



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

6/9/2015 Board Meeting

7-3

Subject

Appropriate \$1.9 million; and authorize design to complete lining repairs on the Etiwanda Pipeline (Approp. 15441)

Executive Summary

This action authorizes design to complete needed repairs to the damaged interior mortar lining on approximately five miles of the Etiwanda Pipeline, and certifies a Final Environmental Impact Report (EIR) for those repairs.

Timing and Urgency

Internal inspections of the Etiwanda Pipeline have identified that approximately 37 percent of the mortar lining 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, corrosion of the steel will continue to advance until the lining is repaired.

Staff previously conducted an extensive investigation to determine the cause of the lining failure and to identify options for long-term repair. As a result of this effort, the most cost-effective solution was determined to be removal of the existing cement mortar lining and replacement with a polyurethane coating. The repairs will be conducted in two phases. The initial phase of construction to replace 2,800 feet of interior lining was completed in November 2014. During the construction, it was discovered that corrosion and pitting of the steel pipe cylinder beneath the delaminated mortar lining was more severe than had been anticipated. Staff closely inspected the condition of the steel cylinder to confirm its structural integrity, and monitored the surface preparation and coating application methods to ensure there was adequate curing and adhesion of the new polyurethane coating. The experience gained from this initial phase of repairs has been incorporated into the work plan for relining the remaining five miles of the Etiwanda Pipeline. Staff recommends moving forward with design at this time in order to complete the needed repairs expeditiously.

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 2014/15.

Details

Background

The Etiwanda Pipeline was constructed in 1993 to convey untreated water from the East Branch of the State Water Project (SWP) to the Upper Feeder for blending with Colorado River water, and to provide flexibility in conveying SWP flows to the F. E. Weymouth Water Treatment Plant. This 6.4-mile-long welded steel pipeline is 144 inches in diameter. The north portion of the pipeline, which is 5.4 miles long, conveys high-pressure water from the Rialto Feeder to the Etiwanda Power Plant. From that facility, the south 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 due to the high pressure available in the north portion of the line. Under peak flow conditions, annual revenues from the Etiwanda Power Plant have reached \$8.3 million.

The Etiwanda Pipeline was constructed with a ¾-inch-thick interior mortar lining to prevent corrosion of the steel pipe cylinder. During an internal inspection conducted in 2008, staff discovered that approximately 37 percent of the north portion of the line has missing or delaminated mortar lining. Although the internal lining has eroded, the structural integrity of the pipeline remains sound at present. Over time, however, the loss of mortar lining will expose the pipeline to accelerated rates of corrosion and eventual leakage.

In December 2013, Metropolitan's Board awarded a construction contract for the initial phase of lining repairs on 2,800 feet of the Etiwanda Pipeline. In November 2014, the construction was completed. This work represented Metropolitan's first use of polyurethane to reline an existing large-diameter pipe under field conditions. By performing this work on a relatively short length of the feeder, staff was able to confirm the production rates and efficiencies of the lining process prior to commencing the full-scale repairs. The experience gained during the initial contract has been incorporated into the work plan for relining the remaining five miles of the feeder. The remaining repairs will be performed under two sequential construction contracts that are scheduled to commence in late 2015 and in 2016.

Staff recommends proceeding with design to complete the lining repairs on the remaining five miles of the Etiwanda Pipeline. In order to assess the potential environmental impacts of these repairs, Metropolitan initiated preparation of environmental documentation in 2012. The environmental process has now been completed, and staff recommends certification of the Final EIR at this time.

Etiwanda Pipeline Lining Repairs – Design Phase (\$1,900,000)

Planned design phase activities include preparation of drawings and specifications; acquisition of temporary right-of-way for the contractor staging and work areas; local agency permitting; shutdown planning with member agencies; receipt of multiple bids; and development of construction cost estimates. This project will require some construction equipment to operate 24 hours per day. As a result, nearby residences will be subject to round-the-clock construction noise and lighting. During the design phase, staff will investigate noise mitigation options including placement of noise blankets around equipment and use of local agency power instead of diesel generators.

This action appropriates \$1.9 million and authorizes design phase activities to complete the lining repairs on the Etiwanda Pipeline. The requested funds include \$921,000 for design, \$240,000 for permitting, bidding, and project management; \$570,000 for acquisition of temporary easements for construction; and \$169,000 for remaining budget. All final design phase activities will be performed by Metropolitan staff.

