MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

10-1

PENDING

August 18, 1998

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

From: for General Manager

Submitted by: Gary M. Snyder
Chief Engineer

Subject: Appropriate $40,000,000 for Chlorine Containment and Neutralization at all Five Treatment Plants and the Chemical Unloading Facility, and Authority to Award Contracts and Enter into Agreements

Reference: Appropriation No. 15346

RECOMMENDATIONS

To construct chlorine containment and neutralization facilities at all five treatment plants and the Chemical Unloading Facility, it is recommended that the Board:

1. Appropriate $40,000,000 in out-of-budget funds to finance all estimated costs; and
2. Authorize the General Manager to have all work performed; and
3. Delegate to the General Manager authority to award contracts to the lowest responsible bidder, and enter into agreements.

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 low, the consequences of an accident can be potentially devastating. Thus, regulatory agencies are becoming more vigilant and aggressive in enforcing the requirements for containment and neutralization of released chlorine and other toxic substances. The Orange County Fire Authority (OCFA) has already issued a notification of noncompliance for the Diemer treatment plant. Completion of this program will enable Metropolitan to comply with the current fire code requirements and further improve the safety of Metropolitan chlorine facilities. In addition, the proposed project will provide an emergency backup system to liquid chlorination at each treatment plant to ensure uninterrupted disinfection during outages of the primary system. The total estimated cost of this program is $40,000,000.

JUSTIFICATION

Completion of the proposed program will result in achieving compliance with current fire code requirements, further enhance the level of safety for local communities, visitors and plant personnel, provide consistency in the level of safety features for all Metropolitan chlorine facilities, and provide an emergency backup disinfectant alternative to liquid chlorine.

ALTERNATIVE TO PROPOSED ACTION

Provide Chlorine Containment and Neutralization System for Diemer Plant Only

This alternative would bring the Diemer plant into compliance with the requirements of the OCFA which is currently the only fire authority that is requiring a system upgrade. However, other fire authorities are expected to require compliance in the near future, and many other agencies using chlorine have already complied. This alternative would also result in different safety standards at Metropolitan's treatment plants.

Do Not Provide Chlorine Containment and Neutralization Systems for any Metropolitan Facility

Metropolitan could continue operating its current chlorine facilities without implementing the program. However, regulatory agencies where Metropolitan facilities are located are expected to be considerably more aggressive in enforcing applicable code requirements in the future.

FUNDING REQUEST

Program Name:	All Treatment plants and CUF - Chorine Containment and Neutralization Program		
Source of Funds:	1997 Revenue Bond Construction Fund		
Appropriation No.: 15346	**Board Action No.:** 1	**FY 98/99 Budget:** N/A	
Requested Amount:	$40,000,000	**Capital Program No.:**	N/A
Total Appropriated Amount:	$40,000,000	**Capital Program Page No.:**	N/A
Total Program Estimate:	$40,000,000	**Program Category:**	R-Regulatory (Non-Water Quality)

ACTIONS AND MILESTONES

- ❒ Complete preliminary design by March 1999
- ❒ Complete final design by September 1999
- ❒ Complete equipment purchase by December 1999
- ❒ Completed Construction by July 2001

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 an 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, section 15301, 15302, 15303, 15311).

DETAILED REPORT

Chlorine is a highly toxic and corrosive chemical which Metropolitan must use in great quantities as the primary disinfectant in the water treatment process. Liquid chlorine is shipped to Metropolitan's Jensen treatment plant 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, which are then delivered to treatment plants that 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 is extremely low. However, the potential consequences of an accident can be devastating, which is why Metropolitan continues to be proactive in upgrading its facilities and procedures. The most recently completed upgrades include construction of a complete new chlorine process building at the Diemer plant which was completed in 1996.

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. OCFA issued a Fire and Life Safety Inspection Notice asserting that the new facility was not in compliance with their interpretation of the 1994 Uniform Fire Code (UFC). Metropolitan's UFC interpretations had previously been accepted by fire officials for all five treatment plants. In response to the notice, Metropolitan conducted a study by a consultant to assess the facility design, equipment, and installation for compliance with the UFC and to recommend any required design changes. The final study resolved a number of compliance issues, and provided recommendations to achieve compliance with current and anticipated regulatory requirements.

