

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

July 9, 2002 Board Meeting

8-1

Subject

Authorize \$800,000 in budgeted CIP funds for design, environmental determinations and installation of equipment for environmental control improvements in remote computer facilities (Approp. 15394)

Description

A comprehensive audit and subsequent risk exposure analysis identified the need to improve remote computer room environmental controls for critical Information Technology computer servers and telecommunications equipment. This program will reduce the risk of server and telecommunications outages due to interior room fire. The recommended program will install interior environmental monitoring, control and protection for 19 key remote computer server rooms and telecommunications sites. The improvements will include, as appropriate: fire, smoke, moisture and temperature detectors and alarms; gas-based fire suppression systems; and minimal room and heating, ventilating and air conditioning system modifications. Gas-based fire suppression system design, installation and commissioning will be performed by licensed fire protection contractors obtained through the competitive bidding process; staff will return to the board for award of contracts.

This program has been evaluated and recommended by the Capital Investment Plan (CIP) Evaluation Team and has been included in the fiscal year 2002/03 CIP budget.

See [Attachment 1](#) for the Detailed Report and [Attachment 2](#) for the Financial Statement.

Policy

Metropolitan Water District Administrative Code § 5108: Capital Project Appropriation
Metropolitan Water District Administrative Code § 8113: Construction Contract Award
Metropolitan Water District Administrative Code § 9100(b): Risk Management

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA. The overall project activities involve the funding, final design, and installation of equipment within existing public facilities along with the construction of minor appurtenant structures with no expansion of use and no possibility of significantly impacting the physical environment. As such, the proposed action qualifies under Class 1 and Class 3 Categorical Exemptions (Sections 15301 and 15303 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under two Categorical Exemptions (Class 1, Section 15301; and Class 3, Section 15303 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options/Fiscal Impacts

Option #1

Adopt the CEQA determination and

- a. Appropriate \$800,000 in budgeted CIP funds, and
- b. Authorize the Chief Executive Officer to have all work performed up to the award of competitively bid contracts.

Fiscal Impact: \$800,000 of budgeted CIP funds under new Appropriation No. 15394

Option #2

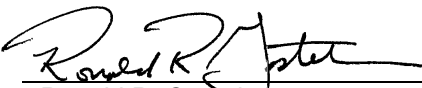
Do not perform all work as described. Increased risk of temporary loss of Supervisory Control and Data Acquisition (SCADA) system and business operations.

Fiscal Impact: \$0 for the current FY 2002/03 budget

Staff Recommendation

Option #1

	6/14/2002
_____ Roy L. Wolfe Manager, Corporate Resources	Date

	6/14/2002
_____ Ronald R. Gastelum Chief Executive Officer	Date

Attachment 1 – Detailed Report

Attachment 2 – Financial Statement

Detailed Report

Purpose/Background

Metropolitan has critical information technology (IT) computer servers, communications equipment, and microwave stations at various sites throughout its service area. The IT servers support Metropolitan's Supervisory Control and Data Acquisition (SCADA) system and business operations. The SCADA system is the primary means used by Water System Operations' plant and distribution operators to monitor and control Metropolitan's filtration plants and water delivery systems. The system allows users, with proper authorization, to monitor and control equipment from anywhere in the system within the SCADA network. It is currently used to monitor over 25,000 signals and control several thousand additional signals. It also allows operators in control rooms and in the field to monitor equipment, collect data, and send commands (such as: open a remote valve) to automated equipment. The IT business servers support functions such as email and computer network controls. The microwave stations enable use of digital microwave signals and radios to transmit SCADA and business information between remote sites. The networked land telephone system provides an additional communications linkage.

In June 2000, an audit of SCADA installations noted the absence of environmental controls such as fire suppression systems, smoke detectors, and related alarms in several critical SCADA computer server rooms. The auditor recommended considering the cost-benefit and feasibility of implementing environmental controls such as smoke detectors, moisture detectors, air conditioning failure or high-temperature sensors and alarms.

Due to the event on September 11, 2001, a comprehensive review of 15 key Metropolitan facilities was conducted to assess risk exposures. To reduce Metropolitan's exposure to those risks, recommendations included measures to address internal fires in rooms housing critical computer servers and telephone equipment and at remote facilities housing telecommunications equipment. Additional key sites to be surveyed were also identified.

In FY 2001/02, the key sites were surveyed to determine the requirements and to estimate the costs of feasible environmental control improvements at each site. The costs and potential impacts of outages due to lack of environmental controls were also estimated. The cost-benefit of improving environmental controls for each key site was then estimated. For example, the cost of lost data, work disruption, equipment replacement and recovery efforts due to a computer server room fire at a filtration plant was contrasted with the cost of adding fire, smoke, and moisture detection and alarms, and adding a fire suppression system to that computer room. Only the projects with site risk exposure that would be best minimized through improved environmental controls are proposed for implementation.

Project Description

The scope of this program includes installation of interior environmental monitoring, control and protection for 15 selected IT computer server rooms throughout our service area and at four remote telecommunications sites. At some sites, the computer servers will be relocated (e.g., to telephone equipment rooms) to minimize the overall risk exposure. The room improvements will include, as appropriate: fire, smoke, moisture and temperature detectors and alarms; gas-based fire suppression systems; and minimal room and heating, ventilating and air conditioning system modifications (to isolate each room and shut down the air handler before releasing the fire suppression agent when smoke is detected).

Project Actions and Milestones

- July 2002 – Initial Board authorization and funding for all design and construction
- April 2003 – Complete plans and specifications for improvements
- September 2003 – Award contracts for fire suppression system design, installation and commissioning
- March 2005 – Complete improvements at all sites

Cost Estimate

Attachment 2 shows the breakdown of the total estimated cost of \$800,000 for the activities leading up to award of contracts for the gas-based fire suppression systems. The recommended activities have been budgeted within the FY 2002/03 Capital Investment Plan (CIP). Consistent with Metropolitan's approach of managing projects in the most cost-effective manner and providing opportunities for staff, Metropolitan forces will perform those tasks that are critical to overall program success including project management, preliminary and most final design activities, computer server relocations, construction, and controls integration. Gas-based fire suppression system design, installation and commissioning will be performed by licensed fire protection contractors obtained through the competitive bidding process.

Financial Statement for Remote Computer Room Environmental Control Improvements Program

A breakdown of Board Action No.1 for Approp. No. 15394 to authorize funds for the Remote Computer Room Environmental Control Improvements Program is as follows:

	Board Action No. 1 (July 2002)
Labor	
Studies and Field Investigations	\$ 155,000
Design and Specifications	100,000
Owner Costs (Program Management, Environmental Docs., Computer Server Relocations, Bidding Process, Control System Integration)	105,000
Construction Management, Support and Inspection	0
Water System Operations (Metropolitan Force Installation and Construction)	150,000
Materials and Supplies	180,000
Incidental Expenses	50,000
Equipment Use	10,000
Contracts	0
Remaining Budget	50,000
Total	<u>\$ 800,000</u>

Funding Request

Program Name:	Remote Computer Room Environmental Control Improvements Program		
Source of Funds:	Construction Funds (possibly General Obligation, Revenue Bonds, Pay-As-You-Go Fund)		
Appropriation No.:	15394	Board Action No.:	1
Requested Amount:	\$ 800,000	Capital Program No.:	15394
Total Appropriated Amount:	\$ 800,000	Capital Program Page No.:	E-58
Total Program Estimate:	\$ 2,400,000	Program Goal:	Infrastructure Reliability