



- Board of Directors  
*Engineering and Operations Committee*

10/9/2012 Board Meeting

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**8-1**

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## **Subject**

Appropriate \$3.42 million; award \$1,912,990.78 procurement contract to Val-Matic Valve & Manufacturing; and authorize final design to replace filter valves at the Joseph Jensen Water Treatment Plant (Approp. 15371)

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## **Executive Summary**

This action awards a procurement contract for 82 butterfly valves to replace existing filter valves at the Joseph Jensen Water Treatment Plant's Module No. 1, and authorizes final design for installation of the new valves. This project will enhance the reliability and performance of the filters at the Jensen plant.

### **Timing and Urgency**

The Jensen plant's Module No. 1 filters have been in continuous service for over 40 years. Despite receiving regular maintenance, the filter valves have gradually deteriorated over time, including corrosion of the valve body and degradation of embedded seals. Based on inspections conducted by staff during recent plant shutdowns, the filter valves at Module No. 1 have reached the end of their service life and need to be replaced. Due to the long lead-time needed to procure valves, and the importance of the Jensen plant in delivering treated water to Metropolitan's Central Pool, staff recommends moving forward with procurement of the Jensen filter valves 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 2012/13.

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## **Details**

### **Background**

The Jensen plant was placed into service in 1972 with an initial capacity of 400 million gallons per day (mgd). It was expanded in the early 1990s to its current capacity of 750 mgd. The plant exclusively treats water from the West Branch of the State Water Project and delivers it to the Central Pool portion of Metropolitan's distribution system, and to exclusive service areas on the west side of the distribution system. The Jensen plant is located in Granada Hills.

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 Jensen plant, staff has performed regular maintenance on the filter valves to support reliable plant operation. However, gradual deterioration of the valves at Module No. 1 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.

In March 2011, Metropolitan's Board authorized Phase 1 final design for the rehabilitation of filter valves at the Jensen and Diemer plants, which focused on determining the most feasible and cost-effective approach to rehabilitate the valves. Two activities were initiated: (1) A pilot program to identify vendors capable of refurbishing existing filter valves at Jensen Module No. 1 and at the Diemer plant; and (2) Preparation of procurement documents to purchase new replacement valves. The refurbishment work, if proven successful, would consist of replacement of embedded seals, repair of corroded valve bodies, and repair or replacement of rubber linings.

The pilot program has now been completed. Staff found that potential refurbishment vendors, including the original valve manufacturers, did not show interest in refurbishing the filter valves and would not provide a warranty for the refurbishment work. In addition, despite a nationwide search, vendors could not be located with sufficient production capacity to meet Metropolitan's needs, or with the demonstrated experience in valve rehabilitation work of this nature. In summary, large-scale refurbishment of Metropolitan's filter valves does not appear viable at this time.

As a result of this outcome, staff recommends proceeding with the procurement of new valves to enable the phased replacement of filter valves to move forward at Jensen Module No. 1 and at the Diemer plant. This action awards a procurement contract for all 82 filter valves needed at the Jensen plant. Staff will return to the Board in the future for award of a similar contract for the Diemer plant.

#### **Jensen Module No. 1 Filter Valve Replacement – Procurement and Final Design (\$3,420,000)**

The Jensen plant's Module No. 1 contains 20 filters which have been in continuous service since 1972. Each filter has four filter valves which range in diameter from 30 to 48 inches. These valves are operated in conjunction with two 42-inch diameter isolation valves in the Module No. 1 backwash system, for a total of 82 valves.

During a January 2007 Jensen plant shutdown, four valves in Filter No. 16 were removed and replaced. The remaining 78 valves have been monitored and inspected during recent shutdowns. The inspections identified that these valves no longer provide a water-tight seal and do not operate reliably, due to corrosion of the steel valve bodies and deterioration of embedded elastomeric seals. All remaining filter valves need to be replaced. The motorized actuators that open and close the valves appear to be in good condition, and actuator replacement is not recommended at this time.

