

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

July 11, 2006 Board Meeting

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7-7

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**Subject**

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Appropriate \$1.22 million and authorize three Diemer plant rehabilitation projects (Approp. 15436)

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**Description**

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The Robert B. Diemer Water Treatment 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 a treatment 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.

Three projects within the Diemer Rehabilitation Program have been identified to address issues related to aging infrastructure and equipment, personnel safety, operational efficiency, and protection of water quality. All three projects have been evaluated and recommended by Metropolitan's Capital Investment Plan Evaluation Team, and funds have been included in the fiscal year 2006/07 capital budget. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Maps.

**Hatch Covers Replacement – Final Design (\$129,000)**

The Diemer plant's filter outlet conduit and Finished Water Reservoir (FWR) inlet conduit feature surface-mounted, steel hatch covers for personnel and equipment access during maintenance work. These hatches were installed during the original plant construction in the 1960s. Fifteen steel hatch covers are severely corroded, resulting in misalignment and partial closure. Some of these hatches have rusted openings, resulting in a potential cross connection, and some of the concrete curbs supporting the hatches are spalled. Immediate replacement of the 15 hatches and repair of the concrete curbs are recommended to improve workplace safety and protect water quality.

Final design of these upgrades is recommended to be performed by Richard Brady & Associates (RBA), a Small Business Enterprise, under an existing professional services agreement. RBA was selected through a competitive process (Request for Qualifications No. 575) to perform this type of work and authority to enter into the agreement was approved by the Board in September 2003. No amendment to the RBA agreement is required for this work.

This action appropriates \$129,000 and authorizes final design of the Diemer Hatch Covers Replacement project. The cost of final design is approximately 10 percent of the estimated construction cost. Engineering Services' goal for design of projects with construction cost less than \$3 million is 9 to 15 percent.

**Lower Maintenance Road Rehabilitation – Final Design and Construction (\$573,000)**

The north side of the Diemer plant has two plant maintenance roads: (1) An east-west upper road adjacent to Basins Nos. 4 and 8 at the main plant level, and (2) An east-west lower road that parallels the upper road but is located approximately 150 feet downslope of the main plant level. The lower road provides access to slope instrumentation such as slope monitoring survey monuments, and serves as a secondary route between the main plant level and the plant's northwest hill. (See [Attachment 2](#).) The lower road was constructed during original plant construction in the 1960s. Most of the road is asphalt paved, except for the middle segment which is a graded dirt road. The western segment was repaved six years ago under the Basin No. 8 North Slope Remediation project and is still in good condition and suitable for light vehicular traffic. After 40 years in service, the middle

and eastern segments have deteriorated and eroded, making driving difficult and unsafe, especially during wet weather. Regrading and repaving the middle and eastern segments will improve safety.

With construction planned for various Diemer projects through 2010, the plant's upper maintenance road around the basins will be congested and occasionally blocked during construction activities. Plant staff will increasingly rely on the lower maintenance road for access between the main plant level and the northwest hill.

Rehabilitation work will include removal of existing asphalt pavement, regrading of road subgrade, addition of new drainage ditches and catch basins, and placement of new asphalt pavement for the road. Preliminary design has been completed for this project. Staff recommends proceeding with final design and construction at this time.

This action appropriates \$573,000 and authorizes final design and construction by Metropolitan forces. The cost of final design is approximately 16 percent of the estimated construction cost. Engineering Services' goal for design of projects with construction cost less than \$3 million is 9 to 15 percent.

### **East Basins Dewatering Line Valve Replacement – Procurement and Installation (\$518,000)**

The Diemer plant has eight flocculation and sedimentation basins. The east basins were placed into service in 1963, while the west basins were added in 1969. Mechanical equipment in the sedimentation portion of the basins collects settled solids and removes the settled material from the basins. Each 400-foot-long sedimentation area is divided into four equal cells, each approximately 100 feet long by 100 feet wide, and equipped with a circular clarifier (with bottom solids scraper and corner sweeps). Basins must be dewatered before major equipment maintenance or repair can occur.

To initiate dewatering of a sedimentation basin, four 8-inch-diameter plug valves located in the adjacent piping gallery are opened to allow basin water to be pumped into the flocculator inlet channel of another basin. The east basins' plug valves are mounted high in the piping gallery, requiring use of an extension rod for leverage and significant operator effort. In contrast, the west basins' plug valves are equipped with wheel-operated gearbox actuators for easy and safe opening. Over the years, the plug valves in the east basins have become severely corroded, and opening and closing them now requires strenuous effort.

Staff recommends replacing the sixteen 8-inch-diameter plug valves used to dewater the east basins. The new plug valves will be equipped with wheel-operated gearbox actuators to ensure operational reliability and improved safety.

