



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

10/10/2017 Board Meeting

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**7-3**

**Subject**

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Adopt CEQA determination and appropriate \$1.12 million; and authorize: (1) design and procurement to replace valves on the West Orange County Feeder; and (2) preliminary design to rehabilitate Service Connection OC-09 (Appropriation No. 15480)

**Executive Summary**

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This action authorizes design to replace deteriorated valves and piping within 13 structures on the West Orange County Feeder, and procurement of new valves. The existing valves have deteriorated over 60 years of service and need to be replaced. This action also authorizes preliminary design to replace the valves, piping, and meter at Service Connection OC-09 on the West Orange County Feeder.

**Timing and Urgency**

Recent inspections of the West Orange County Feeder have identified significant deterioration of several air release/vacuum valve assemblies and the shutoff valves that provide isolation for inspection and maintenance of those assemblies. While operation of the feeder is not currently impacted, failure of a valve could lead to an unplanned shutdown and delivery interruptions to member agencies. This project will replace 13 deteriorated isolation valves and six air release/vacuum valve assemblies.

The piping and equipment within Service Connection OC-09 on the West Orange County Feeder have also deteriorated from continuous use and need to be replaced or refurbished. Metropolitan owns and maintains the service connection and is therefore responsible for needed repairs pursuant to Metropolitan's Administrative Code Section 4700(b). This project will rehabilitate the service connection.

These projects have been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria and are included in the Distribution System Reliability Program. Funds for this action are available within Metropolitan's capital expenditure plan for fiscal year 2017/18.

**Details**

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**Background**

The West Orange County Feeder was constructed in 1956 as a component of the Lower Feeder system. It delivers treated water from the Robert B. Diemer Water Treatment Plant in Yorba Linda to the northwestern portion of Orange County. The feeder is 12.9 miles in length and has a diameter ranging from 42 inches to 54 inches.

Two rehabilitation projects are recommended to move forward in order to maintain reliable deliveries through the feeder. The two projects will be coordinated and the work staged to minimize shutdowns of the line.

**Project No. 1 - West Orange County Feeder Valve Replacement – Design Phase and Procurement (\$690,000)**

The West Orange County Feeder includes more than 20 structures that contain air release/vacuum valve assemblies. These valves are installed at high points in the line to exhaust or admit air during pipeline filling or dewatering operations. The air release/vacuum valve assemblies are isolated from the pipeline by plug valves.

Closing the plug valves allows inspection, maintenance, or replacement of the assemblies to occur without requiring a shutdown of the feeder.

A recent condition assessment identified that 13 structures require rehabilitation, including the replacement of air release/vacuum valve assemblies and adjacent plug valves in six structures, and the replacement of plug valves in seven other structures. These valves were installed during the original construction of the feeder, and have been in service for over 60 years. Despite receiving regular maintenance, the valves have gradually deteriorated from continuous use. Each of the six air release/vacuum valves will be relocated from a manhole to an above-ground cabinet within the street-side parkway zone. At these six locations, treated water in the distribution system could potentially become exposed to contaminants under certain operating conditions. Relocation is needed to comply with California Department of Public Health requirements. At the remaining seven locations, the air release/vacuum valves were previously relocated above-ground and are in good condition.

Planned design phase activities include: (1) procurement of 13 plug valves up to 8 inches in diameter, and six air release/vacuum valve assemblies; (2) preparation of drawings and specifications for the construction contract; (3) receipt of bids; (4) local agency permitting; (5) shutdown planning with member agencies; and (6) development of a construction cost estimate. Extensive coordination and permitting will be performed with local agencies due to the locations of the manholes within public streets.

This action appropriates \$690,000 and authorizes design and procurement to replace 13 shutoff valves and six air release/vacuum valves on the West Orange County Feeder. Requested funds include \$90,000 for field surveys and potholing of utilities; \$85,000 for verification of record drawings and development of layouts of new piping and cabinets; \$200,000 for procurement of the valves; \$182,000 for preparation of drawings and specifications for the installation contract; \$67,000 for permitting, bidding, preparation of environmental documentation, and project management; and \$66,000 for remaining budget. The procurement contracts for the new valves are planned to be awarded under the General Manager's Administrative Code authority to award contracts of \$250,000 or less.

Final design and procurement will be performed by Metropolitan staff. The anticipated cost of final design is approximately 14.7 percent of the estimated construction cost. Engineering Services' goal for design of projects with construction costs less than \$3 million is 9 to 15 percent. The total estimated cost of construction for this project is anticipated to range from \$1.2 million to \$1.4 million. Staff will return to the Board for award of the construction contract.

The total estimated cost to replace the valves on the West Orange County Feeder, including the current funds requested and future cost of construction, is anticipated to range from \$1.9 million to \$2.1 million.

#### **Project No. 2 – Service Connection OC-09 Rehabilitation – Preliminary Design Phase (\$430,000)**

Service Connection OC-09 on the West Orange County Feeder consists of a turnout tee, a venturi meter, and a shutoff valve. The turnout tee is encased in concrete and is located beneath the traffic lanes of Katella Avenue in the city of Garden Grove, adjacent to the boundary line with the city of Stanton. The meter vault is located below Dale Street. This structure contains a 14-inch conical plug valve, a venturi meter, and associated piping and electrical systems.

