

March 19, 1999

To: Board of Directors (Engineering and Operations Committee--Action)

From: General Manager _____

Submitted by: Gary M. Snyder _____
Chief Engineer

Subject: Appropriate \$6,100,000 and Delegate Authority to Award a Contract for Construction of Chlorine Containment and Handling Facilities at the Robert B. Diemer Filtration Plant

Reference: Appropriation No. 15346

RECOMMENDATIONS

To accomplish design and construction of chlorine containment and handling facilities at the Robert B. Diemer Filtration Plant (Diemer plant), it is recommended that the Board:

1. Appropriate \$6,100,000 to finance all associated costs;
2. Authorize the General Manager to have all work performed;
3. Delegate to the General Manager the authority to award a lump-sum construction contract, in form approved by the General Counsel and not to exceed \$3,350,000; and
4. Determine that the project qualifies for Categorical Exemption under the California Environmental Quality Act.

EXECUTIVE SUMMARY

Metropolitan uses large quantities of chlorine, a highly toxic and corrosive chemical, in the water treatment process. Although the likelihood of an accidental release of chlorine gas is extremely remote, the consequences of an accident could be serious. Thus, regulatory agencies are becoming more assertive in enforcing the requirements for containment and handling of released chlorine and other toxic substances. The Orange County Fire Authority (OCFA) is already enforcing the more stringent requirements of the Uniform Fire Code (Code), and issued Metropolitan a notification of noncompliance for the Diemer plant in August 1996. Adoption of the recommendations contained within this Board letter will provide the means for Metropolitan to achieve compliance with the Code at the Diemer plant by constructing new chlorine containment and handling facilities. The estimated cost of the described activities at the Diemer plant is \$6,100,000. Bringing all of Metropolitan's remaining liquid chlorine facilities into the same level of compliance as the Diemer plant through future Board actions is estimated to cost an

additional \$26,800,000. The total cost for all work is estimated to be \$32,900,000 and is described as Metropolitan's Chlorine Containment and Handling Facilities Program.

JUSTIFICATION

The proposed Chlorine Containment and Handling Facilities at the Diemer plant is the lowest cost project that will result in achieving compliance with current Code requirements and further enhance the level of safety for local communities, visitors and plant personnel.

ALTERNATIVE TO PROPOSED ACTION

No Viable Alternatives

There are no viable alternatives to completing the required improvements in order to achieve Code compliance. Should Metropolitan fail to make the required improvements, OCFA could conceivably seek to bring misdemeanor charges against Metropolitan for failing to comply with its notice of noncompliance. Alternatively, OCFA could issue a "cease and desist" order if they deemed continued operation of the existing Diemer chlorine facility to be a threat to public safety. Currently, OCFA has given no indication that such an action is being considered. Additionally, Metropolitan may expose itself to legal action from the development group which is currently building a master planned residential/golf community near the Diemer plant. OCFA has informed the developer that the occupancy permit for the development will be withheld until Metropolitan provides the required containment and handling facilities.

FUNDING REQUEST

Program Name: Chlorine Containment and Handling Facilities Program			
Source of Funds: 1997 Revenue Bond Construction Fund			
Appropriation No.: 15346		Board Action No.: 1	
		Budget: \$6,855,000*	
Requested Amount: \$ 6,100,000		Capital Program No.: 15239-A, 15310-R	
Total Appropriated Amount: \$ 6,100,000		Capital Program Page No.: E-25, E-84	
Total Program Estimate: \$32,900,000		Program Category: R-Regulatory (Non-Water Quality)	

* The Chlorine Containment and Handling Program is a new program which consolidates two existing programs at Diemer and Weymouth plants into a single program and also includes similar facilities at Jensen and Skinner plants and the conversion from liquid chlorine to sodium hypochlorite disinfection at the Mills plant.

ACTIONS AND MILESTONES

- ☐ May 1999 - Complete preliminary design for Diemer plant
- ☐ December 1999 - Complete final design for Diemer plant
- ☐ June 2001 - Complete construction for Diemer plant

CEQA COMPLIANCE / ENVIRONMENTAL DOCUMENTATION

The proposed project qualifies for a Categorical Exemption under the California Environmental Quality Act (CEQA) because it consists of: (a) the minor alteration of existing public facilities involving negligible use beyond that previously existing; (b) the replacement or reconstruction of existing facilities located on the same site and having substantially the same purpose; (c) the construction of limited number of new small facilities and; (d) construction of minor structures appurtenant to existing institutional facilities (State CEQA Guidelines, sections 15301, 15302, 15303, 15311).

