

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

April 11, 2006 Board Meeting

7-2

Subject

Appropriate \$520,000; and authorize preliminary design of Phase II of the La Verne Shops Upgrade Program at the Weymouth plant (Approp. 15395)

Description

The F. E. Weymouth Water Treatment Plant was placed into service in 1941 with an initial capacity of 100 mgd. The Weymouth plant was expanded twice to its current capacity of 520 mgd. The plant delivers a blend of waters from the Colorado River and the State Water Project to Metropolitan's Central Pool portion of the distribution system.

Metropolitan has maintained a specialized machine shop since the late 1940s, located on the grounds of the Weymouth plant in La Verne. The machine shop was expanded in the 1960s when new, larger facilities were built, and was expanded again in the 1980s when a major rehabilitation of the Colorado River Aqueduct pumps commenced. Metropolitan also entered into an agreement with the California Department of Water Resources (DWR) in the 1980s to provide maintenance support for the pumping and generation plants along DWR's 444-mile-long California Aqueduct.

In July 2002, Metropolitan's Board appropriated \$3.5 million and authorized Phase I of the La Verne Shops Upgrade Program (formerly the Machine Shop Equipment Upgrade Program). The initial phase includes refurbishment and replacement of machine shop equipment, which is currently in progress. To date, staff has refurbished or replaced half of the 19 pieces of equipment identified under the Phase I work. In December 2005, staff initiated a study under Phase II of the program to evaluate buildings which house the machine, fabrication, and coating shop areas; to assess storage space requirements for shop materials; and to assess the timing for needed upgrades as well as coordination with other planned projects at the Weymouth plant.

At this time, four projects are recommended to commence preliminary design under Phase II of the La Verne Shops Upgrade Program. Due to planned construction activities for the Oxidation Retrofit Program (ORP), proceeding with the coating shop upgrades expeditiously will be important to maintain Metropolitan's coating capabilities without interruption. The three other projects are recommended to proceed to address health and safety issues, improve materials handling, and improve emergency preparedness.

La Verne Shops Upgrade Program, Phase II – Preliminary Design (\$520,000)

Machine Shop Upgrade Project

The Machine Shop performs specialized machining, fabrication, and repairs that support Metropolitan equipment and DWR facilities. The Machine Shop operates full-time throughout the year to provide specialized parts for scheduled repair and rehabilitation work, as well as for immediate response to emergencies with Metropolitan's member agencies and DWR's system. The existing Machine Shop roof has deteriorated beyond reasonable repair and requires replacement. In addition, the existing Machine Shop does not have adequate storage space for parts and equipment that are waiting for repair, or have already been repaired and are waiting to be coated. As a result, newly machined uncoated parts are typically stored outside.

The Machine Shop currently has no dedicated area for storing sensitive measurement instruments used for calibrating equipment. Pumps and motors repaired at the Machine Shop require precision measurements and tolerances. Most of the fabrication equipment is quite large and their component parts expand or contract very

slightly with changes in temperature. These changes affect the accuracy of the machined surfaces. A calibration room will provide space for precise measurements under controlled temperature conditions. Maintaining machined surfaces that are accurate and true is essential to fabricating parts of reliable quality and within the time requirements for scheduled work and emergency response.

This project will replace the existing Machine Shop roof, increase the building area by 4,000 square feet to store parts and equipment that are currently stored outside or temporarily placed between machines, and will add a 500-square foot calibration room to house equipment used to conduct high-tolerance measurements on machined components and materials.

Fabrication Shop Upgrade Project

The Fabrication Shop performs emergency and planned pipeline fabrication and repairs, specialized welding, sheet metal design and fabrication, and general maintenance support. Pipeline fabrication typically involves cutting and rolling heavy, bulky pieces of steel plate into cylindrical pipe sections. This requires the use of high capacity cranes to lift and move materials, equipment or components within the fabrication area.

This project will increase the area of the existing Fabrication Shop by 7,500 square feet to provide additional floor space for material handling, staging, and processing of large components that support pipeline fabrication. A new crane will be installed to handle plate and other fabricated components that move through the fabrication shop. In addition, the existing shop crane rails will be extended outside the building to load fabricated components onto trucks for transportation. Modification of the existing cranes and addition of a new crane will improve safety and permit more flexible movement of materials, equipment, and components throughout the Fabrication Shop floor space. Typically, Fabrication Shop projects require quick turn-around because critical infrastructure cannot be taken out of service for long periods of time. Increasing the Fabrication Shop area, installing an additional high capacity crane, and modifying the existing cranes will improve Metropolitan's emergency preparedness, while providing for more efficient workflow.

