



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

11/14/2017 Board Meeting

8-1

Subject

Adopt CEQA determination and appropriate \$4.57 million; and award \$3,248,000 contract to J. F. Shea Construction to repair the forebay lining and outlet tower at Lake Mathews (Appropriation No. 15441)

Executive Summary

This action awards a construction contract to repair the outlet tower and concrete lining at the Lake Mathews forebay. While the structural integrity of these facilities remains sound at present, repairs are needed to maintain reliability and prevent further damage.

Timing and Urgency

The forebay at Lake Mathews features a reinforced concrete reservoir and a 60-foot-tall concrete outlet tower with steel walkways and a steel control building. The moist conditions above the forebay's water surface create a corrosive environment that has gradually damaged the concrete surfaces, reinforcing steel, steel walkways, and control room. Due to the importance of the forebay in delivering untreated water to the Upper Feeder and Lower Feeder, staff recommends proceeding with repairs during a shutdown of the forebay scheduled for February 2018.

This project has been reviewed with Metropolitan's Capital Investment Plan (CIP) prioritization criteria and is 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

Background

Lake Mathews is the terminus of the Colorado River Aqueduct (CRA). Water stored in the reservoir is withdrawn through the lake's main outlet towers into the forebay, and is then conveyed through the Upper Feeder and Lower Feeder to the F. E. Weymouth and Robert B. Diemer Water Treatment Plants, respectively.

Lake Mathews was constructed in the 1930s. The original facilities included the main dam embankment, the lake's first outlet tower, and the forebay with its own outlet tower. In 1961, the main dam embankment was raised and two dikes were constructed to increase the lake volume to its current capacity of 182,000 acre-feet. Lake Mathews is under the jurisdiction of the California Division of Safety of Dams, which requires that the forebay and its outlet tower remain operational at all times.

The forebay is a reinforced concrete reservoir with a capacity of 31 acre-feet. The forebay's outlet tower is a 60-foot-tall rectangular concrete structure with steel exterior walkways and a steel control building at the top. The fixed cone valves that control the release of water from the lake into the forebay produce moist conditions that have gradually damaged the concrete, reinforcing steel, steel walkways, and control room, along with the lining of the forebay.

In March 2017, Metropolitan's Board authorized final design to repair the outlet tower and forebay. Bids have been received for the repairs, and staff recommends award of the construction contract at this time so critical

elements of the work may be completed during a shutdown of the Upper Feeder, Lower Feeder and forebay that is scheduled for February 2018.

Lake Mathews Forebay Repairs – Construction Phase (\$4,570,000)

The scope of the contract includes: (1) removal of the spalled and damaged concrete down to sound concrete; (2) replacement of severely corroded reinforcing steel; (3) repair of less corroded reinforcing steel by sandblasting and applying a corrosion inhibitor; (4) installation of a cathodic protection system on the forebay tower; (5) replacement of damaged concrete on the tower and in the forebay; and (6) replacement of the forebay outlet tower's steel walkways and control building. Metropolitan force activities will include dewatering of the forebay and return of the facility to service. During the shutdown, the contractor will install scaffolding for the work on the tower and will repair the forebay lining. The repairs to the tower will be conducted under a special operating condition that will limit downstream flows through the Lower Feeder for a period of six months, but will not impact deliveries to member agencies.

Specifications No. 1910 for repair of the forebay tower and lining at Lake Mathews was advertised for bids on August 18, 2017. As shown in **Attachment 2**, three bids were received and opened on October 4, 2017. The low bid from J. F. Shea Construction in the amount of \$3,248,000 complies with the requirements of the specifications. The two higher bids were \$3,546,000 and \$6,817,500, while the engineer's estimate was \$3.3 million. For this contract, Metropolitan established a Small Business Enterprise (SBE) participation level of at least 15 percent of the bid amount. J. F. Shea Construction has committed to meet this level of participation. The subcontractors for this contract are listed in **Attachment 3**.

This action appropriates \$4.57 million and awards a \$3,248,000 contract to J. F. Shea Construction for repair of the forebay tower and lining at Lake Mathews. In addition to the amount of the contract, the requested funds include \$132,500 for Metropolitan force shutdown activities; \$400,500 for construction inspection; \$79,000 for project management and preparation of record drawings; \$265,000 for submittals review and responding to contractor requests for information; \$65,000 for technical support by HDR Engineering, as discussed below; and \$380,000 for remaining budget.

Metropolitan staff will perform inspection of the construction. For this project, the anticipated cost of inspection is approximately 11.9 percent of the total construction cost. Engineering Services' goal for inspection of projects with construction more than \$3 million is 9 to 12 percent. The total cost of construction for this project, including the contract and Metropolitan force activities, is approximately \$3.38 million.

The total estimated cost to complete the forebay repairs, including the amount expended to date and current funds requested, is approximately \$5.5 million.

Technical Support During Construction (HDR Engineering) – No Action Required

HDR Engineering performed final design of the structural repairs and cathodic protection system for the tower under a board-authorized agreement. As the engineer of record, HDR Engineering will provide technical support during construction related to the structural and cathodic protection aspects of the work. The estimated cost for these services is \$65,000.

No amendment is needed to the existing agreement with HDR Engineering to provide technical support. For this agreement, Metropolitan established an SBE participation level of 18 percent. HDR Engineering has agreed to meet this level of participation. The subconsultants for this agreement are listed in **Attachment 4**.

Summary

This action appropriates \$4.57 million and awards a construction contract to repair the forebay outlet tower and forebay lining at Lake Mathews. This project is included within capital Appropriation No. 15441, the Conveyance and Distribution System Rehabilitation Appropriation – FY 2006/07 through FY 2011/12, which was initiated in fiscal year 2006/07. With the present action, the total funding for Appropriation No. 15441 will increase from \$100,589,000 to \$105,159,000.