Gradual corrosion from over 60 years of operation in a damp underground environment has led to deterioration of the equipment within the vault. This equipment needs to be replaced to maintain reliable deliveries from the service connection.

Planned preliminary design phase activities include: (1) assessing options to replace the venturi meter; (2) local agency permitting and traffic control planning; (3) hazardous material testing; (4) utility investigations and potholing; (5) preparation of environmental documentation; and (6) development of a construction cost estimate. All activities will be performed by Metropolitan staff.

This action appropriates \$430,000 and authorizes preliminary design to rehabilitate Service Connection OC-09 on the West Orange County Feeder. The requested funds include: \$50,000 for field investigations including survey and potholing; \$282,000 for preliminary design; \$60,000 for permitting, preparation of environmental documentation, and project management; and \$38,000 for remaining budget. Staff will return to the Board for authorization to commence final design and to procure the valve and meter.

### **Summary**

This action appropriates \$1.12 million, authorizes design and procurement to replace valves on the West Orange County Feeder, and authorizes preliminary design to rehabilitate Service Connection OC-09.

These projects are included within Appropriation No. 15480, the Conveyance and Distribution System Rehabilitation Appropriation – FY 2012/2013 through FY 2017/18, which was initiated in fiscal year 2012/13. With this action, the total funding for Appropriation No. 15480 will increase from \$48.21 million to \$49.33 million.

These projects have been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2017/18 capital expenditure plan. See **Attachment 1** for the Financial Statement and **Attachment 2** for the Location Map.

### ***Project Milestones***

May 2018 – Completion of preliminary design to rehabilitate Service Connection OC-09

August 2018 – Completion of design and valve procurement for the West Orange County Feeder

### **Policy**

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Metropolitan Water District Administrative Code Section 4700(b): General Authorization

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)**

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#### **CEQA determination for Option #1:**

#### **Project No. 1 – West Orange County Feeder Valve Replacement – Design Phase and Procurement**

The proposed action involves funding, equipment procurement, and minor alterations, reconstruction or 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 the proposed action is exempt from CEQA pursuant to Sections 15301 and 15302 of the State CEQA Guidelines.

#### **Project No. 2 – Service Connection OC-09 Rehabilitation – Preliminary Design Phase**

The proposed action involves data collection, study, design, research, and resource evaluation activities which would not result in a disturbance to an environmental resource. Accordingly, the proposed action qualifies under the Class 6 Categorical Exemption (Section 15306 of the State CEQA Guidelines).

The CEQA determination is: Determine that the proposed action is exempt from CEQA pursuant to 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 that the proposed actions are exempt, and

- a. Appropriate \$1.12 million;
- b. Authorize design and procurement to replace valves on the West Orange County Feeder; and
- c. Authorize preliminary design to rehabilitate Service Connection OC-09.

**Fiscal Impact:** \$1.12 million of capital funds under Appropriation No. 15480

**Business Analysis:** These projects will enhance delivery reliability to member agencies in the Orange County operating region.

**Option #2**

Do not proceed with the two rehabilitation projects at this time.

**Fiscal Impact:** None

**Business Analysis:** This option would forego an opportunity to enhance delivery reliability and reduce the risk of costly urgent repairs.

**Staff Recommendation**

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Option #1



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9/21/2017  
Date

Gordon Johnson  
Manager/Chief Engineer  
Engineering Services



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9/25/2017  
Date

Jeffrey Knightlinger  
General Manager

**Attachment 1 – Financial Statement**

**Attachment 2 – Location Map**

Ref# es12657803

**Financial Statement for Conveyance and Distribution System Rehabilitation Appropriation – FY 2012/13 Through 2017/18**

A breakdown of Board Action No. 32 for Appropriation No. 15480<sup>1</sup> is as follows:

	<b>Previous Total Appropriated Amount (Sep. 2017)</b>	<b>Current Board Action No. 32 (Oct. 2017)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ 2,840,000	\$ 507,504	\$ 3,347,504
Final Design	8,012,000	180,915	8,192,915
Owner Costs (Permitting & program mgmt.)	4,344,779	127,000	4,471,779
Submittals Review & Record Drwgs	914,000	-	914,000
Construction Inspection & Support	2,759,000	-	2,759,000
Metropolitan Force Construction	4,354,000	-	4,354,000
Materials & Supplies	1,836,000	-	1,836,000
Valves	354,000	200,000	554,000
Incidental Expenses	162,000	-	162,000
Professional/Technical Services	2,620,000	-	2,620,000
Right-of-Way	330,000	-	330,000
Equipment Use	5,000	-	5,000
Contracts	16,564,705	-	16,564,705
Remaining Budget	3,114,516	104,581	3,219,097
<b>Total</b>	<b>\$ 48,210,000</b>	<b>\$ 1,120,000</b>	<b>\$ 49,330,000</b>

**Funding Request**

<b>Appropriation Name:</b>	Conveyance and Distribution System Rehabilitation – FY 2012/13 Through FY 2017/18		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15480	<b>Board Action No.:</b>	32
<b>Requested Amount:</b>	\$ 1,120,000	<b>Budget Page No.:</b>	214
<b>Total Appropriated Amount:</b>	\$ 49,330,000	<b>Total Appropriation Estimate:</b>	\$ 332,500,000

<sup>1</sup> This is the initial action to replace deteriorated valves on the West Orange County Feeder and to rehabilitate Service Connection OC-09.

# Distribution System

