



- Board of Directors  
*Engineering and Operations Committee*

6/10/2014 Board Meeting

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**8-5**

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## **Subject**

Appropriate \$30.1 million; and award \$20,365,430 contract to J. F. Shea Construction, Inc. to construct the Lakeview Pipeline/Inland Feeder Intertie (Approps. 15480 and 15488)

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## **Executive Summary**

This action awards a contract for construction of an intertie from the Inland Feeder to the Lakeview Pipeline so that water stored in Diamond Valley Lake (DVL) may serve as a backup supply for the Henry J. Mills Water Treatment Plant. In addition to the construction activities, the scope of the contract includes fabrication of welded steel liner pipe for an upcoming repair of the Lakeview Pipeline's Bernasconi Tunnel.

### **Timing and Urgency**

The current state-wide drought and resulting low allocation of State Water Project (SWP) supplies by the California Department of Water Resources (DWR) have had a direct impact on recent supply deliveries to the Mills plant. Under normal conditions, the Mills plant relies on raw water deliveries from the East Branch of the SWP via Devil Canyon Afterbay. Due to the current low SWP allocation, Metropolitan has drafted the limited SWP volume stored in Lake Perris to serve as a raw water source for the Mills plant. In order to provide an additional source of supply, improvements are proposed which will supply the plant with water stored in DVL. These improvements include construction of an intertie between the Inland Feeder and the Lakeview Pipeline. Design has been expedited, and staff recommends proceeding with construction so the first phase of work may be completed in late 2014.

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

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## **Details**

### **Background**

The Mills plant delivers treated water to Eastern Municipal Water District and Western Municipal Water District of Riverside County. It currently has a treatment capacity of 220 million gallons per day (mgd). Under normal conditions, the Mills plant relies exclusively on raw water deliveries from the East Branch of the SWP via DWR's Devil Canyon Afterbay. Under current drought conditions, the plant has also been supplied with pumped flows from Lake Perris. At the present time, due to piping constraints, the Mills plant is unable to access the water stored in DVL. The subject project will enable water to be supplied directly to the plant from DVL to enhance supply delivery capabilities.

This enhancement of supply deliveries to the Mills plant will be accomplished in two phases. The first phase, which is the subject of this action, includes: (1) Construction of an intertie from the Inland Feeder to the Lakeview Pipeline at a facility known as the PC-1 pressure control structure; (2) Installation of a surge protection system at the existing Perris Pumpback Facility; and (3) Fabrication of one mile of steel pipe which will be used to line a portion of the Lakeview Pipeline known as the Bernasconi Tunnel. The second phase of work, which is

tentatively scheduled to be completed in mid-2015, will include installation of the liner pipe within the Bernasconi Tunnel. Staff will return to the Board at a later date for award of that contract.

The first phase of work is planned to be completed in October 2014, allowing up to 95 cubic feet per second (cfs) of water from DVL to serve the Mills plant on an interim basis. Due to hydraulic constraints, this interim mode of operation is dependent on the water level in Lake Perris. Upon completion of the tunnel lining under the second phase of work, the flowrate will increase to 200 cfs and will be independent of the level in Lake Perris.

Under the present action, planned work at the intertie location includes construction of 450 feet of 96-inch and 54-inch diameter piping, five concrete valve vaults, eight valves ranging in diameter from 24 to 84 inches, and modifications to electrical and control systems to operate the new valves.

The Perris Pumpback Facility, which is located at the base of Lake Perris Dam, presently consists of four electric pumps which can supply up to 140 cfs to the Mills plant from Lake Perris. Sudden changes in flow velocity resulting from pump failure or sudden starting or stopping of a pump could cause surges that would potentially damage the Lakeview Pipeline. Installation of a surge tank system is needed to protect the pipeline from surge-related damage. The surge protection system will include a 12-foot-diameter by 50-foot-long surge tank, air compressor, piping to the surge tank, four valves ranging in diameter from 24 to 60 inches, installation of flow meters, and modifications to electrical and control systems.

