



- Board of Directors
Engineering and Operations Committee

12/10/2013 Board Meeting

8-4

Subject

Appropriate \$5,430,000; and award \$3,725,000 contract to Mladen Buntich Construction Co., Inc. to replace a portion of the interior lining in the Etiwanda Pipeline (Approp. 15441)

Executive Summary

This action awards a construction contract to replace the interior mortar lining on approximately 2,800 feet of the Etiwanda Pipeline. This work will serve as the first phase of a multi-phase effort to replace the pipeline's damaged interior mortar lining. The work has been scheduled to take advantage of a planned shutdown of the pipeline commencing in May 2014.

Timing and Urgency

Internal inspections of the Etiwanda Pipeline have identified that approximately 37 percent of the cement mortar lining in the northern portion of the pipeline has fallen off or become delaminated from the steel pipe cylinder. While the pipeline remains in service and the structural integrity of the line remains sound at present, the deteriorated condition of the cement mortar lining will expose the pipeline over time to accelerated rates of corrosion and eventual leakage. In order to maintain long-term reliability of the line, staff recommends moving forward with the first phase of lining repairs at this time.

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 2013/14.

Details

Background

The Etiwanda Pipeline was constructed in 1993 to convey untreated water from the Rialto Pipeline to the Upper Feeder. This 6.4-mile-long welded steel pipeline is 144 inches in diameter. The northern portion of the pipeline, which is 5.4 miles long, conveys high-pressure water to the Etiwanda Power Plant. From that facility, the southern portion of the pipeline continues for one mile to an interconnection with the Upper Feeder. The pipeline is located within the cities of Fontana and Rancho Cucamonga.

The Etiwanda Pipeline allows Metropolitan to generate power from the high pressure flows available in the northern portion of the line. Under peak flow conditions, annual revenues from the Etiwanda Power Plant have reached \$8.3 million. The Etiwanda Pipeline also provides flexibility in conveying untreated water from the East Branch of the State Water Project to the F. E. Weymouth Water Treatment Plant.

The Etiwanda Pipeline was constructed with a ¾-inch-thick interior mortar lining to prevent corrosion of its steel pipe cylinder. During an internal inspection conducted in 2008, staff discovered that approximately 37 percent of the northern portion of the line has missing or delaminated mortar lining. At the present time, corrosion is not yet severe and the structural integrity of the pipeline remains sound. Over time, however, the loss of mortar lining will expose the pipeline to accelerated rates of corrosion and eventual leakage.

Since the initial discovery, staff and third-party pipeline experts have conducted extensive investigations into the cause of the lining damage. The primary cause is believed to be the daily internal pressure fluctuation within the pipeline resulting from power operations at the Etiwanda Power Plant. This fluctuation of internal pressure likely produced stress cracking in the mortar lining. In addition, the seasonal variation in availability of State Water Project supplies resulted in prolonged periods when the pipeline was removed from service, creating drying and shrinkage cracks which exacerbated the situation.

Several options were evaluated to provide reliable long-term performance under the facility's unique operating conditions. The assessment focused on polyurethane and epoxy linings, which have previously been used for internal corrosion protection (due to their superior flexibility) at power plant penstocks and water pipelines with smaller diameters. Staff's conclusion from this assessment is that polyurethane would most likely provide the best combination of long-term performance with the pipeline's fluctuating internal pressures, as well as lower installation cost.

In December 2012, Metropolitan's Board authorized final design to replace the lining in the Etiwanda Pipeline. The first phase of the repairs will replace the cement mortar lining in approximately 2,800 feet of the pipeline with a polyurethane lining.

Final design of the Phase 1 repairs has been completed, and staff recommends moving forward with construction to take advantage of a planned shutdown of the line commencing in May 2014.

Etiwanda Pipeline Lining Repairs, Phase 1 – Construction (\$5,430,000)

Specifications No. 1752 was advertised for bids on October 7, 2013. As shown in [Attachment 2](#), five bids were received and opened on November 5, 2013. The low bid from Mladen Buntich Construction Co., Inc. in the amount of \$3,725,000 complies with the requirements of the specifications. The four other bids ranged from \$4,183,054 to \$4,828,888, while the engineer's estimate was \$4,129,000. For this contract, Metropolitan established a Small Business Enterprise (SBE) participation level of at least 10 percent of the total bid amount. Mladen Buntich Construction Co., Inc. is an SBE firm, and thus achieves 100 percent participation.

This action appropriates \$5,430,000 and awards a \$3,725,000 contract to Mladen Buntich Construction Co., Inc. to replace a portion of the lining in the Etiwanda Pipeline. In addition to the amount of the contract, the requested funds include \$570,000 for Metropolitan force activities, which includes dewatering, establishment of clearances, and return of the pipeline to service. The requested funds also include \$566,000 for construction inspection; \$114,000 for submittals review and record drawing preparation by Metropolitan staff; \$203,000 for local agency permitting, environmental monitoring, public outreach, and project management; and \$252,000 for remaining budget.

Construction inspection will be performed by Metropolitan staff. For this project, the anticipated cost of inspection and support is approximately 13.3 percent of the total construction cost. Engineering Services' goal for inspection of construction contracts greater than \$3 million is 9 to 12 percent. Inspection costs for this project are expected to exceed the goal because the inspection will be procedural-based and will require close monitoring of the application methods, along with frequent testing of the lining material to measure the adequacy of the curing and adhesion. In addition, public outreach efforts and permitting constraints on the contractor's work will increase the inspector activities. The total cost of construction for the first phase of repairs is \$4,295,000.

