



- Board of Directors
Engineering and Operations Committee

3/11/2014 Board Meeting

8-2

Subject

Appropriate \$8.5 million; and award \$5,946,507 contract to J. F. Shea Construction, Inc. for prestressed concrete cylinder pipe repairs on the Second Lower Feeder (Approp. 15471)

Executive Summary

This action awards a construction contract for repair of prestressed concrete cylinder pipe (PCCP) segments on the Second Lower Feeder. These repairs will be performed during the 2014/15 shutdown season.

Timing and Urgency

In February 2013, electromagnetic inspections of the Second Lower Feeder identified that numerous PCCP segments have deteriorated significantly over the last several years. As part of a comprehensive program to manage Metropolitan's 163 miles of PCCP lines, three near-term repairs were identified for the Second Lower Feeder. Two of these repairs are currently underway. This action authorizes the third repair which will line approximately 4,900 feet of existing PCCP segments with a steel liner. This work is consistent with the long-term rehabilitation program planned for the Second Lower Feeder. Staff recommends moving forward with the repair to reduce the risk of water delivery interruptions to member agencies and of costly emergency repairs.

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.

Details

Background

The Second Lower Feeder delivers treated water from the Robert B. Diemer Water Treatment Plant in the city of Yorba Linda to Palos Verdes Reservoir in the city of Rolling Hills Estates. The feeder was constructed in 1967 and is 39 miles long. Approximately 30 miles of the line are constructed of PCCP, with diameters ranging from 78 to 84 inches. The remainder of the line is constructed of welded steel pipe with a diameter of 84 inches. The Second Lower Feeder operates at pressures up to 340 pounds per square inch and passes through areas with highly corrosive soils. In addition, there are numerous underground utility lines, natural gas lines, and oil lines within the vicinity, which expose the feeder to significant stray current interference. The pipeline traverses a highly urbanized area and crosses several freeways, several flood control channels, and an airport. In addition to supplying water to the Central Pool portion of Metropolitan's distribution system, the Second Lower Feeder has 11 service connections for deliveries to the cities of Long Beach, Los Angeles, and Torrance, the Central Basin Municipal Water District, and the Municipal Water District of Orange County.

Over the last several decades, water agencies throughout the United States and several other countries have found that under certain conditions, PCCP lines have a reduced service life and elevated risk of failure versus other types of pipe. PCCP failures can be catastrophic and can occur without forewarning, compromising system reliability and resulting in significant costs due to interruption of service, unplanned major repairs, and potential third-party damages. In response to this risk, Metropolitan initiated a comprehensive program in September 2011

to inspect, manage, and rehabilitate its 163 miles of PCCP lines. The Second Lower Feeder is the first pipeline to be addressed under this comprehensive program.

There are three coordinated work elements currently underway on the Second Lower Feeder, consistent with the feeder's long-term management strategy:

1. **Cathodic protection** – This technology represents a proactive and cost-effective measure to protect PCCP and welded steel lines from stray current interference, which is a major cause of corrosion damage in metallic pipelines. In January 2014, Metropolitan's Board awarded a construction contract to install cathodic protection on a portion of the Second Lower Feeder.
2. **Near-term repairs** – In February 2013, electromagnetic inspections of the Second Lower Feeder identified that numerous PCCP segments have deteriorated significantly over the last several years. In July 2013, Metropolitan's Board authorized near-term repairs to reduce the risk of pipeline failure, minimize repair costs, and prevent unplanned shutdowns. The repairs are being executed in stages in order to minimize the duration of pipeline shutdowns. In November 2013, the Board awarded a construction contract for repairs at the first two sites. These repairs are scheduled to be completed by June 2014.

This action addresses repairs to the third site, which is located on Carson Street within the city of Carson and the city of Long Beach. The planned repairs include installation of 4,900 feet of steel liner designed as a stand-alone pipeline which can accommodate full internal and external pressures on the line. The annular space between the steel liner and the existing PCCP segments will be filled with concrete grout. These repairs are scheduled to be completed by April 2015.

