

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

January 11, 2005 Board Meeting

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**8-1**

**Subject**

Appropriate \$1.67 million; and authorize final design of the chlorine containment and handling facilities at the Mills Water Treatment Plant (Approp. 15346)

**Description**

In April 1999, Metropolitan's Board initiated the multi-phased Chlorine Containment and Handling Facilities (CCHF) Program, which will upgrade chlorine systems at each of Metropolitan's five treatment plants. Construction of the Diemer CCHF was completed in mid-2002, construction of the Weymouth CCHF will be completed in early 2005, and final designs are underway for the Skinner and Jensen CCHF projects. In April 2004, Metropolitan's Board authorized staff to perform preliminary design of the Mills CCHF project. Preliminary design of the Mills CCHF has now been completed.

Staff recommends that final design of the Mills CCHF proceed at this time to add chlorine containment and neutralization capabilities to comply with current Uniform Fire Code regulations and to meet the goals of Metropolitan's CCHF Program.

**Mills Chlorine Containment and Handling Facilities – Final Design**

This action authorizes final design of the Mills CCHF by a consultant, Lee & Ro, Inc. The Mills CCHF will consist of a new chlorine storage building which will house four chlorine truck trailers, a new evaporator room addition to the existing chlorine building, and a chlorine scrubbing system to neutralize an accidental release of chlorine in the storage buildings and/or expanded chlorine building. No additional treatment capacity is being added as part of this project.

In June 2003, Metropolitan's Board authorized an agreement with Lee & Ro, Inc. for engineering services in support of the CCHF Program. This action authorizes an increase of \$1.05 million to this agreement, for a new not-to-exceed total of \$3.825 million, to conduct final design of the Mills CCHF project. Lee & Ro, Inc. was selected through a competitive process (Request for Qualifications 578) to perform chlorine containment-related work. Staff's intent for the CCHF Program has been to use a single firm for design of multiple sites in order to maximize efficiency and promote standardization, as long as it remains in Metropolitan's interest. Amendment of the Lee & Ro, Inc. agreement is consistent with the agreement's scope of work and with the planned approach for project implementation.

This project has been evaluated and recommended by Metropolitan's Capital Investment Plan (CIP) Evaluation Team, and the funds have been included in the fiscal year 2004/05 capital budget. See [Attachment 1](#) for the detailed report, [Attachment 2](#) for the financial statement, and [Attachment 3](#) for a location map.

**Policy**

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Metropolitan Water District Administrative Code Section 5108: Capital Projects Appropriation  
Metropolitan Water District Administrative Code Section 8115(d): Professional and Technical Consultant

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

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CEQA determination for Staff Recommendation:

The proposed actions are categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The overall activities involve the funding, amending an agreement, designing, and carrying out minor alterations, reconstruction or replacement of existing public facilities along with the construction of minor appurtenant structures with negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed actions qualify under Class 1, Class 2, Class 3, and Class 11 Categorical Exemptions (Sections 15301, 15302, 15303, and 15311 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed actions qualify under four Categorical Exemptions (Class 1, Section 15301; Class 2, Section 15302; Class 3, Section 15303; and Class 11, Section 15311 of the State CEQA Guidelines).

### **Staff Recommendation**

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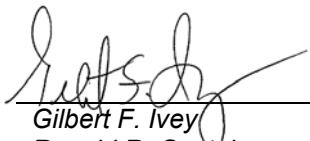
Adopt the CEQA determination and

- a. Appropriate \$1.67 million in budgeted funds;
- b. Authorize final design of the Mills CCHF project; and
- c. Authorize an increase of \$1.05 million to the agreement with Lee & Ro, Inc. for a new not-to-exceed total of \$3.825 million.

**Fiscal Impact:** \$1.67 million in budgeted capital funds under Approp. 15346

  
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Roy L. Wolfe  
Manager, Corporate Resources

12/20/2004  
Date

  
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for Gilbert F. Ivey  
Ronald R. Gastelum  
Chief Executive Officer

12/23/2004  
Date

**Attachment 1 – Detailed Report**

**Attachment 2 – Financial Statement**

**Attachment 3 – Location Map**

BLA #2930

## Detailed Report

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### *Purpose/Background*

Chlorine is a highly toxic and corrosive chemical that Metropolitan must use in large quantities as a disinfectant in the water treatment process. The use of chlorine will continue indefinitely at each of Metropolitan's treatment plants, even after ozone pre-disinfection is installed. This ongoing need is because chlorine, in the form of chloramines, is added to the finished water leaving the plant.

Liquid chlorine is shipped to Metropolitan's Jensen and Weymouth treatment plants in bulk 90-ton capacity railcars and to the Mills, Diemer, and Skinner plants in 17-ton capacity truck trailers. These railcars and truck trailers are used for on-site storage of the liquid chlorine until exhausted. Metropolitan has maintained an excellent safety record considering the enormous quantities used over the years and the potential consequences of an accidental release of chlorine gas. Because the potential consequences of an accident would be serious, Metropolitan continues to be proactive in upgrading its facilities and procedures. A thorough review has been conducted to determine current industry practices and regulations pertaining to the construction of chlorine-related facilities. In April 1999, Metropolitan's Board initiated the multi-phased Chlorine Containment and Handling Facilities (CCHF) Program, which will upgrade all of Metropolitan's treatment plants.

