

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

July 11, 2000 Board Meeting

**8-1**

**Subject**

Appropriate \$572,900 to Finance Capital Projects Costing Less Than \$250,000 During Fiscal Year 2000/01

**Description**

The Capital Investment Plan budget for Fiscal Year 2000/01 included \$1,200,000 for completing capital projects costing less than \$250,000 that are identified during the fiscal year. Approval of this recommendation will appropriate \$572,900 from that amount and allow the General Manager to undertake all work for the design, purchase of equipment and construction for three small projects. See **Attachment 1** for descriptions of the projects and their estimated costs.

**Policy**

Metropolitan Water District Administrative Code, Section 5108: Appropriations.

**Board Options/Fiscal Impacts**

**Option #1**

Appropriate \$572,900 for three proposed small capital projects, costing less than \$250,000 each, for FY 2000/01, and determine that the projects qualify for a categorical exemption pursuant to California Environmental Quality Act.

**Fiscal Impact:** \$572,900 expenditure of budgeted funds.

**Option #2**

Approve each small capital project individually.

**Fiscal Impact:** An amount greater than \$572,900 would be spent due to increased administrative costs and schedule delays.

**Option #3**

Do not fund this program at this time; however, not performing the work this year may negatively impact operational performance, reliability and water quality.


**Fiscal Impact:** This option will defer costs.

**Staff Recommendation**

Option #1.

  
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Roy L. Wolfe  
Acting Manager, Corporate Resources

6/16/2000  
Date

  
\_\_\_\_\_  
Ronald K. Jester  
General Manager

6/27/2000  
Date

**Detailed Report**

The Board has annually approved a single appropriation to cover all costs for a group of small capital projects costing less than \$250,000. This allowed the General Manager to complete the projects without individual project approval of the Board, provided that the General Manager reported quarterly to the Engineering and Operations Committee on the status of each project.

This program is budgeted at \$1,200,000 for Fiscal Year 2000/01. However, the Capital Investment Plan (CIP) Evaluation Team recommended funding only those projects that: (a) had been proposed during the annual budgeting process, (b) had passed the evaluation and screening process, and (c) had been approved by the CIP Restructuring Subcommittee, for a total of \$572,900. It is therefore recommended that the Board approve \$572,900 to this appropriation.

The following describes the proposed minor capital projects for Board Action No. 1:

## **Allen McColloch Pipeline – Local Control Modifications**

**Project Cost \$241,500**

### **Project Description**

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The Allen McColloch Pipeline (AMP) local control modifications project includes design, procurement and installation of local area control systems for actuating and monitoring valves at 14 AMP flow control facilities.

### **Purpose/Justification**

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The AMP local control project will convert a labor-intensive manually operated pipeline valve-control system to a highly efficient control and status reporting system. This system is key to ensuring reliability and reducing costs associated with operating a complex water delivery system.

Completion of the project will:

- Eliminate labor-hours now required to disconnect remote control wires for manual local control.
- Improve valve status monitoring.
- Eliminate the need for specially trained personnel to manually operate valves.
- Provide timely and reliable local flow changes.
- Allow cost efficient operation and maintenance of valves.

### **Background**

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The current AMP control system has been modified to be a part of the Metropolitan SCADA system. It allows for SCADA monitoring and remote control at the Eagle Rock Operations Control Center and the Diemer filtration plant, but it does not allow for local on-site control. With the installation of new control systems, pipeline personnel can make flow changes in a highly reliable and cost-effective manner with minimal risk of making mistakes. This will bring the AMP control system to be consistent with the rest of Metropolitan's distribution system.

### **Alternatives Considered**

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One alternative is to defer the project and continue to operate the system in the same way. As a result, there will be a corresponding deferral of capital expenditures but continuation of excessive operating labor costs and the risk of improper valve actuation.

### **Milestones**

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- Design to commence September 2000
- Procurement of equipment to commence November 2000
- Construction scheduled to begin March 2001
- Project closeout scheduled to begin June 2001

## **Desert Pump Plants – Replace Auxiliary Transformers**

### **\$243,000**

#### **Project Description**

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Install ten new station service transformers replacing existing transformers and remove the defective voltage regulators at the five Colorado River Pumping Plants. The project involves procurement of new transformers, removal and salvage of existing transformers and regulators and installation of the new transformers.

#### **Purpose/Justification**

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The station service transformers are required to power critical subsystems associated with the main pumping units.

Benefits of replacing the existing transformers are:

- Improved system reliability. The existing transformers are over sixty years old and beginning to fail. The average life span for power transformers is 50 years.
- Improved system voltage stability by removing the non-functioning voltage regulators and installing new transformers with internal regulators.
- Elimination of the need for extensive maintenance repairs including oil desludging and reclamation and rewinding failed transformers.
- Reduced annual maintenance costs because the new transformers incorporate design features that have significantly reduced maintenance requirements.
- Reduced operating costs by using less power to excite transformer cores.