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. The work is included within capital Appropriation No. 15441, the Conveyance and Distribution System Rehabilitation Program - FY 2006/07 Through 2011/12, which was initiated in fiscal year 2006/07. With the present action, the total funding for Appropriation No. 15441 will increase from \$46,479,000 to \$51,909,000.

The total estimated cost to complete the Etiwanda Pipeline Lining Repairs, Phase 1, including the amount authorized to date and current funds requested, is approximately \$8,470,000.

See [Attachment 1](#) for the Financial Statement, [Attachment 2](#) for the Abstract of Bids, and [Attachment 3](#) for the Location Map.

Project Milestone

October 2014 – Completion of the first phase of lining repairs for the Etiwanda Pipeline

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

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

The proposed action to repair a pipeline less than one mile in length is statutorily exempt under the provisions of CEQA and the State CEQA Guidelines (Section 15282(k)). The proposed project involves the 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 is statutorily exempt (Section 21080.21 of the California Public Resources Code and Section 15282(k) 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 statutorily exempt, and

- a. Appropriate \$5,430,000; and
- b. Award \$3,725,000 contract to Mladen Buntich Construction Co., Inc. to replace a portion of the interior lining of the Etiwanda Pipeline.

Fiscal Impact: \$5,430,000 in capital funds under Approp. 15441

Business Analysis: This option will allow needed repairs to proceed on a damaged portion of the Etiwanda Pipeline, which will protect Metropolitan's assets and reduce the risk of costly emergency repairs.

Option #2

Do not proceed with the project at this time.

Fiscal Impact: Unknown

Business Analysis: This option would forego an opportunity to enhance reliability and extend the service life of the Etiwanda Pipeline, and could lead to higher costs, more extensive repairs, and unplanned shutdowns.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer,
Engineering Services

11/18/2013
Date



Jeffrey Nightlinger
General Manager

11/25/2013
Date

- [Attachment 1 – Financial Statement](#)
- [Attachment 2 – Abstract of Bids](#)
- [Attachment 3 – Location Map](#)

Ref# es12627428

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

A breakdown of Board Action No. 58 for Appropriation No. 15441 for Phase 1 lining repairs on the Etiwanda Pipeline¹ is as follows:

	Previous Total Appropriated Amount (Aug. 2013)	Current Board Action No. 58 (Dec. 2013)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 3,218,000	\$ -	\$ 3,218,000
Final Design	4,286,293	-	4,286,293
Owner Costs (Program mgmt., permitting, public outreach)	5,570,623	201,000	5,771,623
Submittals Review & Record Drwgs	350,670	114,000	464,670
Construction Inspection & Support	2,244,550	566,000	2,810,550
Metropolitan Force Construction	9,136,710	555,000	9,691,710
Materials & Supplies	2,330,400	10,000	2,340,400
Incidental Expenses	943,900	2,000	945,900
Professional/Technical Services	2,636,000	-	2,636,000
Right-of-Way	550,000	-	550,000
Equipment Use	325,200	5,000	330,200
Contracts	13,001,801	3,725,000	16,726,801
Remaining Budget	1,884,853 ²	252,000	2,136,855
Total	\$ 46,479,000	\$ 5,430,000	\$ 51,909,000

Funding Request

Program Name:	Conveyance and Distribution System Rehabilitation Program – FY 2006/07 Through FY 2011/12		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15441	Board Action No.:	58
Requested Amount:	\$ 5,430,000	Budget Page No.:	284
Total Appropriated Amount:	\$ 51,909,000	Total Program Estimate:	\$ 106,335,000

¹ The total amount expended to date on the Etiwanda Pipeline lining repairs is approximately \$1,474,800. The total estimated cost to complete the Phase 1 repairs, including the amount authorized to date and current funds requested, is \$8,470,000.

² Includes previous allocation from Remaining Budget for the following: (1) \$125,000 for additional geotechnical investigations needed to assess rock stability for the San Gabriel Tower; (2) \$25,000 for differing site conditions which required additional concrete for the Santiago Lateral Access Road Repair; and (3) \$72,000 for differing site conditions which required drilling through rock for the Upper Feeder Cathodic Protection Project.

The Metropolitan Water District of Southern California
Abstract of Bids Received on November 5, 2013 at 2:00 P.M.
Specifications No. 1752
Etiwanda Pipeline Liner Repairs – Phase 1

The work consists of removal of existing cement mortar lining, abrasive blasting; and application of new lining within a 144-inch-diameter steel pipeline for approximately 2,800 feet.

Engineer's Estimate: \$4,129,000

Bidder and Location	Total	SBE \$	SBE %	Met SBE¹
Mladen Buntich Construction Co., Inc. Upland, California	\$3,725,000	\$3,725,000	100%	Yes
J. F. Shea Construction, Inc. Walnut, California	\$4,183,054	-	-	-
Kiewit Infrastructure West Co. Santa Fe Springs, California	\$4,231,650	-	-	-
Steve P. Rados, Inc. Santa Ana, California	\$4,258,000	-	-	-
L. H. Woods & Sons, Inc. Vista, California	\$4,828,888	-	-	-

¹ SBE (Small Business Enterprise) participation level was established at 10 percent for this contract.