This project has 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, **Attachment 2** for the Abstract of Bids, **Attachment 3** for the listing of Subcontractors for Low Bidder, **Attachment 4** for the listing of Subconsultants for the Agreement with HDR Engineering, and **Attachment 5** for the Location Map.

Project Milestone

September 2018 – Completion of construction of forebay tower and lining repairs

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

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

By Minute Item 50756, dated March 14, 2017, the Board authorized three rehabilitation projects at Lake Mathews, including repairs to the forebay.

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action is categorically exempt under the provisions of CEQA and the State CEQA Guidelines. The overall activities involve repair and replacement of existing facilities, construction of new facilities, and minor alteration of land, with negligible or no expansion of use and no possibility of significantly impacting the physical environment. 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

Option #1

Adopt the CEQA determination that the proposed action is categorically exempt, and

- a. Appropriate \$4.57 million; and
- b. Award \$3,248,000 contract to J. F. Shea Construction to repair the forebay tower and lining at Lake Mathews.

Fiscal Impact: \$4.57 million of capital funds under Appropriation No. 15441

Business Analysis: This option will rehabilitate aging infrastructure and enhance the reliability of water deliveries from Lake Mathews to the Weymouth and Diemer plants.

Option #2

Do not proceed with construction at this time.

Fiscal Impact: None

Business Analysis: This option would forego an opportunity to reduce the risk of urgent forebay repairs that could lead to water delivery impacts to the Weymouth and Diemer plants. This option may result in higher repair costs and unplanned shutdowns.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer
Engineering Services

10/24/2017
Date



Jeffrey Knightlinger
General Manager

10/30/2017
Date

Attachment 1 – Financial Statement

Attachment 2 – Abstract of Bids

Attachment 3 – Subcontractors for Low Bidder

Attachment 4 – Subconsultants for Agreement with HDR Engineering

Attachment 5 – Location Map

Ref# es12657402

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

A breakdown of Board Action No. 79 for Appropriation No. 15441¹ is as follows:

	Previous Total Appropriated Amount (Aug. 2017)	Current Board Action No. 79 (Nov. 2017)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 4,816,914	\$ -	\$ 4,816,914
Final Design	6,516,293	-	6,516,293
Owner Costs (Program mgmt.)	8,529,123	79,000	8,608,123
Submittals Review & Record Drwgs.	1,613,670	265,000	1,878,670
Construction Inspection & Support	6,818,550	400,500	7,219,050
Metropolitan Force Construction	12,757,710	132,500	12,890,210
Materials & Supplies	3,593,040	-	3,593,040
Incidental Expenses	1,334,900	-	1,334,900
Professional/Technical Services	3,954,000	-	3,954,000
HDR Engineering	125,000	65,000	190,000
Right-of-Way	1,150,000	-	1,150,000
Equipment Use	330,200	-	330,200
Contracts	45,570,762	-	45,570,762
J. F. Shea Construction	-	3,248,000	3,248,000
Remaining Budget	3,478,838 ²	380,000	3,858,838
Total	\$ 100,589,000	\$ 4,570,000	\$ 105,159,000

Funding Request

Appropriation Name:	Conveyance and Distribution System Rehabilitation – FY 2006/07 Through FY 2011/12		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15441	Board Action No.:	79
Requested Amount:	\$ 4,570,000	Budget Page No.:	212
Total Appropriated Amount:	\$ 105,159,000	Total Appropriation Estimate:	\$ 182,700,000

¹The total amount expended to date for the Lake Mathews forebay repairs is approximately \$965,000. The total estimated cost to complete these repairs, including the amount appropriated to date and current funds requested, is approximately \$5.5 million.

²Includes previous reallocation of \$637,000 from Remaining Budget for final design and construction change orders to replace a valve at the Collis Avenue Valve Structure.

The Metropolitan Water District of Southern California

Abstract of Bids Received on October 4, 2017 at 2:00 P.M.

Specifications No. 1910

Lake Mathews Forebay Tower and Lining Repairs

The work includes removal of spalled concrete and corroded reinforcing steel from the Lake Mathews forebay tower and lining, replacement with new concrete and steel reinforcement, and installation of a cathodic protection system.

Engineer's Estimate: \$3,300,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE¹
J. F. Shea Construction Walnut, CA	\$3,248,000	\$683,075	21	Yes
Kiewit Infrastructure West Co. Santa Fe Springs, CA	\$3,546,000	-	-	-
Mladen Buntich Construction Upland, CA	\$6,817,500	-	-	-

¹ Small Business Enterprise (SBE) participation level established at 15% for this contract.

The Metropolitan Water District of Southern California

Subcontractors for Low Bidder

**Specifications No. 1910
Lake Mathews Forebay Tower and Lining Repairs**

Low bidder: J. F. Shea Construction

Subcontractor and Location
Corrpro Co., Santa Fe Springs, CA
Connor Concrete Cutting & Coring, Norco, CA
Superior Gunite, Lakeview Terrace, CA
Cor-Ray Painting Co., Santa Fe Springs, CA
TN Sheet Metal Inc., Fountain Valley, CA
Kelagoon Construction Mgmt. & Consultant, Fontana, CA
Matt-Chlor Inc., El Monte, CA
Vertical Access Inc., Santa Fe Springs, CA

The Metropolitan Water District of Southern California**Subconsultants for Agreement with HDR Engineering
Agreement No. 140027**

Subconsultant and Location
Beyaz & Patel Inc., San Diego, CA
MWA Architects Inc., San Francisco, CA
Ninyo & Moore, Irvine, CA
ProjectLine Technical Services, Corona Del Mar, CA
SA & Associates, Arcadia, CA
TJC & Associates, Rancho Cordova, CA

Distribution System