#### **Background**

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At each pumping plant, there is a bank of electrical transformers that provides power to auxiliary equipment critical to the operation of each plant and surrounding facilities. Recent testing, which occurs every five years, has indicated that these transformers have reached the end of their usable life and need replacement or refurbishment. A transformer at the Hinds Pump Plant has already been replaced and now there are no spare units in storage as backup for the existing transformer.

In addition, voltage regulators are used to automatically keep the electrical systems at each plant within required parameters. However, the automatic feature of the regulators no longer functions and the system voltages have to be maintained manually. An investigation of this deficiency indicates that all of the regulators installed in 1938 have lost their automatic function. Over the years, there have been many unsuccessful attempts to repair them and staff has had to rely on manual operations as a means of regulating voltages. System voltages at each plant will be stabilized with the installation of new transformers that include voltage regulators.

#### **Alternatives Considered**

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One alternative would be to defer replacement of the transformers. This alternative would result in the continued deterioration of system reliability and an accelerated increase in maintenance costs ultimately leading to complete transformer failures.

Another alternative is to remove the defective regulators and rewind the existing transformers. This alternative would provide acceptable performance. However, the cost to rewind one transformer is about the same as purchasing a new unit.

#### **Schedule**

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- Procure transformers scheduled for August 2000
- Install transformers at Iron scheduled for October 2000
- Install transformers at Hinds scheduled for November 2000

- Install transformers at Gene and Intake scheduled for January 2001
- Install transformers at Eagle Mountain scheduled for February 2001

## **Weymouth Filtration Plant – Chlorine Analyzer Replacement** **\$88,400**

### **Project Description**

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Replace the four online chlorine analyzers with new online chlorine analyzers at the Weymouth filtration plant.

### **Purpose/Justification**

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The plant online chlorine analyzers are unreliable, and require costly repairs. A high level of reliability is required because State and Federal regulations require continuous monitoring of chlorine residual levels. In addition, accurate chlorine residual data is required by the plant process control system to operate the automated chlorine feed.

### **Background**

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The plant online chlorine analyzers were initially installed in 1990 to provide automated, continuous control and reporting of residual chlorine amounts at various points in the treatment process. These meters measure and provide chlorine residual data to the plant control system which, in conjunction with operator oversight, are used to adjust the chlorine dosage into the treatment process. In addition, the data measured by these instruments is collected by the plant control system for trend analysis and to report compliance with water quality standards to reporting agencies.

These analyzers are 10 years old and they have reached the end of their useful service life. Today, they require excessive amounts of labor to keep them operable and have been outmoded by newer analyzer monitoring devices. By replacing the analyzers today, the savings in maintenance costs will pay for the cost of the new equipment in less than two years.

### **Alternatives Considered**

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Defer the chlorine analyzer replacement. However, excessive maintenance labor hours will be used to keep the instruments operable as long as parts are available. Should the units become unrepairable, labor intensive manual tests and manual record keeping must be performed every four hours in order to meet State and Federal regulations and to maintain the proper level of chlorine residuals in the plant effluent.

### **Schedule**

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- Prepare analyzer procurement documents November 2000
- Award procurement contract in December 2000
- Equipment installation completed by April 2001
- Close-out project scheduled in May 2001

**Summary of Estimated Project Cost**

Description	Amount
Allen McColloch Pipeline – Local Control Modifications	241,500
Desert Pump Plant – Replace Auxiliary Transformers	243,000
Weymouth Filtration Plant – Replace Chlorine Analyzer	88,400
<b>Total</b>	<b>\$572,900</b>

**Financial Statement**

Board Action No. 1 for Appropriation No. 15355 to finance design, purchase of equipment, and construction of capital projects costing less than \$250,000 during Fiscal Year 2000/01 is shown below:

	Board Action No. 1 (July 2000)
Engineering Design	\$ 48,900
District Forces Construction	231,700
Environmental Compliance	2,200
Material and Supplies	235,000
Incidental Expenses	23,900
Operating Equipment	31,200
<b>Total</b>	<b><u>\$ 572,900</u></b>

**FUNDING REQUEST**

<b>Program Name:</b> Capital Program for Capital Projects Costing Less than \$250,000 for Fiscal Year 2000/01			
<b>Source of Funds:</b> Pay-As-You-Go Fund			
<b>Appropriation No.:</b> 15355	<b>Board Action No.:</b> 1	<b>Budget:</b>	\$ 1,200,000
<b>Requested Amount:</b>	\$ 572,900	<b>Capital Program No.:</b>	00103-R
<b>Total Appropriated Amount:</b>	\$ 572,900	<b>Capital Program Page No.:</b>	E-7
<b>Total Program Estimate:</b>	\$ 1,200,000	<b>Program Goal:</b>	R-Reliability

**CEQA Compliance / Environmental Documentation**

Pursuant to the California Environmental Quality Act (CEQA) and *State CEQA Guidelines*, each project proposed under the Minor Capital Projects Program was reviewed and determined to qualify for a Categorical Exemption in accordance with the following classes of projects (15301 Existing facilities, 15302 Replacement or reconstruction, 15303 New Construction or conversion of Small Structures, 15304 Minor Alterations to Land, 15306 Information Collection).