The Bernasconi Tunnel is presently unlined and has tunnel walls of bare rock. In order to withstand the hydraulic pressure of the water level in DVL, the tunnel needs to be lined with a steel pipe. As noted previously, fabrication of 5,280 feet of 114-inch diameter steel liner will occur during the first phase of work. Since pipe fabrication will take approximately six months to complete, the fabrication should commence without delay. Staff plans to return to the Board for award of the liner installation contract in late 2014.

In April 2014, Metropolitan's Board authorized final design of the Lakeview Pipeline/Inland Feeder Intertie, the Perris Pumpback Facility surge protection system, and pipe fabrication for the Bernasconi Tunnel liner. Final design has been now completed, and staff recommends proceeding with construction.

#### **Lakeview Pipeline/Inland Feeder Intertie – Construction (\$30,100,000)**

Specifications No. 1787 for the Lakeview Pipeline/Inland Feeder Intertie was advertised for bids on April 24, 2014. As shown in [Attachment 2](#), four bids were received and opened on May 29, 2014. The low bid from J. F. Shea Construction, Inc. in the amount of \$20,365,430 complies with the requirements of the specifications. The three higher bids ranged from approximately \$22.8 million to \$23.9 million. The engineer's estimate was \$19.97 million. For this contract, Metropolitan has established a Small Business Enterprise (SBE) participation level of at least 5 percent of the bid amount, reflecting the highly specialized nature of the work and the limited subcontracting opportunities.

This action appropriates \$30.1 million and awards a \$20,365,430 contract to J. F. Shea Construction, Inc. for the Lakeview Pipeline/Inland Feeder Intertie, Perris Pumpback Facility surge protection, and fabrication of steel liner pipe for the Bernasconi Tunnel. In addition to the amount of the contract, the appropriated funds include \$1,332,000 for Metropolitan force activities, which include dewatering the facilities, establishing clearances, return of the pipeline back to service, installation of flow meters at the Perris Pumpback Facility, potholing to identify interferences, and start-up of the new surge protection system. The requested funds also include: \$1,931,000 for procurement of valves; \$1,984,000 for construction and fabrication inspection; \$901,000 for Metropolitan staff to review submittals, respond to requests for information, advise inspectors on technical issues as they arise, and prepare record drawings; \$40,000 for technical support for the surge system by the design consultant, Black & Veatch, as discussed below; \$418,000 for permits, environmental monitoring, and project management; and \$3,128,570 for remaining budget.

Metropolitan staff will perform inspection of the construction contract. The anticipated cost of inspection is approximately 8.4 percent of the total construction cost. Engineering Services' goal for inspection of construction greater than \$3 million is 9 to 12 percent. The total cost of construction for this intertie, which includes the construction contract, Metropolitan force activities, and procurement of the valves, is \$23,628,430.

The total estimated cost to complete the two phases of work to improve Mills supply reliability, including the amount authorized to date, current funds requested, and future construction cost, is \$42.2 million.

### **Technical Support by Black & Veatch – No Action Required**

Black & Veatch performed final design of the surge protection system. As the Engineer of Record, Black & Veatch is recommended to provide technical support during construction. These activities will include review of specialized equipment submittals, responding to requests for information, and advising staff on technical issues as they arise. The estimated cost for these services is \$40,000. No amendment to the existing agreement with Black & Veatch is required for this work.

Metropolitan entered into an on-call agreement for professional services with Black & Veatch following a competitive selection process via Request for Qualifications No. 1032. For that agreement, Metropolitan established an aggregate SBE participation level of 18 percent. Black & Veatch has agreed to provide this level of participation.

This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2013/14 capital expenditure plan. See [Attachment 1](#) for the Financial Statements and [Attachment 3](#) for Location Map.