Because Metropolitan must comply with OCFA requirements at Diemer, it is prudent to anticipate a equivalent level of enforcement of the UFC for the remaining four plants and CUF and to provide a consistent level of safety at all Metropolitan facilities.

The proposed Chlorine Containment Program consists of the design and construction of a number of new facilities for each treatment plant. This will include providing: 1) temporary chlorine storage and handling facilities to ensure uninterrupted disinfection of treated water during construction of permanent facilities; 2) chlorine storage and containment buildings at all five treatment plants and the CUF to house truck trailers or rail cars on-site; 3) chlorine scrubbing systems to neutralize released chlorine in the containment structures; 4) new chlorine process equipment buildings at the Skinner and Weymouth treatment plants similar to those constructed at the other three treatment plants; 5) modifications to the existing chlorine process buildings at the Diemer, Mills, and Jensen treatment plants to provide safety and health

improvements required by current UFC rules; and 6) emergency disinfection backup systems for each treatment plant in the event of a significant chlorine release that will cause an automatic shutdown of the chlorine supply. The backup systems will ensure Metropolitan does not violate provisions of the Surface Water Treatment Rule.

It is hereby proposed to proceed with design, preparation of specifications, procurement of equipment, and award of contracts for construction of chlorine containment and neutralization systems at all five treatment plants and the CUF. The total estimated cost of this program is $40,000,000, including contingencies.

Portions of this program were previously budgeted and appropriated under separate capital programs, and included in the Capital Program Appendix for Fiscal Year 1998/99. Capital Program 15310-A, Weymouth Treatment Plant - Relocate Chlorine Evaporators and Change Chlorinators to a Vacuum Feed will be incorporated into this program and canceled. A portion of Capital Program 15239-A, Diemer Treatment Plant - Chlorinating System Modifications will be included in the new program and the total program estimate of Capital Program 15239-A will, be reduced accordingly.

A breakdown of all costs is contained in the Financial Statement, Attachment A.

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(Chorine Containment)
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Attachments

Attachment A

FINANCIAL STATEMENT

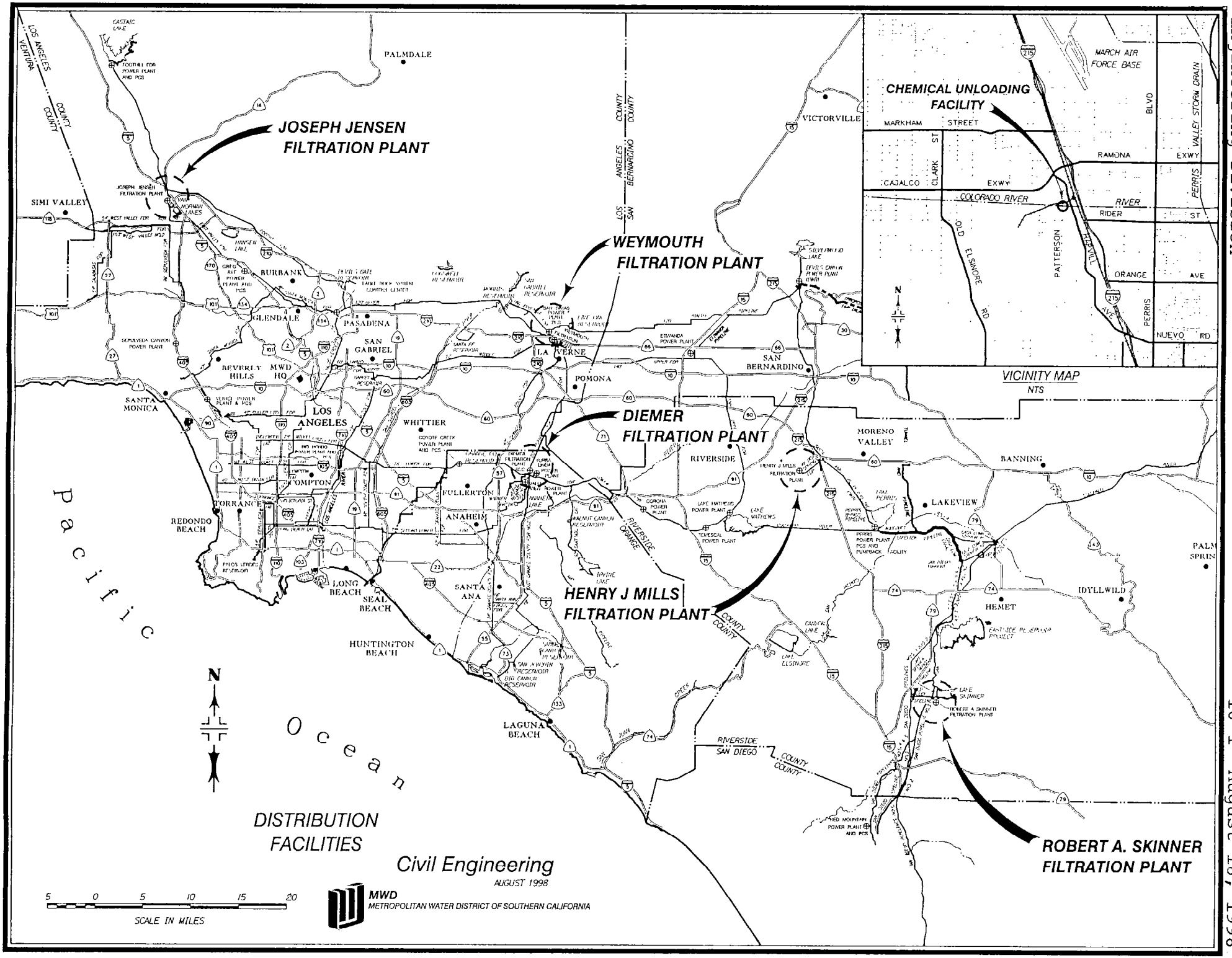
A breakdown of the Board Action No. 1 for Appropriation No. 15346 to finance the Chorine Containment and Neutralization Program is as follows:

