

- **Board of Directors**  
**Water Quality and Operations Committee**

June 10, 2008 Board Meeting

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7-4

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**Subject**

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Appropriate \$425,000; and authorize conceptual design of future treatment facilities at the Weymouth plant (Approp. 15369)

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**Description**

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This action authorizes conceptual design of future treatment facilities for the F. E. Weymouth Water Treatment Plant. Given the magnitude of rehabilitation needed at the nearly 70-year-old Weymouth plant, this effort will evaluate options for either replacing processes and equipment in-kind, upgrading to modern design criteria, or advancing to new technologies. The conceptual design will be conducted by Metropolitan staff with support from a specialized consultant, Malcolm Pirnie, Inc. This work is categorized as an Infrastructure Upgrade project within Metropolitan's Capital Investment Plan (CIP).

**Background**

The Weymouth plant was placed into service in 1941 with an initial capacity of 100 million gallons per day (mgd) and has been expanded twice to its current capacity of 520 mgd. It delivers a blend of waters from the Colorado River and State Water Project to Metropolitan's Central Pool portion of the distribution system.

Planned construction activities at Weymouth over the next ten years will be similar in magnitude to that occurring most recently at the Skinner and Diemer plants. This construction program includes new facilities, such as the Oxidation Retrofit Program (ORP), and a large number of rehabilitation and repair (R&R) projects. Although the plant performs reliably today, its systems exhibit the signs of normal wear and tear expected from nearly 70 years of operation. Some of the plant's facilities have reached the end of their life expectancy and have become less reliable in addition to no longer meeting seismic design standards. Finally, some plant processes, such as the filters, were not designed to meet today's stringent water quality standards and have difficulty performing at this heightened level, particularly during periods of high flow. As a result, compliance with future water quality regulations while managing changes caused by Delta delivery restrictions or quagga mussel mitigation may pose significant problems unless the plant processes are improved and upgraded.

**Weymouth Treatment Facilities Conceptual Design (\$425,000)**

Planned R&R projects focus on treatment processes such as the filters and the flocculation and sedimentation basins to ensure operational reliability and compliance with existing and future water quality standards. Three basic rehabilitation options are available for the Weymouth water treatment plant. First, the facilities could be repaired or replaced in-kind to their originally installed condition. Second, the facilities could be upgraded to modern process and structural criteria, which would extend their useful life and improve their seismic and process reliability. Third, a technology such as low-pressure membrane filters could be installed to "leapfrog" over conventional treatment technologies. An advanced technology would likely reduce the required process footprint, improve effluent water quality, and allow greater operational flexibility.

To optimize long-term capital investment, a treatment facilities conceptual design effort to study the rehabilitation options is recommended. This effort will consider the condition of the plant's aging facilities; effects of upstream quagga mussel mitigation; constructability, operability, and cost; site planning and space restrictions; and community stewardship. The conceptual design will include unit process review, the development of process schematics for future treatment processes; hydraulic analyses; evaluation of alternative treatment options; and development of conceptual site plans. Staff will return to the Board to discuss the findings of this evaluation and will recommend individual projects for inclusion in the CIP. The project's summary report will include:

- Process design criteria for each rehabilitation alternative;
- Expected water quality performance of each alternative;
- Conceptual site layouts;
- Plant hydraulic profiles; and
- Conceptual cost estimates for the rehabilitation options.

This action appropriates \$425,000 and authorizes conceptual design of future treatment facilities at the Weymouth plant. The work will be performed by Metropolitan staff, with specialized technical support from Malcolm Pirnie, Inc. The consultant will provide sizing and cost information for new technologies, convene a panel of water treatment process experts to perform an independent assessment of the rehabilitation options developed by Metropolitan staff, and prepare a summary report documenting the findings of this effort. Malcolm Pirnie has recent experience with membrane filters and other newer treatment technologies, and has available resources to support the project schedule. The recommended work will be performed by Malcolm Pirnie under a new professional services agreement. Malcolm Pirnie was selected through a competitive process in response to Request for Proposals No. 833, and the agreement will be executed under the General Manager's authority per Metropolitan's Administrative Code.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team. Although this project was not identified within the fiscal year 2007/08 CIP, the conceptual design of future Weymouth treatment facilities has become a critical part of the planned Weymouth Improvements Program. Adequate budget is available within the Weymouth Improvements Program for this effort. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for the Location Map.