Coatings Shop Consolidation Project

The Coatings Shop applies corrosion-resistant coatings such as paint, epoxy, fiberglass, and mortar to pipe, valves, pump components, and other equipment for Metropolitan and DWR facilities. The existing Coatings Shop utilizes two separate buildings: the Sandblast Booth and the Coatings Application Shop. During construction of the ORP, the inlet conduit to the Weymouth plant will be relocated between these two buildings. The inlet conduit construction will take place over a 9- to 12-month period and will require excavation of a 30- to 40-foot-wide trench and installation of a large box conduit. This construction will impede access between the Coatings Applications Shop and the Sandblast Booth, Machine Shop, and Fabrication Shop. Consolidation of the Sandblast Booth and Coatings Application Shop into one building will allow continuous operation of the Coatings Shop during ORP inlet conduit construction, and will improve long-term workflow processes and productivity.

This project consists of constructing a consolidated Coatings Shop building that will consolidate operations currently performed in the two separate buildings, which will allow the coating work to continue during construction of the ORP.

Materials Storage Upgrade Project

The Materials Storage Area stores raw materials such as steel plates, large components such as valves and pumps, and temperature-sensitive coating materials such as paint and epoxy, all of which are used by Metropolitan's five treatment plants and facilities throughout the conveyance and distribution system. The roof and side panels of the existing covered storage building leak during rainstorms, and have reached the end of their useful life. Steel plates used to fabricate pipe sections are currently stored horizontally and stacked on top of each other. The heavy and bulky plates are picked up using a forklift, placed in a flatbed truck, and transported to the Fabrication Shop. A safer and more efficient way to handle the steel plates would be to store the plates vertically and lift them using an overhead crane. A canopy or enclosed structure with an overhead crane for storage of metal plates and coatings, identified as emergency stock, is recommended to improve Metropolitan's emergency preparedness.

This project involves replacing the existing roof and side paneling of the Materials Storage Area, constructing a new 6,600-square-foot structure with overhead crane for handling and storing emergency stock and equipment, and constructing a temperature-controlled storage building for storing temperature-sensitive coating products and chemicals.

The Coating and Fabrication Shops workflow processes and equipment will be evaluated during preliminary design. This evaluation will review current workflow processes for safety and efficiency, and where there may be deficiencies, new process workflow arrangements will be proposed. The evaluation will also identify any equipment deficiencies and will make recommendations for the refurbishment or replacement of existing Coating and Fabrication Shop equipment.

Architectural Services (No Action Required)

Staff recommends that HMC Architects, an architectural consulting firm, perform the preliminary design under an existing professional services agreement. HMC was selected through a competitive process (Request for Qualifications No. 565) to provide architectural services. Metropolitan's Board authorized an agreement with HMC Architects in January 2004, and no further authorization is required at this time. Metropolitan staff will perform project management and coordination with other Weymouth programs underway.

This action authorizes preliminary design of Phase II of the La Verne Shops Upgrade Program. The completion of preliminary design is scheduled for November 2006. Staff will then return to the Board with options to complete the upgrade of shops at the Weymouth plant.

These projects have been evaluated and recommended by Metropolitan's Capital Investment Plan Evaluation Team and funds have been included in the fiscal year 2005/06 capital budget. See [Attachment 1](#) for the financial statement and [Attachment 2](#) for the location map.

The total program estimate to complete Phases I and II of the La Verne Shops Upgrade Program is \$13.7 million.

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Section 8121: General Authority of the Chief Executive Officer to Enter Contracts

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed actions are categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed actions consist of funding, preliminary design, environmental preparation, and basic data collection and resource evaluation activities, which do not result in a serious or major disturbance to an environmental resource. This may be strictly for information gathering purposes, or as part of a study leading to an action that a public agency has not yet approved, adopted, or funded. Accordingly, the proposed actions qualify as a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed actions qualify under a Categorical Exemption (Class 6, Section 15306 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 \$520,000 in budgeted funds; and
- b. Authorize preliminary design of Phase II of the La Verne Shops Upgrade Program.

Fiscal Impact: \$520,000 of budgeted funds under Approp. 15395.

Option #2

Do not authorize the Phase II preliminary design activities.

Fiscal Impact: None. This option will forego an opportunity to improve Metropolitan’s operational flexibility and to minimize impacts to member agencies during scheduled or emergency shutdowns.

Staff Recommendation

Option #1


 _____ 3/24/2006
 Roy L. Wolfe Date
 Manager, Corporate Resources


 _____ 3/24/2006
 Jeffrey Kightlinger Date
 General Manager

Attachment 1 – Financial Statement

Attachment 2 – Location Map

BLA #4255