



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

7/9/2013 Board Meeting

7-3

Subject

Appropriate \$550,000; and authorize replacement of turbidimeters at the Robert A. Skinner Water Treatment Plant (Approp. 15485)

Executive Summary

This action authorizes procurement and installation by Metropolitan forces to replace 84 turbidimeters at the Robert A. Skinner Water Treatment Plant. Turbidimeters will be replaced at four treatment modules and the plant's finished water reservoir. After their removal and replacement, the existing units will be salvaged and used to supply spare parts for 56 existing turbidimeters which will remain in service at three treatment modules.

Timing and Urgency

Process control instruments, which include turbidimeters, are essential to provide continuous monitoring of a treatment plant's filters and finished water quality. After over 30 years of continuous service, many of the Skinner plant's older turbidimeters have begun to fail. As a result, a replacement program needs to commence in order to minimize the risk of noncompliance with water quality regulations. Staff recommends replacing 84 turbidimeters at this time.

This project has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria and is categorized as an Infrastructure Reliability project. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2013/14.

Details

Background

The Skinner plant commenced service in 1976 and has been expanded four times to its present treatment capacity of 630 million gallons per day (mgd). It consists of seven treatment modules that are operated as three distinct facilities (Plants Nos. 1, 2, and 3). The Skinner plant delivers a blend of waters from the Colorado River and State Water Project to Eastern Municipal Water District, Western Municipal Water District of Riverside County, and the San Diego County Water Authority. The plant is located north of Temecula in Riverside County.

Turbidimeter Replacement – Procurement and Installation (\$550,000)

The Skinner plant has a total of 124 filters which remove suspended and colloidal matter from the incoming water. In compliance with California's surface water filtration and disinfection regulations, each filter outlet is equipped with a turbidimeter, while additional units monitor the combined filtered water quality from each module. Turbidimeters provide early warning of filter turbidity breakthrough and are key instruments used to demonstrate compliance with water quality regulations. If a turbidimeter fails, staff must manually collect and analyze water samples every four hours. Water quality regulations require that the continuous on-line measurements resume within five days.

The 140 existing turbidimeters in Modules Nos. 1-7 and the finished water reservoir are commercially obsolete. The manufacturer is no longer in business, and spare parts are no longer available. In addition, many of the

Skinner plant's turbidimeters are aging and their performance is declining. As a result of the recent failure of two turbidimeters, the depletion of Metropolitan's spare parts inventory, and the unavailability of new replacement parts, staff recommends purchasing and installing new turbidimeters throughout the Skinner plant. This work will be completed in two stages. Under the initial stage, which is the subject of this action, 84 turbidimeters will be replaced at Plants Nos. 1 and 3 (Modules Nos. 1, 2, 3, and 7) and at the finished water reservoir. The existing turbidimeters will then be salvaged and used to supply spare parts for Plant No. 2 (Modules Nos. 4, 5, and 6). In the future, the remaining units at Plant No. 2 will be replaced after the spare parts supply has been depleted. Metropolitan staff will procure and install the turbidimeters during scheduled outages.

Since Module No. 7 is the newest treatment module at the Skinner plant, this facility is used preferentially to meet treated water demands. As a result, its turbidimeters are planned to be replaced at this time so that the Module No. 7 treatment process is served by the most up-to-date equipment and does not risk interruption due to a turbidimeter failure.

This action appropriates \$550,000 and authorizes construction to replace 84 turbidimeters at four treatment modules and at the finished water reservoir. Procurement of equipment and installation will be performed by Metropolitan staff. The requested funds include: \$226,000 for procurement of the turbidimeters; \$172,000 for installation by Metropolitan forces; \$43,000 for technical support from design staff during installation and testing; \$34,000 for bidding and project controls; and \$75,000 for remaining budget. The total cost of construction for this project is \$398,000.

The total estimated cost to complete Stage 1 of this project, including procurement, installation, and all supporting activities, is \$550,000.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds have been included in the fiscal year 2013/14 capital expenditure plan. The project is included within capital Appropriation No. 15485, the Skinner Improvements Program - FY 2012/13 Through FY 2017/18. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Map.

Project Milestone

September 2014 – Completion of installation of 84 turbidimeters

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

Metropolitan Water District Administrative Code Section 8121: General Authority of the General Manager to Enter Contracts

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The overall activities involve the funding, design, minor alterations, and replacement of existing public facilities with negligible or no expansion of use and no possibility of significantly impacting the physical environment. Accordingly, the proposed action qualifies under Class 1 and Class 2 Categorical Exemptions (Sections 15301 and 15302 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 2, Section 15302 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination that the proposed action is categorically exempt and

- a. Appropriate \$550,000; and
- b. Authorize procurement and installation of turbidimeters at the Skinner plant.

Fiscal Impact: \$550,000 in capital funds under Approp. 15485

Business Analysis: This option will enhance operational reliability of the Skinner plant.

Option #2

Do not proceed with the project at this time.

Fiscal Impact: None

Business Analysis: Under this option, staff would replace turbidimeters individually as they fail. This option would increase costs and the potential for noncompliance with water quality regulations.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer
Engineering Services

6/17/2013
Date



Jeffrey Nightlinger
General Manager

6/25/2013
Date

[Attachment 1 – Financial Statement](#)

[Attachment 2 – Location Map](#)

Financial Statement for Skinner Improvements Program - FY 2012/13 Through FY 2017/18

A breakdown of Board Action No. 1 for Appropriation No. 15485 for the Skinner Turbidimeter Replacement project¹ is as follows:

| | Current Board Action No. 1 (July 2013) |
|---|---|
| Labor | |
| Studies & Investigations | \$ - |
| Final Design | - |
| Owner Costs (Project controls, bidding) | 34,000 |
| Submittals Review & Record Drwgs. | - |
| Construction Inspection & Support | 43,000 |
| Metropolitan Force Construction | 167,000 |
| Materials & Supplies | 226,000 |
| Incidental Expenses | 5,000 |
| Professional/Technical Services | - |
| Equipment Use | - |
| Contracts | - |
| Remaining Budget | 75,000 |
| Total | \$ 550,000 |

Funding Request

| | | | |
|-----------------------------------|---|----------------------------------|---------------------------|
| Program Name: | Skinner Improvements Program - FY 2012/13 Through FY 2017/18 | | |
| Source of Funds: | Revenue Bonds, Replacement and Refurbishment or General Funds | | |
| Appropriation No.: | 15485 | Board Action No.: | 1 |
| Requested Amount: | \$ 550,000 | Capital Program No.: | 15485-I |
| Total Appropriated Amount: | \$ 550,000 | Capital Program Page No.: | 335 |
| Total Program Estimate: | \$ 41,950,000 | Program Goal: | I- Infrastructure Upgrade |

¹ This is the initial action for the Skinner Turbidimeter Replacement project. The total estimated cost to complete Stage 1 of this project is \$550,000.

Distribution System

