



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

November 10, 2009 Board Meeting

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7-1

**Subject**

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Appropriate \$260,000; and authorize preliminary design for rehabilitation of three service connections on the Upper Feeder (Approp. 15441)

**Description**

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This action authorizes preliminary design for rehabilitation of three member agency service connections on the Upper Feeder. This project will repair corrosion damage to piping and equipment in order to maintain reliable water deliveries.

**Timing and Urgency**

Three member agency service connections on the Upper Feeder have deteriorated gradually over time, and are in need of rehabilitation. Failure of components within a service connection could lead to an outage and possible damage to aboveground surroundings. Given the Upper Feeder's importance in delivering treated water from the Weymouth plant to the San Gabriel Valley, staff recommends moving forward with rehabilitation of the service connections at this time.

This project has been reviewed with Metropolitan's updated Capital Investment Plan (CIP) prioritization criteria, and is categorized as an Infrastructure Upgrade project. This project is budgeted within Metropolitan's CIP for fiscal year 2009/10.

**Background**

The Upper Feeder was constructed in 1936 as part of Metropolitan's original distribution system. The feeder is approximately 60 miles long with a diameter ranging from 84 to 144 inches. The Upper Feeder delivers untreated water from Lake Mathews to the Weymouth plant, after which it conveys treated water to the Eagle Rock Control Facility in the city of Los Angeles. The Upper Feeder's treated water section is comprised of a series of deep tunnels through the San Gabriel Mountains that have few isolation points due to the depth of the pipeline. The San Gabriel Tower, which is located near Morris Dam, is the westernmost isolation point for the treated water section. A pipeline failure along the western portion of the feeder would require that flows be shut off for an 18-mile section. Such an outage would affect eight active service connections downstream of the San Gabriel Tower, serving the Three Valleys Municipal Water District, Foothill Municipal Water District, and the cities of Pasadena and San Marino.

**Upper Feeder Service Connection Upgrades – Preliminary Design Phase (\$260,000)**

In April 2009, a comprehensive field inspection identified three Upper Feeder service connections that require rehabilitation. These three connections deliver treated water to the Foothill Municipal Water District (FM-01), the city of Pasadena (P-01), and the city of San Marino (SMR-01). Gradual corrosion over the course of 55+ years of operation has led to deterioration of service connection equipment such as the valves that isolate flows from the Upper Feeder. Advanced stages of corrosion have limited the operating range or rendered the isolation valves inoperable, have reduced the wall thickness of appurtenant piping, and have damaged protective coatings. Leakage of a service connection isolation valve would require shutdown of an 18-mile section of the

Upper Feeder in order to perform repairs. In addition, the three service connections are located in congested urban areas of the cities of Pasadena and San Marino.

Staff recommends proceeding with preliminary design for the rehabilitation of Upper Feeder service connections FM-01, PM-1 and SM-1. Rehabilitation work will include replacement of gate valves with Metropolitan-standard butterfly valves, replacement of severely corroded piping, and recoating of all exposed cast iron piping. Metropolitan staff will coordinate shutdown of the connections with affected member agencies.

This action appropriates \$260,000 and authorizes preliminary design phase activities for rehabilitation of the three service connections. Planned activities include engineering analyses, field measurements, preparation of a preliminary design report and environmental documentation, permitting, and development of a construction cost estimate. All preliminary design activities will be performed by Metropolitan staff.

Staff will return to the Board for authorization of final design upon completion of preliminary design. 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 reliability of the existing conveyance and distribution system in order to maintain reliable water deliveries in the future.

### ***Project Milestone***

February 2010 – Completion of preliminary design

### **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:

The proposed action 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 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).

CEQA determination for Option #2:

None required

### **Board Options**

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#### **Option #1**

Adopt the CEQA determination and

- a. Appropriate \$260,000; and
- b. Authorize preliminary design to rehabilitate three service connections on the Upper Feeder.

**Fiscal Impact:** \$260,000 in budgeted funds under Approp. 15441

**Business Analysis:** This project will protect Metropolitan's assets, increase service reliability to member agencies, and reduce the risk of costly emergency repairs.

#### **Option #2**

Do not authorize preliminary design to rehabilitate three service connections on the Upper Feeder at this time.

**Fiscal Impact:** None

**Business Analysis:** This option would forego an opportunity to enhance reliability of the service connections, and could lead to higher costs, more extensive repairs, and additional planned system shutdowns.

**Staff Recommendation**

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Option #1

  
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Roy L. Wolfe  
Manager, Corporate Resources

10/20/2009  
Date

  
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Jeffrey Nightlinger  
General Manager

10/27/2009  
Date

**Attachment 1 – Financial Statement**

**Attachment 2 – Location Map**

BLA #6732

### **Financial Statement for Conveyance and Distribution System Rehabilitation Program – Phase II**

A breakdown of Board Action No. 16 for Appropriation No. 15441 for the Upper Feeder Service Connections Rehabilitation Project\* is as follows:

	<b>Previous Total Appropriated Amount (Oct. 2009)</b>	<b>Current Board Action No. 16 (Nov. 2009)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ 1,156,800	\$ -	\$ 1,156,800
Preliminary Design	-	141,600	141,600
Final Design	1,353,050	-	1,353,050
Owner Costs (Program mgmt, permitting, envir. doc.)	1,886,850	84,000	1,970,850
Construction Inspection & Support	328,500	-	328,500
Metropolitan Force Construction	3,792,000	-	3,792,000
Materials and Supplies	637,100	-	637,100
Incidental Expenses	497,500	5,000	502,500
Professional/Technical Services	750,500	-	750,500
Equipment Use	148,000	-	148,000
Contracts	2,286,000	-	2,286,000
Remaining Budget	1,365,700	29,400	1,395,100
<b>Total</b>	<b>\$ 14,202,000</b>	<b>\$ 260,000</b>	<b>\$ 14,462,000</b>

### **Funding Request**

<b>Program Name:</b>	Conveyance and Distribution System Rehabilitation Program - Phase II		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15441	<b>Board Action No.:</b>	16
<b>Requested Amount:</b>	\$ 260,000	<b>Capital Program No.:</b>	15441
<b>Total Appropriated Amount:</b>	\$ 14,462,000	<b>Capital Program Page No.:</b>	277
<b>Total Program Estimate:</b>	\$ 53,850,000	<b>Program Goal:</b>	Infrastructure Reliability

\* This action is the initial appropriation for the Upper Feeder Service Connections Rehabilitation project.

# Upper Feeder Service Connections

