

- **Board of Directors**  
***Engineering and Capital Programs Committee***

January 13, 2009 Board Meeting

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**7-2**

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**Subject**

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Appropriate \$190,000; and authorize preliminary design of the Weir Gate and Filter Valve Rehabilitation project at the Mills plant (Approp. 15452)

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**Description**

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This action authorizes preliminary design to rehabilitate the weir gates and filter valves at Modules Nos. 3 and 4 at the Henry J. Mills Water Treatment Plant. This project is categorized as an Infrastructure Rehabilitation project and is budgeted within Metropolitan's Capital Investment Plan (CIP). This project has been reviewed with Metropolitan's updated CIP prioritization criteria, and staff recommends moving forward at this time due to the critical nature of this project.

**Background**

The Mills plant was placed into service in 1978 with an initial capacity of 75 mgd. The plant was expanded twice and is currently rated to treat 160 mgd, which is the design capacity of the existing ozone contactors. The Mills plant exclusively treats water from the East Branch of the State Water Project. Several projects are underway that will upgrade the Mills plant to allow it to operate at its full rated capacity of 326 mgd. The subject project is recommended to proceed at this time to enhance plant reliability when operating at its current treatment capacity.

**Mills Weir Gate and Filter Valve Rehabilitation – Preliminary Design Phase (\$190,000)**

Mills Modules Nos. 3 and 4 have a total of eight filter afterbay weir gates that are used to maintain the water surface elevation in the filter outlet channel, which establishes the filter backwash rates. The modules also have 32 filter inlet valves that are used to control flow into individual filters during normal filtration. The weir gates and filter inlet valves were installed with the second plant expansion in 1996.

During a plant shutdown in 2006, Metropolitan staff inspected the operator shafts, shaft guides, and mounting brackets for several of the afterbay weir gates in Modules Nos. 3 and 4. These components showed signs of significant corrosion and pitting. In one case, the mounting bracket was bent and had partially detached from its support. Staff has determined that the corrosive environment between the water surface and the roof of the enclosed channel is due to mixing of chlorine vapor with moisture, which creates a corrosive environment. This acidic environment is localized near the weir gates that are adjacent to the chlorine injection point in the filter outlet channel.

During the shutdown, staff also inspected several filter inlet valve operator shafts and found that these items exhibited significant signs of corrosion and wear. Deterioration of the weir gates and filter valves could lead to unplanned outages in order to perform repairs. Plant capacity would be reduced as filters are removed from service to complete these repairs.

Staff recommends replacing the existing weir gate shafts and refurbishing other gate components that show significant signs of corrosion. In addition, the chlorine injection diffuser will be modified and moved away from the gates to reduce continuous exposure to the acidic environment. The filter inlet valve shaft couplings and several of the shaft guide bearings need to be refurbished to enhance plant reliability.

This action appropriates \$190,000 and authorizes preliminary design phase activities for the Mills Weir Gate and Filter Valve Rehabilitation project. These activities include engineering analyses, preparation of environmental

documentation, development of a construction cost estimate, and preparation of a preliminary design report. All preliminary design activities will be performed by Metropolitan staff.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in the fiscal year 2008/09 capital budget. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Maps.

This project is consistent with Metropolitan's goals for sustainability by enhancing the reliability of the Mills plant, in order to maintain reliable water deliveries in the future.

### ***Project Milestones***

August 2009 – Completion of preliminary design

## **Policy**

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Metropolitan Water District Administrative Code Section 5108: Appropriations

### **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 proposed action consists 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 action qualifies as a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under a Categorical Exemption (Class 6, Section 15306 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 \$190,000; and
- b. Authorize preliminary design to refurbish the weir gates and filter inlet valves at Mills Modules Nos. 3 and 4.

**Fiscal Impact:** \$190,000 in budgeted funds under Approp. 15452

**Business Analysis:** This option will enhance treatment reliability at the full Mills plant flow rate of 326 mgd.

### **Option #2**

Do not proceed with preliminary design to refurbish the weir gates and filter inlet valves at Mills Modules Nos. 3 and 4.

**Fiscal Impact:** None

**Business Analysis:** This option would forego an opportunity to refurbish the filter weir gates and inlet valves. More frequent inspections, maintenance, and repairs of this equipment will be required, and plant capacity will be reduced as filters are removed from service for repairs.

**Staff Recommendation**

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Option #1

  
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Roy L. Wolfe  
Manager, Corporate Resources

12/18/2008

Date

  
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Jeffrey Kightlinger  
General Manager

12/26/2008

Date

**Attachment 1 – Financial Statement**

**Attachment 2 – Location Maps**

BLA #6391

**Financial Statement for Mills Improvements Program – Phase II**

A breakdown of Board Action No. 2 for Appropriation No. 15452 is as follows:

	<b>Previous Total Appropriated Amount (Mar. 2008)</b>	<b>Current Board Action No. 2 (Jan. 2009)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies and Investigations	\$ 166,000	\$ 136,000	\$ 302,000
Final Design	-	-	-
Owner Costs (Program mgmt., envir. doc.)	97,000	39,000	136,000
Construction Inspection and Support	-	-	-
Metropolitan Force Construction	-	-	-
Materials and Supplies	-	-	-
Incidental Expenses	4,000	5,000	9,000
Professional/Technical Services	-	-	-
Equipment Use	-	-	-
Contracts	-	-	-
Remaining Budget	13,000	10,000	23,000
<b>Total</b>	<b>\$ 280,000</b>	<b>\$ 190,000</b>	<b>\$ 470,000</b>

**Funding Request**

<b>Program Name:</b>	Mills Improvements Program – Phase II		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15452	<b>Board Action No.:</b>	2
<b>Requested Amount:</b>	\$ 190,000	<b>Capital Program No.:</b>	15452-I
<b>Total Appropriated Amount:</b>	\$ 470,000	<b>Capital Program Page No.:</b>	E-45
<b>Total Program Estimate:</b>	\$ 14,100,000	<b>Program Goal:</b>	I- Infrastructure Upgrade





# Mills Water Treatment Plant