Procurement specifications for rubber-lined AWWA-standard butterfly valves have been prepared, and competitive bids have been received. The procurement includes 78 replacement valves and one spare valve per size, for a total of 82 valves. The fabrication and delivery time is expected to be 12 to 14 months. Staff will return to the Board at a later date for award of a contract to install the filter valves.

Planned final design phase activities for installation of the valves include the preparation of drawings and specifications; design of piping and electrical modification within the filter galleries; 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.

Piping and equipment modifications will be required inside the galleries to accommodate the dimensional differences and revised actuator locations for the new valves. The final design work will include field investigations using 3-dimensional (3-D) survey technology to efficiently detail the existing valve locations, equipment, and conduits, and to identify possible dimensional conflicts prior to construction.

#### **Award of Filter Valve Procurement Contract**

Specifications No. 1699A for furnishing 82 rubber-lined butterfly valves for the Jensen plant was advertised for bids on August 2, 2012. As shown in [Attachment 2](#), five bids were received and opened on August 28, 2012. The low bid was deemed to be non-responsive. The lowest responsive bid from Val-Matic Valve & Manufacturing, in the amount of \$1,912,990.78, complies with the requirements of the specifications. The budgetary cost estimate for this equipment, based on a survey of vendors, ranged from \$2 million to \$3 million.

Due to the highly specialized nature of this equipment, no Small Business Enterprise participation level was established for the procurement contract.

This action appropriates \$3.42 million; awards a \$1,912,990.78 contract to Val-Matic Valve & Manufacturing to furnish 82 rubber-lined butterfly valves for the Jensen plant; and authorizes final design for installation of the procured valves. The contract amount includes all sales and use taxes imposed by the state of California. In addition to the amount of the contract, the appropriated funds include \$260,000 for fabrication inspection and functional testing; \$115,000 for review of submittals and responses to requests for information; \$402,000 for field investigations including 3-D surveys, and for preparation of drawings and specifications for installation of the valves; \$160,000 for contract administration, receipt of bids for the installation contract, and for project management; and \$570,009 for remaining budget.

The anticipated cost of final design is approximately 10.2 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 \$7.5 million to \$8 million, including the purchase cost of the valves.

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, [Attachment 2](#) for the Abstract of Bids, and [Attachment 3](#) for the Location Map.

The Jensen Module No. 1 Filter Valve Replacement project is included within capital Appropriation No. 15371, the Jensen Water Treatment Plant Improvements Program, which was initiated in fiscal year 2001/02. Other projects authorized under Appropriation No. 15371 include the Ferric Chloride Retrofit; Filter Media Replacement; Solids Thickeners Nos. 5 and 6; and the Administration Building Seismic Upgrades. With the present action, the total funding for Appropriation No. 15371 will increase from \$32,932,000 to \$36,352,000.

### ***Project Milestones***

June 2013 – Board award of contract to install the new filter valves at Jensen Module No. 1

October 2013 – Delivery of the 82 butterfly valves

June 2014 – Completion of installation of the new 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:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The overall activities involve the funding, design, minor alterations and replacement of existing public facilities with 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**

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**Option #1**

Adopt the CEQA determination and

- a. Appropriate \$3.42 million;
- b. Award \$1,912,990.78 contract to Val-Matic Valve & Manufacturing to furnish 82 butterfly valves; and
- c. Authorize final design for installation of filter valves at Jensen Module No. 1.

**Fiscal Impact:** \$3.42 million of capital funds under Approp. 15371

**Business Analysis:** This option will enhance the reliability and operating efficiency of the Jensen plant.

**Option #2**

Do not award the valve procurement contract and readvertise in an attempt to receive more favorable bids.

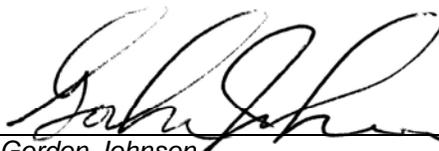
**Fiscal Impact:** Unknown

**Business Analysis:** This option may or may not result in a lower bid, and would increase the risk of reduced plant capacity if filters were taken out of service as a result of valve failures.