This action appropriates \$518,000 and authorizes procurement and installation by Metropolitan forces for replacement of 16 plug valves in the east sedimentation basins.

See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Maps.

### ***Project Milestones***

December 2006 – Completion of Diemer lower maintenance road construction

December 2006 – Completion of final design of the Diemer access hatch covers

December 2008 – Completion of Diemer east basins dewatering line valve replacement

### **Policy**

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Metropolitan Water District Administrative Code Section 5108: Appropriations

## **California Environmental Quality Act (CEQA)**

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CEQA determinations for Options #1 and #2:

### **Hatch Covers Replacement – Final Design**

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 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).

### **Lower Maintenance Road Rehabilitation – Final Design and Construction**

The environmental effects from the design, construction, and operation of the Lower Maintenance Road Rehabilitation were evaluated in the Robert B. Diemer Filtration Plant Improvements Project Final Subsequent Environmental Impact Report (Final SEIR), which was certified by the Board on April 11, 2006. During that same meeting, the Board also approved the Findings of Fact (findings), the Mitigation Monitoring and Reporting Program (MMRP), the Statement of Overriding Considerations (SOC), and the proposed modifications to the originally approved Robert B. Diemer Filtration Plant Improvements Project. The current board actions would not result in any further changes to the original Improvements Project and its approved modifications. Hence, the previous environmental documentation taken by the Board in conjunction with the proposed actions fully complies with CEQA and the State CEQA Guidelines. Therefore, no further CEQA documentation is necessary for the Board to act on the proposed actions.

The CEQA determination is: Determine that the proposed actions have been previously addressed in the certified 2006 Final SEIR and in the related adopted documents (i.e., findings, SOC, and MMRP), and that no further environmental analysis or documentation is required.

### **East Basins Dewatering Line Valve Replacement – Procurement and Installation**

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 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).

The CEQA determination for Option #3:

None required

**Board Options**

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**Option #1**

Adopt the CEQA determinations and

- a. Appropriate \$1.22 million;
- b. Authorize final design of the Diemer Hatch Covers Replacement project;
- c. Authorize final design and construction of the Lower Maintenance Road Rehabilitation project; and
- d. Authorize procurement and installation of 16 plug valves for the east sedimentation basins.

**Fiscal Impact:** \$1.22 million of budgeted funds under Approp. 15436

**Business Analysis:** Refurbishing the lower maintenance road, replacing the hatch covers, and replacing the dewatering line valves are recommended to maintain reliable plant operation. This option will also eliminate a workplace hazard, improve personnel safety, and protect water quality from potential cross connections.

**Option #2**

Adopt the CEQA determinations and perform corrective work only after problems occur.

**Fiscal Impact:** None

**Business Analysis:** This option will result in reduced efficiency and reliability of operations at the plant, will lower protection of water quality, and will impact workplace safety.

**Option #3**

Defer the three projects described in this letter.

**Fiscal Impact:** Possible higher costs due to cost escalation.

**Business Analysis:** Defer final design and construction of lower maintenance road until 2010 when construction for various Diemer projects are completed. Between now and 2010, plant staff will have to share the plant's congested upper maintenance road during various contract activities. Deferring hatch cover replacement and dewatering line valve replacement will result in a reduction in plant reliability.

**Staff Recommendation**

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Option #1

  
 Roy L. Wolfe  
 Manager, Corporate Resources

6/19/2006  
 Date

  
 Jeffrey Kightlinger  
 General Manager

6/22/2006  
 Date

**Attachment 1 – Financial Statement**

**Attachment 2 – Location Maps**

BLA #4518

**Financial Statement for Diemer Water Treatment Plant Rehabilitation Program**

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A breakdown of Board Action No. 1 for Appropriation No. 15436 is as follows:

	<b>Board Action No. 1 (July 2006)</b>
Labor	
Studies and Investigations	\$ 59,000
Final Design	63,000
Owner Costs (Program management, bidding process, environmental monitoring)	132,000
Construction Inspection & Support	84,000
Metropolitan Force Construction	370,000
Materials and Supplies	122,000
Incidental Expenses	6,000
Professional/Technical Services	20,000
Richard Brady & Associates	46,000
Equipment Use	22,000
Contracts	149,000
Remaining Budget	147,000
<b>Total</b>	<b>\$ 1,220,000</b>

**Funding Request**

<b>Program Name:</b>	Diemer Water Treatment Plant Rehabilitation Program		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15436	<b>Board Action No.:</b>	1
<b>Requested Amount:</b>	\$ 1,220,000	<b>Capital Program No.:</b>	15436-I
<b>Total Appropriated Amount:</b>	\$ 1,220,000	<b>Capital Program Page No.:</b>	E-27
<b>Total Program Estimate:</b>	\$ 36,800,000	<b>Program Goal:</b>	I-Infrastructure Reliability