3. **Long-term rehabilitation** – In September 2013, the Board authorized the initial steps to rehabilitate remaining PCCP portions of the Second Lower Feeder. This 8- to 10-year effort will line approximately 28 miles of the feeder with a steel liner. Preliminary design and preparation of environmental documentation are currently underway. Staff plans to return to the Board in late 2014 to adopt the environmental documentation and authorize final design of the full-scale rehabilitation program.

PCCP Repairs at Site Three on the Second Lower Feeder – Construction (\$8,500,000)

Specifications No. 1775 for near-term PCCP repairs at Site 3 on the Second Lower Feeder was advertised for bids on January 8, 2014. As shown in [Attachment 2](#), five bids were received and opened on January 28, 2014. The low bid from J. F. Shea Construction, Inc. in the amount of \$5,946,507 complies with the requirements of the specifications. The four higher bids ranged from approximately \$6.15 million to \$7.11 million. The engineer's estimate was \$7.33 million. The low bid reflects the contractor's plans to aggressively complete the pipe fabrication and installation ahead of the scheduled completion date. For this contract, Metropolitan has established a Small Business Enterprise participation level of at least 10 percent of the bid amount.

This action appropriates \$8.5 million and awards a \$5,946,507-contract to J. F. Shea Construction, Inc. for PCCP repairs at Site 3 on the Second Lower Feeder. In addition to the amount of the contract, the appropriated funds include \$527,000 for Metropolitan force activities, which include shutting down a portion of the pipeline, establishing clearances, leakage control, water quality testing, and return of the pipeline to service. The requested funds also include: \$641,000 for construction inspection; \$58,000 for staff to review submittals, respond to requests for information, and advise inspectors on technical issues as they arise; \$225,000 for construction and traffic permits, environmental monitoring, public outreach activities, and project management; \$100,000 for temporary right-of-way for construction laydown; \$19,000 for preparation of record drawings; and \$983,493 for remaining budget.

Metropolitan staff will perform inspection of the construction contract. The anticipated cost of inspection is approximately 7.7 percent of the total construction cost. Engineering Services' goal for inspection of construction contracts with cost greater than \$3 million is 9 to 12 percent. The total cost of construction for these repairs, which includes the construction contract, Metropolitan force activities, and procurement of the liner pipe, is \$8.36 million.

The total estimated cost to complete the three near-term PCCP repairs on the Second Lower Feeder, including the amount authorized to date and current funds requested, is \$14.98 million.

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

This project is included within capital Appropriation No. 15471, the PCCP Replacement and Rehabilitation Appropriation, which was initiated in fiscal year 2011/12. With the present action, the total funding for Appropriation No. 15471 will increase from \$29.56 million to \$38.06 million.

Project Milestone

April 2015 – Completion of PCCP repairs at Site 3 on the Second Lower Feeder

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 is exempt under the provisions of CEQA and the State CEQA Guidelines. The proposed action includes the repair of existing pipelines with the same purpose and capacity. The proposed action involves repairs of an existing pipeline less than one mile in length. Accordingly, the proposed action qualifies for a statutory exemption (Section 21080.21 of the Public Resources Code and Sections 15282(k) of the State CEQA Guidelines).

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 \$8.5 million; and
- b. Award \$5,946,507 contract to J. F. Shea Construction, Inc. for PCCP repairs on the Second Lower Feeder.

Fiscal Impact: \$8.5 million in capital funds under Approp. 15471

Business Analysis: This project will protect Metropolitan's assets, enhance delivery reliability to member agencies, and reduce the risk of unplanned shutdowns to perform repairs.

Option #2

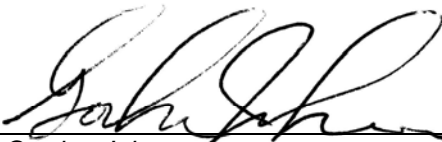
Do not proceed with the repair at this time.

Fiscal Impact: None

Business Analysis: This option would forgo an opportunity to enhance reliability and extend the service life of the Second Lower Feeder. This option could lead to higher repair costs in the future, more extensive repairs, and unplanned shutdowns.