This project is consistent with Metropolitan's goals for sustainability by enhancing the reliability of the existing treatment, conveyance and distribution system, in order to maintain reliable water deliveries in the future.

### ***Project Milestones***

December 2008 – Completion of conceptual design of future Weymouth treatment facilities

## **Policy**

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Metropolitan Water District Administrative Code Section 5108: Appropriations

### **California Environmental Quality Act (CEQA)**

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CEQA determination for Option #1:

#### **Weymouth Treatment Facilities Conceptual Design**

The proposed action to authorize conceptual design of the Weymouth treatment facilities is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action consists of 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 which a public agency has not yet approved, adopted, or funded. Accordingly, the proposed action qualifies as a Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

The proposed action to authorize funding is not defined as a project under CEQA because it involves continuing administrative activities (Section 15378(b)(2) of the State CEQA Guidelines). In addition, the proposed action is not subject to CEQA because it involves other government fiscal activities, which do not involve any commitment to any specific project which may result in a potentially significant physical impact on the environment (Section 15378(b)(4) of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under a Categorical Exemption (Class 6, Section 15306 of the State CEQA Guidelines); and that the proposed action is not subject to the provisions of CEQA pursuant to Sections 15378(b)(2) and 15378(b)(4) of the State CEQA Guidelines.

CEQA determination for Option #2:

None required

**Board Options**

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**Option #1**

Adopt the CEQA determination and

- a. Appropriate \$425,000; and
- b. Authorize conceptual design of future treatment facilities at the Weymouth plant.

**Fiscal Impact:** Adequate funds are available within the Weymouth Improvements Program (Approp. 15369) for this effort.

**Business Analysis:** Results of this effort will help guide Weymouth R&R projects and will aid in meeting Metropolitan’s water quality goals in an economically responsible way.

**Option #2**

Do not proceed with the treatment facilities conceptual design at this time.

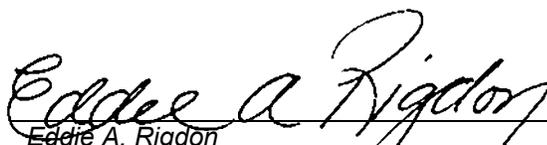
**Fiscal Impact:** None

**Business Analysis:** This option would forego an opportunity to identify cost-effective rehabilitation options for facilities nearing the end of their service life and may reduce future operational reliability. In addition, this option fails to adequately address treatment processes that would be required to comply with increasingly stringent water quality regulations and to manage source water quality changes on the State Water Project and Colorado River Aqueduct.