For this project, the anticipated cost of final design is approximately 2.1 percent of the estimated construction cost. Engineering Services' goal for design of projects with construction cost greater than \$3 million is 9 to 12 percent. The construction cost for this project is anticipated to range from \$44 million to \$48 million.

The total estimated cost to complete this project, including the amount appropriated to date, current funds requested, and future construction costs, is anticipated to range from \$57 million to \$60 million.

Etiwanda Pipeline Lining Repairs – Certification of Final EIR (No funds required)

In December 2012, Metropolitan's Board authorized preparation of environmental documentation for planned lining repairs on the Etiwanda Pipeline. Environmental documentation is required to assess the project's potential impacts to air quality and other factors such as traffic, noise, and cultural resources, in accordance with California Environmental Quality Act (CEQA). Staff has completed preparation of an EIR and evaluated the environmental impacts of the proposed project, and incorporated measures to either mitigate potential impacts or reduce them to a level less than significant.

This action certifies that the Final EIR has been prepared in compliance with CEQA and the State CEQA guidelines. The CEQA determination is discussed in a later section of this letter.

Summary

This action appropriates \$1.9 million, authorizes design to complete the lining repairs on the Etiwanda Pipeline, and certifies the project's Final EIR. This project has been evaluated and recommended by Metropolitan's CIP Evaluation Team, and funds are available within the fiscal year 2014/15 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 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 \$62,639,000 to \$64,539,000. Staff will return to the Board at a later date for award of the construction contracts.

Project Milestone

August 2015 – Completion of design of lining repairs on the Etiwanda Pipeline

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

California Environmental Quality Act (CEQA)

CEQA determination for Option #1:

Metropolitan's Board authorized the preparation of environmental documentation in 2012 to analyze potential impacts for relining the Etiwanda Pipeline. Staff has completed preparation of the EIR in compliance with CEQA. The EIR for the Etiwanda Pipeline North Relining Project encompasses the relining of approximately 5 miles of the Etiwanda Pipeline between the Etiwanda Power Plant and the Rialto Feeder.

As required under CEQA and the State CEQA Guidelines, a Notice of Preparation/Initial Study (NOP/IS) was prepared and circulated for public review on August 19, 2014. The 30-day review period ended on September 17, 2014. The NOP/IS stated that the proposed project had the potential to cause one or more significant effects on the physical environment and that Metropolitan would prepare a Draft EIR.

On January 9, 2015, Metropolitan released the Draft EIR for public review; the 45-day review period ended on February 23, 2015. The Notice of Availability of the Draft EIR was published in the San Bernardino County Sun on Friday, January 9, 2015, and copies of the Draft EIR were provided to the Lewis Library and Paul A. Biane Library in the cities of Fontana and Rancho Cucamonga, respectively. Metropolitan also distributed copies of the Draft EIR to responsible agencies, trustee agencies, affected public agencies, nearby property owners, and other interested parties. Metropolitan received five letters commenting on the Draft EIR. These comment letters and responses to comments are included in the Final EIR.

As the lead agency, Metropolitan's Board must certify that the Final EIR has been completed in compliance with CEQA and the State CEQA Guidelines. The Board also must certify that it has reviewed and considered the information presented in the Final EIR. Finally, the Board must certify that the Final EIR reflects Metropolitan's independent judgment and analysis.

CEQA requires that public agencies adopt a Mitigation Monitoring and Reporting Program (MMRP) when they approve a project that contains mitigation measures to reduce or avoid significant environmental impacts (Public Resources Code § 21081.6). The Final EIR evaluated potentially significant environmental impacts and proposed feasible mitigation measures. Those mitigation measures are included in the MMRP, which Metropolitan staff will be responsible for administering. The Final EIR identified two environmental impact categories that cannot be mitigated to less-than-significant levels: Air Quality and Noise. These impacts can be reduced by the adoption of feasible mitigation measures. However, because they cannot be feasibly mitigated to below a level of significance, the Board must adopt a Statement of Overriding Considerations (SOC) for these impacts. The SOC concludes that the benefits of the proposed project substantially outweigh the unavoidable significant adverse impacts that would result from project implementation. In addition, the Board must also adopt the Findings of Fact (Findings), which explain the rationale for approving or carrying out a project.

