

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

August 19, 2008 Board Meeting

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**7-4**

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**Subject**

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Appropriate \$1.12 million; and authorize two projects at the Chemical Unloading Facility (Approp. 15346)

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**Description**

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This action authorizes two projects at Metropolitan's Chemical Unloading Facility in Riverside County: (1) Preliminary design of a dechlorination system, and (2) Preliminary design of a chlorine containment facility. Both projects are categorized as Stewardship projects and are budgeted within Metropolitan's Capital Investment Plan (CIP).

**Background**

The Chemical Unloading Facility (CUF) was constructed in 1975 and is used to transfer liquid chlorine from vendor-supplied rail cars to Metropolitan-owned cargo trailers. These cargo trailers are then delivered by truck to several Metropolitan treatment plants for use in the disinfection process. In mid-2004, due to increased chlorine demands at the plants, and due to operational limitations at CUF, Metropolitan entered into a contract with a local vendor to supplement CUF's liquid chlorine transfer operations. Reliance on this vendor's ability to deliver chlorine increases the risk of interruption to Metropolitan treatment processes if the vendor's transfer operations are delayed or interrupted.

To increase chlorine transfer reliability and overall treatment plant reliability, two projects at CUF are recommended to proceed at this time. The first project will increase chlorine handling capacity by constructing a dechlorination facility to remove current operational limitations at CUF. The second project will construct a chlorine containment facility to meet current California Fire Code requirements, enhance safety, and provide additional security features to protect from an external threat. Both projects are consistent with recommendations made in Board Reports on Chlorine Supply and Chlorine Security, which were presented to the Board in June 2006 and June 2007.

**CUF Dechlorination System – Preliminary Design Phase (\$240,000)**

The transfer of chlorine from rail cars to cargo trailers is accomplished by raising the pressure in the rail car and lowering the pressure in the cargo trailer, which essentially pushes liquid chlorine from the rail car into the cargo trailer. To lower the pressure in the trailer, chlorine gas is withdrawn from the cargo trailer, mixed with water, and discharged into Colorado River Aqueduct (CRA) water that eventually reaches Lake Mathews.

Strict limits have been established for the maximum chlorine residual that may enter Lake Mathews in order to protect fish and wildlife. The chlorine residual depends on how much CRA water is available to dilute the chlorine solution injected at CUF. When the CRA flow is low, the dilution is insufficient to keep the chlorine concentration below the maximum limit, and consequently transfer operations must be curtailed.

To ensure that Metropolitan has the ability to transfer liquid chlorine from rail cars to cargo trailers without operational limitations associated with low CRA flows, staff recommends that a dechlorination system be constructed at CUF. The system will use hydrogen peroxide to neutralize the chlorine injected into the CRA so that the residual will stay within acceptable limits. The system will consist of hydrogen peroxide storage tanks, a containment area, chemical feed equipment, diffusers, and a chlorine residual analyzer. Hydrogen peroxide will be injected only when chlorine transfer operations occur, and when the Metropolitan-owned cargo trailers are emptied of chlorine gas at CUF for their annual maintenance.

This action appropriates \$240,000 and authorizes initial study and preliminary design phase activities for addition of a dechlorination system at CUF. These activities include engineering analyses and development of design criteria, preparation of the preliminary design report and environmental documentation, identification of required permits and third-party issues, and development of a construction cost estimate. Preliminary design is recommended to be performed by MWH Americas under an existing board-authorized agreement. MWH was selected through a competitive process via Request for Qualifications No. 719. For this agreement, Metropolitan has established a Small Business Enterprise participation level of 20 percent. No amendment to the existing MWH agreement is required for this work.

### **CUF Chlorine Containment Facility – Preliminary Design Phase (\$880,000)**

In April 1999, Metropolitan's Board initiated the multi-phased Chlorine Containment and Handling Facilities Program, which will upgrade chlorine systems at each of Metropolitan's five water treatment plants and at CUF. These projects add chlorine containment and neutralization capabilities to comply with current California Fire Code regulations, enhance safety, improve process reliability, and enhance security. Construction of the Diemer, Weymouth, and Skinner facilities has been completed, while construction of the Mills and Jensen facilities will be completed this year.

The planned CUF Chlorine Containment Facility will be similar to those at the five water treatment plants, except that the CUF system can be simplified since it will be used in batch mode rather than continuously. To meet current fire code requirements, a containment building will be constructed with a chlorine neutralization system. The new facility will enhance the level of safety, and will incorporate greater security measures.