**Staff Recommendation**

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Option #1

 9/17/2012  
 \_\_\_\_\_ Date  
 Gordon Johnson  
 Manager/Chief Engineer  
 Engineering Services

 9/26/2012  
 \_\_\_\_\_ Date  
 Jeffrey Kightlinger  
 General Manager

[Attachment 1 – Financial Statement](#)

[Attachment 2 – Abstract of Bids](#)

[Attachment 3 – Location Map](#)

## Financial Statement for Jensen Water Treatment Plant Improvements Program

A breakdown of Board Action No. 18 for Appropriation No. 15371 for the Jensen Module No. 1 Filter Valve Replacement project<sup>1</sup> is as follows:

	<b>Previous Total Appropriated Amount (Aug. 2012)</b>	<b>Current Board Action No. 18 (Oct. 2012)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ 1,244,850	\$ -	\$ 1,244,850
Final Design	2,901,553	359,000	3,260,553
Owner Costs (Program mgmt., bidding process)	3,359,798	160,000	3,519,798
Construction Inspection & Support	1,996,400	215,000	2,211,400
Submittals Review	-	115,000	115,000
Metropolitan Force Construction	2,153,400	-	2,153,400
Materials & Supplies (3-D survey eqpt.)	2,127,219	40,000	2,167,219
Incidental Expenses	164,484	48,000	212,484
Professional/Technical Services	4,010,498	-	4,010,498
Equipment Use	84,000	-	84,000
Contracts	14,357,506	1,912,991	16,270,497
Remaining Budget	532,292	570,009	1,102,301
<b>Total</b>	<b>\$ 32,932,000</b>	<b>\$ 3,420,000</b>	<b>\$ 36,352,000</b>

## Funding Request

<b>Program Name:</b>	Jensen Water Treatment Plant Improvements Program		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15371	<b>Board Action No.:</b>	18
<b>Requested Amount:</b>	\$ 3,420,000	<b>Capital Program No.:</b>	15371-I
<b>Total Appropriated Amount:</b>	\$ 36,352,000	<b>Capital Program Page No.:</b>	312
<b>Total Program Estimate:</b>	\$ 100,925,000	<b>Program Goal:</b>	I-Infrastructure Reliability

<sup>1</sup> The total amount expended to date on the Jensen Module No. 1 Filter Valve Replacement project is approximately \$980,000.

**The Metropolitan Water District of Southern California**  
**Abstract of Bids Received on August 28, 2012 at 2:00 P.M.**  
**Specifications No. 1699A**  
**Furnishing Eighty-Two Rubber-Lined Butterfly Valves for the**  
**Joseph Jensen Water Treatment Plant Module No. 1**

This contract includes furnishing the following five types of valves:

1. Twenty 36-inch-diameter filter backwash valves
2. Twenty 36-inch-diameter filter inlet valves
3. Twenty 30-inch-diameter filter outlet valves
4. Twenty 48-inch-diameter filter drain valves
5. Two 42-inch-diameter filter isolation valves

**Estimated Range of Cost: \$2,000,000 to \$3,000,000**

<b>Bidder and Location</b>	<b>Total <sup>1,2</sup></b>
L.A. Valves and Automation, Inc., Corona, CA <sup>3</sup>	\$ 1,749,677.67
<b>Val-Matic Valve &amp; Manufacturing, Elmhurst, IL</b>	<b>\$ 1,912,990.78</b>
DeZURIK, Sartell, MN	\$ 1,934,885.16
VAG-Armaturen GmbH, Germany	\$ 2,595,930.13
The Henry Pratt Co. LLC, Aurora, IL	\$ 2,711,376.98

<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> Nonresponsive bid

# Joseph Jensen Water Treatment Plant