DETAILED REPORT

Chlorine is a highly toxic and corrosive chemical which Metropolitan must use in large quantities as the primary disinfectant in the water treatment process. Liquid chlorine is shipped to Metropolitan's Jensen and Weymouth treatment plants and the Chemical Unloading Facility (CUF) in bulk 90-ton capacity rail cars. At the CUF, the liquid chlorine is transferred into 17-ton capacity truck trailers for delivery to Mills, Diemer and Skinner plants which do not have rail access. Metropolitan has maintained an excellent safety record considering the enormous quantities used over the years and the potential for an accidental release of chlorine gas. However, the potential consequences of an accident could be serious, which is why Metropolitan continues to be proactive in upgrading its facilities and procedures. The most recent upgrades include construction of a new chlorine process building which was completed in 1996 at the Diemer plant. Previously, the chlorine processing and handling equipment was contained within the Diemer plant's administration building which exposed employees to excessive risk.

In August 1996, the OCFA, a newly established local enforcement authority, conducted a routine inspection of the Diemer plant and observed the new chlorine building. Up to that point in time, Metropolitan's Code interpretations had been accepted by fire officials for all five treatment plants. Shortly after their inspection, OCFA issued a Fire and Life Safety Inspection Notice asserting that the new facility was not in compliance with their interpretation of the Code. In response to the notice, Metropolitan conducted a comprehensive study by a consultant to assess the facility design and equipment, and its installation for compliance with the Code and to recommend any required design changes. The final study resolved a number of compliance issues and provided recommendations to achieve compliance with the Code.

The Chlorine Containment and Handling Facilities Project at the Diemer plant consists of the following components: 1) chlorine storage and containment building for the 17-ton liquid chlorine truck trailers; 2) chlorine scrubbing systems to neutralize released chlorine in the containment structures or evaporator rooms; 3) other modifications to the existing chlorine process building to provide the safety and health improvements required by the Code; and finally 4) provisions for activation of a fail-safe backup disinfection system to ensure Metropolitan does

not violate provisions of the Surface Water Treatment Rule in the event of a significant chlorine release which will automatically shut down the primary chlorine feed system.

Because Metropolitan must comply with OCFA requirements at Diemer, it is prudent to anticipate an equivalent level of enforcement of the Code for the remaining treatment plants and to provide for a consistent level of safety at all Metropolitan facilities. Requests for funding and authority to complete work for these other sites will be requested after a substantial portion of the design for the Diemer project is underway. This will ensure that staff has an even better understanding of preferred facility configurations and equipment selections and their related costs.

The proposed program will involve the melding of two existing programs, identified in the Fiscal Year 1998/1999 Capital Program, into a single program. These existing programs are Program No. 15239-A, Diemer Filtration Plant Chlorination System Modifications, and Program No. 15310-R, Weymouth Filtration Plant - Relocate Chlorine Evaporators and Change Chlorinators to a Vacuum Feed. Subsequent to Board action on this program, the aforementioned two programs will be canceled.

The estimated cost for design and construction of the Chlorine Containment and Handling Facilities Program at the Diemer plant is \$6,100,000 including contingencies. Bringing all of Metropolitan's remaining liquid chlorine facilities into the same level of compliance as the Diemer plant is estimated to cost an additional \$26,800,000. The total cost for all work under this program is estimated to cost \$32,900,000. This Chlorine Containment and Handling Facilities Program was not listed in the Capital Program for Fiscal Year 1998/99; however, the two existing programs listed above had budgeted funds and expenditures. Funds from these two existing programs will be melded into the new program.

A breakdown of the costs for Board Action No. 1 is contained in the Financial Statement, Attachment A.

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Attachment 9-4A

Attachment 9-4A

FINANCIAL STATEMENT

A breakdown of the Board Action No. 1 for Appropriation No. 15346 to finance design for Chlorine Containment and Handling Facilities at the Diemer plant is as follows:

	BOARD ACTION NO. 1
Labor:	
Preliminary Studies	\$ 95,000
Final Design	380,000
Program Management	73,000
District Forces Construction	67,000
Construction Contract Admin. & Quality Control	495,000
Controls Systems	16,000
Water Quality/Env. Compliance	<u>14,000</u>
Total Labor	\$1,140,000
Materials and Supplies	\$ 54,000
Incidental Expenses	25,000
Professional/Technical Services	100,000
Equipment Use	50,000
Contracts	3,350,000
Contingencies	<u>752,000</u>
Subtotal Direct	\$ 5,471,000
Administrative Overhead	629,000
Total	<u>\$ 6,100,000</u>
Source of Funds: 1997 Revenue Bond Construction Fund	
Projected Expenditures of Funds:	
Through Fiscal Year 1997/98	\$ 140,000
Fiscal Year 1998/99	215,000
Fiscal Year 1999/00	2,515,000
Fiscal Year 2000/01	6,580,000
Fiscal Year 2001/02	11,225,000
Fiscal Year 2002/03	5,765,000
Fiscal Year 2003/04	1,060,000
Contingencies	5,400,000
Total	\$32,900,000
Capital Program for Fiscal Year 1998/99	
Total Budget	\$6,855,000
Program Estimate for FY 1998/99	\$ 496,000

Diemer Plant Chlorine Containment and Handling

Total Budget: \$6,100,000