See Attachment 3 for the Draft EIR, NOP/Initial Study and Technical Studies; Attachment 4 for the Final EIR (Responses to Comments and clarifications to the Draft EIR); and Attachment 5 for the Findings, the SOC, and the MMRP. Each of these attachments is available for review in the Board Executive Secretary's office.

The CEQA determination is: Certify that the Final EIR has been completed in compliance with CEQA and the State CEQA Guidelines; certify that the Board has reviewed and considered the information presented in the Final EIR; certify that the Final EIR reflects Metropolitan's independent judgment and analysis; and adopt the Findings, SOC, and MMRP.

CEQA determination for Option #2:

None required

Board Options

Option #1

Certify that the Final EIR has been completed in compliance with CEQA and the State CEQA Guidelines; certify that the Board has reviewed and considered the information presented in the Final EIR; certify that the Final EIR reflects Metropolitan's independent judgment and analysis; adopt the Findings, SOC, and MMRP; and

- a. Appropriate \$1.9 million; and
- b. Authorize design to complete the lining repairs on the Etiwanda Pipeline.

Fiscal Impact: \$1.9 million in capital funds under Approp. 15441

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

Option #2

Certify that the Final EIR has been completed in compliance with CEQA and the State CEQA Guidelines; certify that the Board has reviewed and considered the information presented in the Final EIR; certify that the Final EIR reflects Metropolitan's independent judgment and analysis; adopt the Findings, SOC, and MMRP; and

Do not authorize design to complete the lining repairs on the Etiwanda Pipeline at this time.

Fiscal Impact: None

Business Analysis: This option would defer needed repairs to the damaged lining within the Etiwanda Pipeline. Over time, the loss of mortar lining will expose the pipeline to accelerated rates of corrosion and eventual leakage. Staff would continue to periodically perform inspections of the pipeline, and would perform urgent repairs if required. Urgent repairs could result in higher repair costs.

Staff Recommendation

Option #1



Gordon Johnson
Manager/Chief Engineer
Engineering Services

5/19/2015
Date



Jeffrey Kightlinger
General Manager

5/26/2015
Date

Attachment 1 – Financial Statement

Attachment 2 – Location Map

Attachment 3 – Draft EIR (Notice of Preparation/Initial Study, Technical Studies)

Attachment 4 – Final EIR (Responses to Comments and Clarifications to the Draft EIR)

Attachment 5 – Findings, Statement of Overriding Considerations, Mitigation Monitoring and Reporting Program

Ref# es12636985

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

A breakdown of Board Action No. 69 for Appropriation No. 15441 for lining repairs on the Etiwanda Pipeline¹ is as follows:

	Previous Total Appropriated Amount (June 2015)	Current Board Action No. 69 (June 2015)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 4,305,000	\$ -	\$ 4,305,000
Final Design	5,161,293	921,000	6,082,293
Owner Costs (Program mgmt., permitting, public outreach)	6,668,123	260,000	6,928,123
Submittals Review & Record Drwgs	666,670	-	666,670
Construction Inspection & Support	3,434,550	-	3,434,550
Metropolitan Force Construction	11,077,710	-	11,077,710
Materials & Supplies	3,293,040	-	3,293,040
Incidental Expenses	946,900	-	946,900
Professional/Technical Services	2,801,000	-	2,801,000
Right-of-Way	550,000	550,000	1,100,000
Equipment Use	330,200	-	330,200
Contracts	20,838,254	-	20,838,254
Remaining Budget	2,566,260	169,000	2,735,260
Total	\$ 62,639,000	\$ 1,900,000	\$ 64,539,000

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.:	69
Requested Amount:	\$ 1,900,000	Budget Page No.:	272
Total Appropriated Amount:	\$ 64,539,000	Total Appropriation Estimate:	\$ 121,000,000

¹ The total amount expended to date on the Etiwanda Pipeline lining repairs is approximately \$7.7 million. The total estimated cost to complete the project, including the amount appropriated to date, current funds requested, and future construction costs, is anticipated to range from \$57 million to \$60 million.

Distribution System