### *Multi-Phased Program*

The first project under the CCHF Program was at the Diemer plant. Construction of the Diemer chlorine facilities was completed in April 2002, and they have been in successful operation since that time. The second project was the Weymouth CCHF project, which is currently under construction and is scheduled to be complete by the first quarter of 2005. The Skinner and Jensen CCHF projects are currently under design and are scheduled to be completed by late-2006 and mid-2007, respectively. This action authorizes final design of the Mills CCHF, which is the final treatment plant facility.

### ***Mills Chlorine Containment and Handling Facilities – Final Design (\$1,670,000)***

The Mills plant's existing chlorine facility was constructed in 1993. The facility includes substantial safety features including continuous leak detection and provisions to remotely shut off the chlorine supply at the truck trailers in the event of a leak. However, to comply with current Uniform Fire Code regulations and meet Metropolitan's goals under the CCHF Program, the facility must be modified to include containment and neutralization capabilities.

In April 2004, Metropolitan's Board authorized preliminary design of the Mills CCHF. The design consultant, Lee & Ro, Inc., has completed the preliminary design.

The Mills CCHF project will include the following components: (1) construction of a new evaporator room adjacent to the existing chlorine process building, which houses the existing chlorinators and evaporators; (2) construction of a new chlorine storage building to house four 17-ton chlorine truck trailers; (3) installation of a chlorine scrubbing system to neutralize chlorine released within the storage building and/or process building (evaporator and chlorinator rooms) during a leak; and (4) provisions within the existing and new buildings to include a fail-safe backup disinfection system in the event that a significant chlorine release shuts down the primary chlorine feed system. No additional treatment capacity is being added as part of this project.

### *Consultant Agreement Amendment*

Request for Qualifications 578 to Provide Process and Plant Engineering Services was issued in December 2002. Metropolitan received 16 statements of qualifications (SOQs) to provide plant engineering services. Based on evaluation of the SOQs, staff recommended award of an agreement to Lee & Ro, Inc., an SBE firm, to perform chlorine containment-related work. The agreement was awarded to Lee & Ro, Inc. by Metropolitan's Board in June 2003.

Several consulting agreements have been awarded under RFQ 578 for multi-year support on capital programs. Staff's intent has been to utilize a single firm to design the CCFH projects at multiple sites in order to maximize efficiency and promote standardization, as long as it remains in Metropolitan's interest. Metropolitan retains the option of selecting additional firms for future work on the CCFH Program.

The CCHF projects at Metropolitan's five treatment plants are being completed in phases. Construction of the Diemer CCHF was completed in mid-2002, and the Weymouth CCHF will be completed in early-2005. Final design of the CCHF projects at the Skinner and Jensen plants is currently underway. At this time, staff recommends proceeding with final design of the CCHF project at the Mills plant.

This action authorizes an increase of \$1.05 million to the existing agreement with Lee & Ro, Inc. for a new not-to exceed total of \$3.825 million to perform final design of the Mills CCHF project.

For the Mills project, the final design cost as a percentage of the estimated total construction cost is approximately 11.3 percent. The Engineering Services goal for design of projects with construction costs greater than \$3 million is 9 to 12 percent.

#### ***Cost Estimate***

Attachment 2 shows the breakdown of the total estimated cost of \$1.67 million for final design of the Mills CCHF project. Lee & Ro, Inc. will prepare the final design documents. Metropolitan staff will perform project management, consult with the local fire department regarding Uniform Fire Code compliance, review consultant-prepared work, and prepare procurement documents. Additional assistance will be provided by a geotechnical consulting firm and by an environmental consulting firm, also under existing agreements.

#### ***Actions and Milestones***

October 2005 – Complete final design of Mills CCHF project

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

A breakdown of Board Action No. 8 for the Mills Chlorine Containment and Handling Facilities project and preparation of procurement documents for three chlorine truck trailers is as follows:

	<b>Previous Total Appropriated Amount <u>(July 2004)</u></b>	<b>Current Board Action No. 8 <u>(January 2005)</u></b>	<b>New Total Appropriated Amount</b>
Labor			
Studies and Investigations	\$ 582,000	\$ 0	\$ 582,000
Design and Specifications	1,811,650	0	1,811,650
Owner Costs (Program management, bidding process, permitting)	820,200	260,000	1,080,200
Construction Inspection and Support	2,808,800	0	2,808,800
Control System Integration	60,000	0	60,000
Metropolitan Force Installation and Construction	1,020,500	0	1,020,500
Materials and Supplies	1,053,000	75,000	1,128,000
Incidental Expenses	241,000	10,000	251,000
Professional/Technical Services	3,220,700		4,330,700
Lee & Ro, Inc.		1,050,000	
Geotechnical and Environmental Support		60,000	
Equipment Use	248,000	0	248,000
Contracts	15,818,000	0	15,818,000
Remaining Budget	3,801,150	215,000	4,016,150
<b>Total</b>	<b>\$31,485,000</b>	<b>\$1,670,000</b>	<b>\$33,155,000</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>	8
<b>Requested Amount:</b>	\$ 1,670,000	<b>Capital Program No.:</b>	15346-R
<b>Total Appropriated Amount:</b>	\$ 33,155,000	<b>Capital Program Page No.:</b>	E-15
<b>Total Program Estimate:</b>	\$ 57,450,000	<b>Program Goal:</b>	R – Regulatory