This work is budgeted under two capital appropriations. The Lakeview Pipeline/Inland Feeder Intertie is included within Appropriation No. 15488, the Water Delivery System Improvements Appropriation, which was initiated in fiscal year 2013/14. With the present action, the total funding for this appropriation will increase from \$1.1 million to \$24.2 million. The Bernasconi Tunnel Repairs is included within Appropriation No. 15480, the Conveyance and Distribution System Rehabilitation Appropriation – FY 2012/13 Through FY 2017/18, which was initiated in fiscal year 2012/13. With the present action, the total funding for this appropriation will increase from \$2.91 million to \$9.91 million.

### ***Project Milestones***

October 2014 – Completion of the Lakeview Pipeline/Inland Feeder Intertie

January 2015 – Completion of fabrication of steel liner pipe for the Bernasconi Tunnel

### **Policy**

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Metropolitan Water District Administrative Code Section 5108: Appropriations

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

### **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 project involves the funding; operation, repair, maintenance, or minor alterations of existing public facilities; and reconstruction or replacement of existing public facilities along with the construction of minor appurtenant structures. In addition, the proposed project involves minor modifications in the condition of land, water, and/or vegetation which does not involve removal of healthy, mature, scenic trees. Accordingly, the proposed action qualifies under Class 1, Class 2, Class 3, and Class 4 Categorical Exemptions (Sections 15301, 15302, 15303, and 15304 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under four Categorical Exemptions (Class 1, Section 15301; Class 2, Section 15302; Class 3, Section 15303; and Class 4, Section 15304 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 action is categorically exempt, and

- a. Appropriate \$30.1 million; and
- b. Award \$20,365,430 contract to J. F. Shea Construction, Inc. for the Lakeview Pipeline/Inland Feeder Intertie.

**Fiscal Impact:** \$7 million of capital funds under Approp. 15480 and \$23.1 million of capital funds under Approp. 15488

**Business Analysis:** This option will enhance system reliability by providing a backup water source for the Mills plant during periods of low flow deliveries from the State Water Project, during planned shutdowns, or following an emergency such as a major seismic event.

**Option #2**

Do not proceed with the Lakeview Pipeline/Inland Feeder Intertie project at this time.

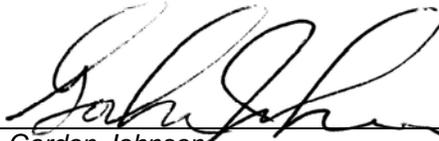
**Fiscal Impact:** None

**Business Analysis:** This option would forgo an opportunity to enhance supply delivery capabilities for the Mills plant.

**Staff Recommendation**

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Option #1

  
 \_\_\_\_\_ 6/2/2014  
 Gordon Johnson Date  
 Manager/Chief Engineer  
 Engineering Services

  
 \_\_\_\_\_ 6/3/2014  
 Jeffrey Nightlinger Date  
 General Manager

**Attachment 1 – Financial Statements**

**Attachment 2 – Abstract of Bids**

**Attachment 3 – Location Maps**

**Financial Statement for Water Delivery System Improvements Appropriation**

A breakdown of Board Action No. 2 for Appropriation No. 15488 for the Lakeview Pipeline/Inland Feeder Intertie<sup>1</sup> is as follows:

	<b>Previous Total Appropriated Amount (Apr. 2014)</b>	<b>Current Board Action No. 2 (June 2014)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ -	\$ -	\$ -
Final Design	785,000	-	785,000
Owner Costs (Program mgmt., envir. permitting, public outreach)	160,000	313,000	473,000
Submittals Review & Record Drwgs	-	771,000	771,000
Construction Inspection & Support	-	1,847,000	1,847,000
Metropolitan Force Construction	-	1,284,000	1,284,000
Materials & Supplies	-	1,931,000	1,931,000
Incidental Expenses	-	32,000	32,000
Professional/Technical Services	-	-	-
Black & Veatch	75,000	40,000	115,000
Right-of-Way	-	-	-
Equipment Use	-	-	-
Contracts	-	14,365,430	14,365,430
Remaining Budget	80,000	2,516,570	2,596,570
<b>Total</b>	<b>\$ 1,100,000</b>	<b>\$ 23,100,000</b>	<b>\$ 24,200,000</b>

