as follows:

|                                      | <b>Previous Total<br/>Appropriated<br/>Amount<br/>(Oct. 2012)</b> | <b>Current Board<br/>Action No. 16<br/>(May 2013)</b> | <b>New Total<br/>Appropriated<br/>Amount</b> |
|--------------------------------------|---|---|--|
| Labor                                |   |   |  |
| Studies & Investigations             | \$ 766,600  | \$ -  | \$ 766,600                                   |
| Final Design                         | 4,359,600   | 1,030,000   | 5,389,600                                    |
| Owner Costs (Program mgmt., bidding) | 2,431,438   | 294,000   | 2,725,438                                    |
| Submittals Review                    | 632,100   | 136,000   | 768,100                                      |
| Construction Inspection & Support    | 1,693,791   | 313,000   | 2,006,791                                    |
| Metropolitan Force Construction      | 2,512,400   | 37,000  | 2,549,400                                    |
| Materials & Supplies                 | 1,602,914   | 306,000   | 1,908,914                                    |
| Incidental Expenses                  | 112,993   | 163,000   | 275,993                                      |
| Professional/Technical Services      | 1,001,943   | 76,000  | 1,077,943                                    |
| Equipment Use                        | 43,155  | -   | 43,155                                       |
| Contracts                            | 10,577,795  | -   | 10,577,795                                   |
| Val-Matic Valve & Manufacturing      | -   | 3,032,941   | 3,032,941                                    |
| DeZURIK                              | -   | 281,551   | 281,551                                      |
| Remaining Budget                     | 1,184,271 <sup>2</sup>  | 630,508   | 1,814,779                                    |
| <b>Total</b>                         | <b>\$ 26,919,000</b>  | <b>\$ 6,300,000</b>                                   | <b>\$ 33,219,000</b>                         |

### **Funding Request**

|                                   |   |                                |               |
|-----------------------------------|---|--------------------------------|---------------|
| <b>Program Name:</b>              | Diemer Improvements Program – FY 2006/07 Through FY 2011/12   |                                |               |
| <b>Source of Funds:</b>           | Revenue Bonds, Replacement and Refurbishment or General Funds |                                |               |
| <b>Appropriation No.:</b>         | 15436   | <b>Board Action No.:</b>       | 16            |
| <b>Requested Amount:</b>          | \$ 6,300,000  | <b>Budget Page No.:</b>        | 298           |
| <b>Total Appropriated Amount:</b> | \$ 33,219,000   | <b>Total Program Estimate:</b> | \$ 90,377,000 |

<sup>1</sup> The total amount expended to date on the Diemer Filter Valve Replacement project is approximately \$450,000.

<sup>2</sup> Includes previous reallocation of \$50,000 from Remaining Budget to Final Design for preparation of procurement documents for the Diemer Filter Valve Replacement.

**The Metropolitan Water District of Southern California**

**Abstract of Bids Received on April 4, 2013 at 2:00 P.M.**

**Specifications No. 1729**

**Furnishing Rubber-Lined Butterfly Valves for the  
Robert B. Diemer Water Treatment Plant**

This contract includes furnishing the following types of valves:

1. Fifty 30-inch-diameter filter backwash valves
2. Fifty 30-inch-diameter filter inlet valves
3. Fifty 24-inch-diameter filter outlet valves
4. Twenty-five 48-inch-diameter filter drain valves
5. Twenty-five 42-inch-diameter filter drain valves
6. Three 36-inch-diameter filter isolation valves

**Estimated Range of Cost: \$4,000,000 to \$5,000,000**

| <b>Bidder and Location</b>                               | <b>Total <sup>1,2</sup></b> | <b>Evaluated Bid <sup>3</sup></b> |
|--|-----------------------------|-----------------------------------|
| <b>Val-Matic Valve &amp; Manufacturing, Elmhurst, IL</b> | <b>\$3,032,940.84</b>       | <b>\$3,249,141.00</b>             |
| DeZurik, Sartell, MN                                     | \$3,105,396.40              | \$3,263,196.00                    |
| Valve Solutions, Inc., Alpharetta, GA                    | \$3,471,721.00              | \$3,873,521.00                    |
| Crispin Valve, Berwick, PA                               | \$3,691,781.00              | \$3,864,981.00                    |
| GA Industries LLC, Cranberry Township, PA                | \$4,014,543.38              | \$4,475,543.00                    |
| Henry Pratt Company LLC, Aurora, IL                      | \$6,309,131.00              | \$6,525,331.00                    |

<sup>1</sup> Includes sales and use taxes of 8.75 percent imposed by the state of California.

<sup>2</sup> Due to the highly specialized nature of these valves, no Small Business Enterprise (SBE) participation level was established for the procurement contract.

<sup>3</sup> The evaluated bid included an equalizing factor for inspection that was added to each bidder's price for award purposes only.

**The Metropolitan Water District of Southern California**

**Abstract of Bids Received on April 10, 2013 at 2:00 P.M.**

**Specifications No. 1745**

**Furnishing High-Performance Butterfly Valves for the  
Robert B. Diemer Water Treatment Plant**

This contract includes furnishing sixty-two 16-inch-diameter filter surface wash valves and two 30-inch-diameter backwash valves.

**Estimated Range of Cost: \$500,000 to \$600,000**

| <b>Bidder and Location</b>                  | <b>Total<sup>1,2</sup></b> | <b>Evaluated Bid<sup>3</sup></b> |
|---|----------------------------|----------------------------------|
| Cole Industrial, Tampa, FL <sup>4</sup>     | \$234,940.04               | N/A <sup>4</sup>                 |
| <b>DeZURIK, Sartell, MN</b>                 | <b>\$281,550.85</b>        | <b>\$343,351.00</b>              |
| Bray Controls, Houston, TX                  | \$363,850.08               | \$486,850.00                     |
| Valve Solutions, Inc., Alpharetta, GA       | \$371,462.40               | \$494,462.00                     |
| KPR Consulting, Inc., Irvine, CA            | \$387,610.00               | \$510,610.00                     |
| Water Technology Resources, Bloomington, MN | \$591,460.00               | \$714,460.00                     |

<sup>1</sup> Includes sales and use taxes of 8.75 percent imposed by the state of California.

<sup>2</sup> Due to the highly specialized nature of these valves, no Small Business Enterprise (SBE) participation level was established for the procurement contract.

<sup>3</sup> The evaluated bid included an equalizing factor for inspection that was added to each bidder's price for award purposes only.

<sup>4</sup> Nonresponsive bid.

# Distribution System