This action appropriates \$880,000 and authorizes preliminary design phase activities for the addition of a chlorine containment facility at CUF. These activities include engineering analyses and development of design criteria, preparation of the preliminary design report and environmental documentation, identification of required permits and third-party issues, and development of a construction cost estimate. Preliminary design will be performed by Metropolitan staff.

### **Summary**

This action appropriates \$1.12 million and authorizes preliminary design of two projects at the Chemical Unloading Facility. Both projects have been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in the fiscal year 2008/09 capital budget. These projects are consistent with Metropolitan's goals for sustainability by enhancing the reliability of the existing treatment, conveyance and distribution system, in order to maintain reliable water deliveries in the future. See [Attachment 1](#) for the Financial Statement.

### ***Project Milestones***

March 2009 – Completion of preliminary design of the CUF Dechlorination System

July 2009 – Completion of preliminary design of the CUF Chlorine Containment Facility

### **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 Options #2 and #3:

None required

**Board Options**

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**Option #1**

Adopt the CEQA determination and

- a. Appropriate \$1.12 million in budgeted funds;
- b. Authorize preliminary design of the CUF Dechlorination System; and
- c. Authorize preliminary design of the CUF Chlorine Containment Facility.

**Fiscal Impact:** \$1.12 million of budgeted funds under Approp. 15346

**Business Analysis:** This option will allow Metropolitan to improve chlorine transfer operations at CUF, which will enhance water treatment reliability. The dechlorination system will allow transfer and cargo trailer maintenance operations to occur without dependence on CRA flow rates, and the Chlorine Containment Facility will meet current fire codes, enhance safety, improve process reliability, and enhance security.

**Option #2**

Adopt the CEQA determination and

- a. Appropriate \$240,000 in budgeted funds;
- b. Authorize preliminary design of the CUF Dechlorination System; and
- c. Do not proceed with preliminary design of the CUF Chlorine Containment Facility.

**Fiscal Impact:** \$240,000 of budgeted funds under Approp. 15346

**Business Analysis:** Under this option, addition of the dechlorination system will improve transfer operations and eliminate dependence on CRA flow rates. This option would forego an opportunity to enhance safety and security at CUF.

**Option #3**

Do not proceed with the two CUF projects.

**Fiscal Impact:** None

**Business Analysis:** By not proceeding with construction of the dechlorination system, transfer operations and cargo trailer maintenance at CUF will depend on CRA flow rates, which would limit operational flexibility, and continue reliance upon a vendor's ability to deliver chlorine, which may increase the risk of interruption of service. This option would also forego an opportunity to enhance safety and security at CUF.

**Staff Recommendation**

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Option #1

 _____ Roy L. Wolfe Manager, Corporate Resources	7/29/2008 Date
 _____ Jeffrey Kightlinger General Manager	8/4/2008 Date

**Attachment 1 – Financial Statement**

**Financial Statement for Chlorine Containment and Handling Facilities Program**

A breakdown of Board Action No. 16 for Appropriation No. 15346 is as follows:

	<b>Previous Total Appropriated Amount (Feb. 2008)</b>	<b>Current Board Action No. 16 (Aug. 2008)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies and Investigations	\$ 840,000	\$ 705,000	\$ 1,545,000
Design and Specifications	1,790,650	-	1,790,650
Owner Costs	3,158,400	171,000	3,329,400
Construction Inspection and Support	9,490,800	-	9,490,800
Metropolitan Force Construction	4,666,600	-	4,666,600
Materials and Supplies	3,245,129	-	3,245,129
Incidental Expenses	481,500	10,000	491,500
Professional/Technical Services	6,375,700	94,000	6,469,700
MWH Americas	-	140,000	140,000
Right of Way Fees	118,000	-	118,000
Land Cost	7,050,000	-	7,050,000
Equipment Use	470,500	-	470,500
Contracts	69,444,700	-	69,444,700
Remaining Budget	14,058,021	-	14,058,021
<b>Total</b>	<b>\$ 121,190,000</b>	<b>\$ 1,120,000</b>	<b>\$ 122,310,000</b>

**Funding Request**

<b>Program Name:</b>	Chlorine Containment and Handling Facilities Program		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15346	<b>Board Action No.:</b>	16
<b>Requested Amount:</b>	\$ 1,120,000	<b>Capital Program No.:</b>	15346-W
<b>Total Appropriated Amount:</b>	\$ 122,310,000	<b>Capital Program Page No.:</b>	E-11
<b>Total Program Estimate:</b>	\$ 162,935,300	<b>Program Goal:</b>	W-Water Quality