**Funding Request**

<b>Appropriation Name:</b>	Water Delivery System Improvements		
<b>Source of Funds:</b>	Revenue Bonds, Replacement and Refurbishment or General Funds		
<b>Appropriation No.:</b>	15488	<b>Board Action No.:</b>	2
<b>Requested Amount:</b>	\$23,100,000	<b>Budget Page No.:</b>	177
<b>Total Appropriated Amount:</b>	\$24,200,000	<b>Total Appropriation Estimate:</b>	\$31,000,000

<sup>1</sup> The total amount expended to date on the Lakeview Pipeline/Inland Feeder Intertie and Perris Pumpback Facility surge protection system is approximately \$1.1 million. The total estimated cost to complete this work, including the amount authorized to date, current funds requested, and future expenditures, is approximately \$24.2 million.

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

A breakdown of Board Action No. 5 for Appropriation No. 15480 for the Bernasconi Tunnel Repairs<sup>1</sup> is as follows:

	<b>Previous Total Appropriated Amount (Apr. 2014)</b>	<b>Current Board Action No. 5 (June 2014)</b>	<b>New Total Appropriated Amount</b>
Labor			
Studies & Investigations	\$ 687,000	\$ -	\$ 687,000
Final Design	616,000	-	616,000
Owner Costs (Program mgmt., envir. monitoring, permitting)	376,000	105,000	481,000
Submittals Review & Record Drwgs	-	130,000	130,000
Construction Inspection & Support	-	137,000	137,000
Materials & Supplies	-	-	-
Incidental Expenses	7,000	16,000	23,000
Professional/Technical Services	862,000	-	862,000
Right-of-Way	11,000	-	11,000
Equipment Use	-	-	-
Contracts	-	6,000,000	6,000,000
Remaining Budget	351,000	612,000	963,000
<b>Total</b>	<b>\$ 2,910,000</b>	<b>\$ 7,000,000</b>	<b>\$ 9,910,000</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>	5
<b>Requested Amount:</b>	\$7,000,000	<b>Budget Page No.:</b>	286
<b>Total Appropriated Amount:</b>	\$9,910,000	<b>Total Appropriation Estimate:</b>	\$17,210,700

<sup>1</sup> The total amount expended to date on the Bernasconi Tunnel Repairs is approximately \$100,000. The total estimated cost to complete the repairs, including the amount authorized to date, current funds requested, and future expenditures, is approximately \$18 million.

**The Metropolitan Water District of Southern California**

**Abstract of Bids Received on May 29, 2014 at 2:00 P.M.**

**Specifications No. 1787**

**Inland Feeder/Lakeview Pipeline Intertie**

The work consists of installing 450 feet of 96-inch and 54-inch diameter piping, seven valves ranging in diameter from 24 to 84 inches, five concrete vaults, a surge protection system, and fabrication of 5,280 feet of 114-inch diameter steel liner pipe.

**Engineer's Estimate: \$19,970,000**

<b>Bidder and Location</b>	<b>Total</b>	<b>SBE Amount</b>	<b>SBE %</b>	<b>Met SBE<sup>1</sup></b>
<b>J. F. Shea Construction, Inc. Walnut, CA</b>	<b>\$20,365,430</b>	<b>\$1,018,272</b>	<b>5</b>	<b>Yes</b>
Steve P. Rados, Inc. Santa Ana, CA	\$22,835,000	-	-	-
Kiewit Infrastructure West Co. Santa Fe Springs, CA	\$23,364,000	-	-	-
L. H. Woods & Sons, Inc. Vista, CA	\$23,950,000	-	-	-

<sup>1</sup> SBE (Small Business Enterprise) participation level was established at 5 percent for this contract.

# Distribution System