Staff Recommendation

Option #1



2/12/2014
Date

Gordon Johnson
Manager/Chief Engineer,
Engineering Services



2/26/2014
Date

Jeffrey Kightlinger
General Manager

Attachment 1 – Financial Statement

Attachment 2 – Abstract of Bids

Attachment 3 – Location Map

Ref# es12629094

Financial Statement for PCCP Rehabilitation and Replacement Appropriation

A breakdown of Board Action No. 8 for Appropriation No. 15471 for PCCP repairs on the Second Lower Feeder¹ is as follows:

| | Previous Total Appropriated Amount (Nov. 2013) | Current Board Action No. 8 (Mar. 2014) | New Total Appropriated Amount |
|--|---|---|--|
| Labor | | | |
| Studies & Investigations | \$ 1,622,000 | \$ - | \$ 1,622,000 |
| Final Design | 1,260,579 | - | 1,260,579 |
| Owner Costs (Program mgmt., envir. monitoring, permitting, public outreach) | 2,122,000 | 220,000 | 2,342,000 |
| Submittals Review & Record Drwgs | 289,000 | 77,000 | 366,000 |
| Inspection & Support | 1,239,000 | 641,000 | 1,880,000 |
| Metropolitan Force Construction | 5,095,841 | 487,000 | 5,582,841 |
| Materials & Supplies | 928,000 | 35,000 | 963,000 |
| Incidental Expenses | 199,800 | 5,000 | 204,800 |
| Right-of-Way | | 100,000 | 100,000 |
| Professional/Technical Services | 8,304,400 | - | 8,304,400 |
| Equipment Use | 15,000 | 5,000 | 20,000 |
| Contracts | 6,584,801 | 5,946,507 | 12,531,308 |
| Remaining Budget | 1,899,579 ² | 983,493 | 2,799,579 |
| Total | \$ 29,560,000 | \$ 8,500,000 | \$ 38,060,000 |

Funding Request

| | | | |
|-----------------------------------|---|--------------------------------|--------------|
| Appropriation Name: | PCCP Rehabilitation and Replacement Appropriation | | |
| Source of Funds: | Revenue Bonds, Replacement and Refurbishment or General Funds | | |
| Appropriation No.: | 15471 | Board Action No.: | 8 |
| Requested Amount: | \$ 8,500,000 | Budget Page No.: | 323 |
| Total Appropriated Amount: | \$ 38,060,000 | Total Program Estimate: | \$42,285,000 |

¹ The total amount expended to date on the near-term PCCP repairs for the Second Lower Feeder is \$1,444,300. The total estimated amount to complete the three repairs, including the amount authorized to date and current funds requested, is \$14.98 million.

² Includes previous reallocation of \$186,400 from Remaining Budget for shutdown planning and member agency coordination for the three near-term repairs on the Second Lower Feeder and for extended acoustic fiber optic monitoring; and credit of \$1,423 to Remaining Budget from the Foothill/Seplveda Feeder PCCP Repairs.

The Metropolitan Water District of Southern California
Abstract of Bids Received on January 28, 2014 at 2:00 P.M.
Specifications No. 1775
Second Lower Feeder PCCP Repairs at Site 3

The work consists of repairing 4,900 feet of prestressed concrete cylinder pipe, including excavation and installation of both Metropolitan-furnished and contractor-furnished welded steel liner pipe.

Engineer's Estimate: \$7,330,000

| Bidder and Location | Total | SBE Amount | SBE % | Met SBE¹ |
|--|--------------------|-------------------|---------------|----------------------------|
| J. F. Shea Construction, Inc. Walnut, CA | \$5,946,507 | \$908,295 | 15.27% | Yes |
| Steve P. Rados, Inc. Santa Ana, CA | \$6,155,000 | - | - | - |
| Kiewit Infrastructure West Co. Santa Fe Springs, CA | \$6,518,000 | - | - | - |
| L. H. Woods & Sons, Inc. Vista, CA | \$6,588,000 | - | - | - |
| Mladen Buntich Construction Inc. Upland, CA | \$7,111,000 | - | - | - |

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

Distribution System