	BOARD ACTION NO. 1
Labor:	
Engineering Division	
Program Management	$ 250,000
Engineering Design	2,600,000
Corrosion Engineering and Survey	250,000
Specifications/Estimating/ESD/RFP	230,000
Fabrication Inspection	500,000
Soils and Concrete	210,000
Engineering Construction Support	940,000
Contracts Administration	880,000
Field Inspection	2,500,000
Operations Division	
Controls Systems	60,000
District Forces Construction	100,000
Other Divisions	
Water Quality	30,000
Planning	20,000
Environment Compliance	50,000
Total Labor	$ 8,620,000
Material and Supplies	200,000
Incidental Expenses	100,000
Operating Equipment	100,000
Administrative Overhead	4,760,000
Professional/Technical Services	300,000
Contracts	20,500,000
Contingencies	5,420,000
Total	$40,00,000

Source of Funds: 1997 Revenue Bond Construction Fund

Projected Expenditures of Funds:

Through Fiscal Year 1998/99	$ 7,000,000
Fiscal Year 1999/00	12,000,000
Fiscal Year 2000/01	12,000,000
Fiscal Year 2001/02	3,580,000
Contingencies	5,420,000
Total	$40,000,000


JOSEPH JENSEN FILTRATION PLANT
WEYMOUTH FILTRATION PLANT
DIEMER FILTRATION PLANT
HENRY J MILLS FILTRATION PLANT
ROBERT A. SKINNER FILTRATION PLANT
CHEMICAL UNLOADING FACILITY
VICINITY MAP
NTS
DISTRIBUTION FACILITIES
Civil Engineering
AUGUST 1998
MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
SCALE IN MILES
5 0 5 10 15 20
Pacific Ocean
PALMDALE
VICTORVILLE
SIMI VALLEY
BURBANK
GLENDALE
PASADENA
SAN GABRIEL
LA VERNE
POMONA
SAN BERNARDINO
BEVERLY HILLS
SANTA MONICA
LOS ANGELES
WHITTIER
COMPTON
TORRANCE
REDONDO BEACH
LONG BEACH
SEAL BEACH
HUNTINGTON BEACH
FULLERTON
ANAHEIM
SANTA ANA
LAGUNA BEACH
RIVERSIDE
MORENO VALLEY
BANNING
LAKEVIEW
HEMET
IDYLLWILD
MARCH AIR FORCE BASE
MARKHAM STREET
RAMONA EXWY
CAJALCO
COLORADO RIVER
ORANGE AVE
PERRIS
NUEVO RD
LOS ANGELES VENTURA COUNTY
LOS ANGELES SAN BERNARDINO COUNTY
RIVERSIDE ORANGE COUNTY
RIVERSIDE SAN DIEGO COUNTY