**Staff Recommendation**

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Option #1

  
 Eddie A. Rigdon  
 Manager, Water System Operations

5/27/2008  
 Date

  
 Jeffrey Kightlinger  
 General Manager

5/28/2008  
 Date

**Attachment 1 – Financial Statement**

**Attachment 2 – Location Maps**

## Financial Statement for Weymouth Improvements Program

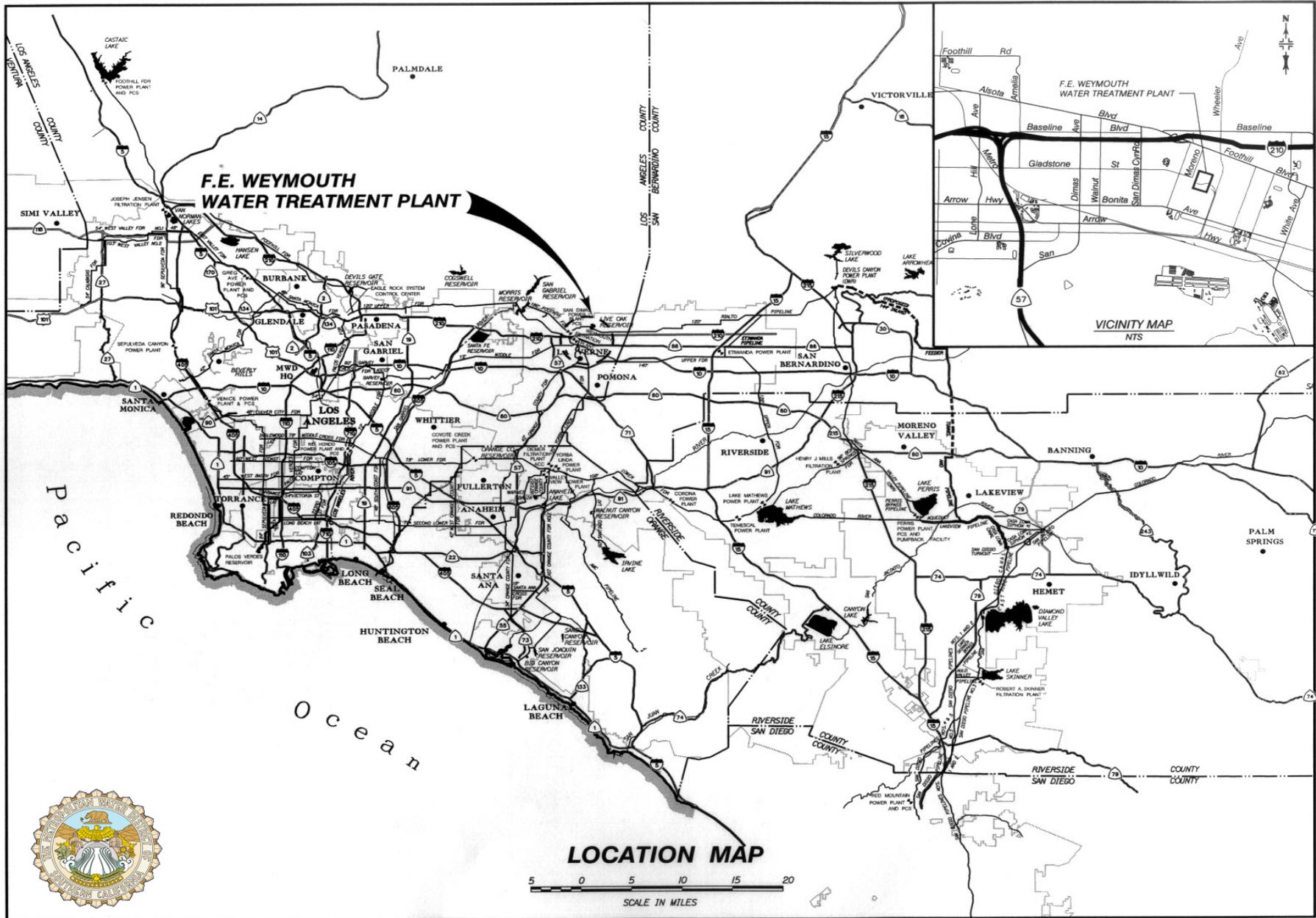
A breakdown of Board Action No. 26 for Appropriation No. 15369 is as follows:

	<b>Previous Total Appropriated Amount (Mar. 2008)</b>	<b>Current Board Action No. 26 (Jun. 2008)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ 1,745,477	\$ 151,000	\$ 1,896,477
Final Design	6,718,033 *	-	6,718,033
Owner Costs (Project mgmt.)	4,914,000	20,000	4,934,000
Construction Inspection & Support	3,673,000	-	3,673,000
Metropolitan Force Construction	1,760,880	-	1,760,880
Materials and Supplies	1,420,120	-	1,420,120
Incidental Expenses	152,000	2,000	154,000
Professional/Technical Services	9,756,037 *	-	9,756,037
Malcolm Pirnie, Inc.	-	198,000	198,000
Contracts	47,187,896	-	47,187,896
Remaining Budget	5,692,557 *	54,000	5,746,557
<b>Total</b>	<b>\$ 83,020,000</b>	<b>\$ 425,000</b>	<b>\$ 83,445,000</b>

\*Includes previous allocation of \$80,000 from Remaining Budget to Final Design and Professional/Technical Services for Weymouth Perimeter Improvements project.

### Funding Request

<b>Program Name:</b>	Weymouth Improvements Program		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15369	<b>Board Action No.:</b>	26
<b>Requested Amount:</b>	\$ 425,000	<b>Capital Program No.:</b>	15369-I
<b>Total Appropriated Amount:</b>	\$ 83,445,000	<b>Capital Program Page No.:</b>	E-64
<b>Total Program Estimate:</b>	\$ 125,100,000	<b>Program Goal:</b>	I-Infrastructure & Reliability



# F. E. Weymouth Water Treatment Plant

