



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

1/12/2010 Board Meeting

7-1

Subject

Appropriate \$1.55 million; and authorize Metropolitan force construction to rehabilitate the Mills Modules Nos. 3 and 4 weir gates and filter valves (Approp. 15452)

Description

This action authorizes Metropolitan force construction to rehabilitate weir gates and filter valves at Modules Nos. 3 and 4 at the Henry J. Mills Water Treatment Plant. This project will enhance plant reliability and will reduce the risk of unplanned outages as a result of a failure of the deteriorated weir gates and filter valves.

Timing and Urgency

Rehabilitation of the corroded weir gates and filter valves at Modules Nos. 3 and 4 is needed to control water flow at individual filters, which is essential for the water treatment process, and because continued deterioration could lead to unplanned outages and reduced plant capacity when filters are removed from service to make repairs. Staff recommends moving forward with construction at this time so that the Module No. 3 weir gates can be refurbished during the planned Mills plant shutdown in February 2010. The Module No. 4 weir gates will be refurbished in early 2011, while the filter valves will be refurbished when individual filters are removed from service.

This project has been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria. This project is categorized as an Infrastructure Refurbishment project and is budgeted within Metropolitan's CIP for fiscal year 2009/10.

Background

The Mills plant was placed into service in 1978 with an initial capacity of 75 million gallons per day (mgd), and has been expanded twice. Following the July 2009 completion of Ozone Contactors Nos. 3 and 4, the plant is rated to treat 220 mgd, which is the design capacity of existing Modules Nos. 3 and 4. 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's rated capacity to 326 mgd.

Mills Weir Gate and Filter Valve Rehabilitation – Procurement and Construction (\$1,550,000)

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 determined that the corrosive environment between the water surface and the roof of the enclosed channel was due to mixing of chlorine vapor with moisture, which creates a corrosive environment. This acidic environment was localized near the weir gates that are adjacent to the chlorine injection point in the filter outlet

channel. Recently, the chlorine diffuser was modified to minimize the release of chlorine vapor in the filter outlet channel, which has nearly eliminated the corrosive environment. During the same shutdown, staff also inspected several filter inlet valve operator shafts and found that these items exhibited significant signs of corrosion and wear.

In June 2009, Metropolitan's Board authorized final design of the Mills Weir Gate and Filter Valve Rehabilitation project. Final design has been completed and staff recommends moving forward to replace the existing weir gate shafts; refurbish other gate components that were damaged prior to the chlorine diffuser relocation; and refurbish the filter inlet valve shaft couplings and several of the shaft guide bearings to enhance plant reliability. The 32 filter inlet valves will be refurbished as the individual filters within Modules Nos. 3 and 4 are taken out of service. The Module No. 3 weir gates will be refurbished during the February 2010 plant shutdown, while the Module No. 4 weir gates will be refurbished in early 2011. Completing the rehabilitation using a contractor is not recommended because the plant has only two working modules, Modules Nos. 3 and 4, and flexibility is required to schedule the work while keeping the plant in continuous service. The start-stop nature of the work would create a strong potential for significant contract delays and change orders, and an increased vulnerability for unplanned shutdowns.

This action appropriates \$1.55 million and authorizes construction of the Mills Weir Gate and Filter Valve Rehabilitation project. All work is planned to be performed by Metropolitan staff. The appropriated funds include \$676,000 for Metropolitan force labor; \$550,000 for materials; \$50,000 for equipment use; \$61,000 for inspection and technical support during construction; \$54,000 for project management, hazardous material handling documentation, and as-built drawings; and \$159,000 for remaining budget.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in the fiscal year 2009/10 capital budget. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Map.

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 Milestone

April 2011 – Completion of construction of the Mills Weir Gate and Filter Valve Rehabilitation project

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action was previously determined to be categorically exempt under the provisions of CEQA and State CEQA Guidelines. The Board found this project to be exempt under Class 1, Section 15301 and Class 2, Section 15302 of the State CEQA Guidelines on June 9, 2009. A Notice of Exemption (NOE) was filed on the project at that time and the statute of limitations has ended. With the current board action, there are no substantial changes proposed to the project since the original NOE was filed. Hence, the previous environmental documentation in conjunction with the project fully complies with CEQA and the State CEQA Guidelines. Accordingly, no further CEQA documentation is necessary for the Board to act with regards to the proposed action.

The CEQA determination is: Determine that the proposed action has been previously addressed in the 2009 NOE (Class 1, Section 15301 and Class 2, Section 15302 of the State CEQA Guidelines) and that no further environmental analysis or documentation is required.

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Appropriate \$1.55 million; and
- b. Authorize Metropolitan force construction to refurbish the Mills Modules Nos. 3 and 4 weir gates and filter inlet valves.

Fiscal Impact: \$1.55 million in budgeted funds under Approp. 15452

Business Analysis: Rehabilitation of the weir gates and filter inlet valves will enhance treatment reliability.

Option #2

Do not proceed with construction for this project at this time.

Fiscal Impact: Unknown

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

Staff Recommendation

Option #1


 _____ 12/29/2009
 Roy L. Wolfe Date
 Manager, Corporate Resources


 _____ 12/29/2009
 Jeffrey Kightlinger Date
 General Manager

Attachment 1 – Financial Statement

Attachment 2 – Location Map

Reference Number CR12602589

Financial Statement for Mills Improvements Program – Phase II

A breakdown of Board Action No. 5 for the Mills Weir Gate and Filter Valve Rehabilitation project* is as follows:

	Previous Total Appropriated Amount (Aug. 2009)	Current Board Action No. 5 (Jan. 2010)	New Total Appropriated Amount
Labor			
Studies and Investigations	\$ 587,100	\$ -	\$ 587,100
Final Design	405,000 **	-	405,000
Owner Costs (Program mgmt., haz. material doc., as-built drwgs)	479,200	54,000	533,200
Construction Inspection and Support	-	61,000	61,000
Metropolitan Force Construction	-	676,000	676,000
Materials and Supplies	-	550,000	550,000
Incidental Expenses	44,700 **	-	44,700
Professional/Technical Services	-	-	-
Equipment Use	-	50,000	50,000
Contracts	-	-	-
Remaining Budget	114,000 **	159,000	273,000
Total	\$ 1,630,000	\$ 1,550,000	\$ 3,180,000

Funding Request

Program Name:	Mills Improvements Program – Phase II		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15452	Board Action No.:	5
Requested Amount:	\$ 1,550,000	Capital Program No.:	15452-I
Total Appropriated Amount:	\$ 3,180,000	Capital Program Page No.:	309
Total Program Estimate:	\$ 12,900,000	Program Goal:	I- Infrastructure Upgrade

* The total amount expended to date on the Mills Weir Gate and Filter Valve Rehabilitation project is approximately \$270,000.

** Includes a correction for previous Action No. 3 in June 2009, which was not included in the Aug. 2009 Financial Statement.

Henry J. Mills Water Treatment Plant

