



- Board of Directors  
*Engineering and Operations Committee*

10/9/2012 Board Meeting

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**7-4**

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## **Subject**

Appropriate \$1.35 million; and authorize final design and construction to replace the Bixby Valve on the Second Lower Feeder (Approp. 15441)

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## **Executive Summary**

This action authorizes final design and construction to replace a 42-inch sectionalizing valve, known as the Bixby Valve, on the Second Lower Feeder in the city of Long Beach. This valve isolates the central portion of the Second Lower Feeder, while maintaining deliveries to other reaches of that feeder.

### **Timing and Urgency**

The Bixby Valve is 44 years old and has reached the end of its service life. This 42-inch sectionalizing valve is used to isolate a portion of the Second Lower Feeder between Long Beach Boulevard and South Alameda Street while keeping the remainder of the feeder and service connections in operation. Timely replacement of this valve is important because isolation of the Second Lower Feeder will be required to perform needed prestressed concrete cylinder pipe (PCCP) repairs, conduct electromagnetic testing, and install PCCP monitoring equipment. Replacement of the Bixby Valve is planned to take place during a shutdown of the Second Lower Feeder scheduled for March 2013.

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 2012/13.

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## **Details**

### **Background**

The Second Lower Feeder delivers treated water from the Robert B. Diemer Water Treatment Plant in Yorba Linda to Palos Verdes Reservoir in Rolling Hills Estates. The feeder is 39 miles long and was installed in the early 1970s. Approximately 30 miles of the Second Lower Feeder are constructed of PCCP with a diameter ranging from 78 inches to 84 inches, while the other 9 miles are constructed of 84-inch-diameter welded steel pipe.

The Bixby Valve is located within the PCCP portion of the Second Lower Feeder, west of Long Beach Boulevard within the city of Long Beach. This 42-inch sectionalizing valve is used to isolate reaches of the Second Lower Feeder for repair and maintenance, while maintaining water deliveries from the Diemer plant or the Palos Verdes Reservoir to other reaches of the feeder. Staff has determined that the valve has deteriorated and cannot be repaired in place. Replacement of this isolation valve is needed in order to proceed with planned repairs on the Second Lower Feeder.

In April 2012, Metropolitan's Board authorized preliminary design to replace the Bixby Valve. Preliminary design has now been completed and the needed work to refurbish the valve has been identified. Final design and refurbishment of the valve are recommended to move forward at this time.

**Bixby Valve Replacement – Final Design, Valve Refurbishment and Construction (\$1,350,000)**

The planned work includes final design of piping and vault modifications to accommodate the refurbished valve, construction by Metropolitan forces, and refurbishment of a salvaged 42-inch conical plug valve, which is currently disassembled at Metropolitan's La Verne shops. The replacement will be performed around-the-clock within public streets. Metropolitan force activities will include procurement of materials, fabrication of reducer piping and fittings, valve refurbishment, removal of the existing non-operational valve, installation of the refurbished valve and new fittings, shutdown coordination and traffic control, dewatering of the pipeline, and return of the pipeline to service. Replacement will take place during a planned March 2013 shutdown of the Second Lower Feeder.

This action appropriates \$1.35 million and authorizes final design and construction to replace the Bixby Valve on the Second Lower Feeder. The requested funds include: \$1,168,000 for construction by Metropolitan forces; \$75,000 for design and preparation of installation drawings; \$76,000 for local agency permitting, environmental monitoring, preparation of record drawings, and project management; and \$31,000 for remaining budget.

Metropolitan staff will perform all final design and construction activities. The anticipated cost of final design is approximately 6.4 percent of the total construction cost. Engineering Services' goal for design of projects with construction cost less than \$3 million is 9 to 15 percent. The total estimated cost of construction for this project is \$1,228,000.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2012/13 capital expenditure plan. See [Attachment 1](#) for the Financial Statement, and [Attachment 2](#) for the Location Map.

This project is included within capital Appropriation No. 15441, the Conveyance and Distribution System Rehabilitation Program – FY 2006/07 Through FY 2011/12. Other projects authorized under Appropriation No. 15441 include the Santa Ana Bridge Seismic Upgrades, Upper Feeder Service Connection Rehabilitation, and the Lake Skinner Outlet Conduit Repair. With the present action, the total funding for Appropriation No. 15441 will increase from \$39,289,000 to \$40,639,000.

***Project Milestone***

March 2013 – Completion of construction

**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 statutorily exempt under the provisions of CEQA and the State CEQA Guidelines (Section 15282(k)). The proposed project involves the maintenance or repair of an existing pipeline as set forth in Section 21080.21 of the Public Resources Code, as long as the project does not exceed one mile in length. Accordingly, the proposed action qualifies for a statutory exemption under Section 21080.21 of the Public Resources Code.

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies for a statutory exemption under Section 21080.21 of the Public Resources Code.

CEQA determination for Option #2:

None required

**Board Options**

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**Option #1**

Adopt the CEQA determination and

- a. Appropriate \$1.35 million; and
- b. Authorize final design and construction to replace the Bixby Valve on the Second Lower Feeder.

**Fiscal Impact:** \$1.35 million in capital 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 replacement of the Bixby Valve at this time.


**Fiscal Impact:** None

**Business Analysis:** This option would forego an opportunity to enhance delivery reliability to Metropolitan’s member agencies, and could lead to higher repair costs and unplanned shutdowns.

**Staff Recommendation**

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Option #1

  
 \_\_\_\_\_ 9/17/2012  
 Gordon Johnson Date  
 Manager/Chief Engineer  
 Engineering Services

  
 \_\_\_\_\_ 9/25/2012  
 Jeffrey Nightlinger Date  
 General Manager

**Attachment 1 – Financial Statement**

**Attachment 2 – Location Map**

**Financial Statement for Conveyance and Distribution System Rehabilitation Program –  
FY 2006/07 Through FY 2011/12**

A breakdown of Board Action No. 45 for Appropriation No. 15441 for the Bixby Valve Replacement<sup>1</sup> project is as follows:

	<b>Previous Total Appropriated Amount (Aug. 2012)</b>	<b>Current Board Action No. 45 (Oct. 2012)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ 2,616,000	\$ -	\$ 2,616,000
Final Design	3,023,293	75,000	3,098,293
Owner Costs (Program mgmt., permitting)	4,676,400	70,000	4,746,400
Submittals Review & Record Drwgs	227,250	6,000	233,250
Construction Inspection & Support	1,929,550	-	1,929,550
Metropolitan Force Construction	8,275,710	508,000	8,783,710
Materials & Supplies	1,746,400	550,000	2,296,400
Incidental Expenses	850,900	22,000	872,900
Professional/Technical Services	2,002,000	-	2,002,000
Equipment Use	237,200	88,000	325,200
Contracts	11,657,944	-	11,657,944
Remaining Budget	2,046,353	31,000	2,077,353
<b>Total</b>	<b>\$ 39,289,000</b>	<b>\$ 1,350,000</b>	<b>\$ 40,639,000</b>

**Funding Request**

<b>Program Name:</b>	Conveyance and Distribution System Rehabilitation Program – FY 2006/07 Through FY 2011/12		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15441	<b>Board Action No.:</b>	45
<b>Requested Amount:</b>	\$ 1,350,000	<b>Capital Program No.:</b>	15441-I
<b>Total Appropriated Amount:</b>	\$ 40,639,000	<b>Capital Program Page No.:</b>	284
<b>Total Program Estimate:</b>	\$ 106,335,000	<b>Program Goal:</b>	I-Infrastructure Reliability

<sup>1</sup> The total amount expended to date on the Bixby Valve Replacement project is approximately \$95,000.

