

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

November 14, 2006 Board Meeting

7-4

Subject

Appropriate \$960,000; and authorize repairs to the Box Springs Feeder (Approp. 15377)

Description

Metropolitan's Box Springs Feeder conveys State project water from the California Department of Water Resources' Santa Ana Valley Pipeline to Metropolitan's Henry J. Mills Water Treatment Plant. The Box Springs Feeder is 96 inches in diameter and was installed in 1975. The Box Springs Feeder is a prestressed concrete cylinder pipeline (PCCP) approximately 2.26 miles in length.

Recent electromagnetic inspections have revealed sixteen 20-foot-long pipe sections with anomalous readings as to the integrity of the prestressing wires. The extent of damage, if any, at these locations could not be interpreted by the electromagnetic inspections due to the presence of internal steel bands within the pipeline. The internal bands were installed in 1989 in an attempt to repair "broken back" cracks which were discovered during a routine inspection. Circumferential cracking in "broken backs", which is caused by differential settlement of the pipeline at or near structures, compromises the structural integrity of the pipe section and exposes the pipe section to accelerated rates of corrosion and eventual leakage. The internal bands are no longer considered to be an effective means of permanent repair. Recent experience has indicated that corrosion and corresponding loss of structural integrity have continued to develop beyond the limits of the original internal band repairs. Further, the ability to assess the condition of the pipe is now hampered by the presence of the internal bands. In order to maintain reliable deliveries of source water to the Mills plant in the future, all 16 pipe sections should be removed and replaced with welded steel pipe sections. Carbon-fiber lining is not an effective repair method to correct a "broken back" pipe section.

The recommended repairs will occur in phases in order to minimize the duration of pipeline shutdowns. Phase 1 consists of the replacement of the easternmost distressed PCCP section with one segment of 20-foot-long welded steel pipe. This work is scheduled first in order to complete these repairs prior to construction of a Wal-Mart store. Wal-Mart has requested the lease of an 80-foot by 720-foot section of Metropolitan property in order to construct a parking lot. This lease was reviewed and approved at the September 26, 2006 Asset and Recreation Committee meeting, and approved by the Board on October 10, 2006. This leased section of Metropolitan property lies over the distressed pipe section of the Box Springs Feeder and bisects the proposed Wal-Mart site. Repair of this pipe section requires a shutdown of the pipeline for six days. For latter-phase repairs, Metropolitan will coordinate with the affected member agencies to minimize shutdowns while repairing multiple pipe segments.

This action authorizes final design and construction by Metropolitan forces of the Phase 1 repair of one PCCP segment located in the city of Riverside. Final design is recommended to be performed by Richard Brady & Associates (RBA) under an existing professional services agreement authorized by the Board in August 2005. For this agreement, Metropolitan has established an SBE participation level of 20 percent. No amendment to the existing RBA agreement is required for this work.

The total cost for construction, which will be performed by Metropolitan forces, is estimated to be \$709,000. In addition to the construction, the appropriated funds include \$80,000 for final design; \$74,000 for all other staff and consultant support; and \$97,000 for remaining budget. Support activities include project management, environmental coordination and permitting, and technical support during construction. The final design cost as a

percentage of the estimated total construction cost for this project is approximately 11 percent. Engineering Services' goal for design of projects with construction cost less than \$3 million is 9 to 15 percent. Staff will return to the Board at a later date to request authorization for design of repairs to the remaining 15 distressed pipe sections. It is expected that repair of these sections will take approximately three years. The repair duration will be dependent on the length and frequency of pipeline shutdowns that can be accommodated by the affected member agencies. See [Attachment 1](#) for the Financial Statement and [Attachment 2](#) for a Location Map.

Actions and Milestones

November 2006 – Completion of final design

January 2007 – Box Springs Feeder shutdown

April 2007 – Completion of construction by Metropolitan forces

Policy

Metropolitan Water District Administrative Code Section 5108: Appropriations

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. In particular, the proposed action consists of the repair, maintenance, and operating of existing equipment and facilities with negligible or no expansion of use beyond that existing at the time of the lead agency's determination. In addition, it will not have a significant effect on the environment. Accordingly, this proposed action qualifies as a Class 1 Categorical Exemption (Section 15301 of the State CEQA Guidelines).

The CEQA determination is: Determine that pursuant to CEQA, the proposed action qualifies under a Categorical Exemption (Class 1, Section 15301 of the State CEQA Guidelines).

CEQA determination for Option #2:

None required

Board Options

Option #1

Adopt the CEQA determination and

- a. Appropriate \$960,000 in budgeted funds; and
- b. Authorize final design and construction of Phase 1 repairs of the Box Springs Feeder.

Fiscal Impact: \$960,000 of budgeted funds under Approp. 15377

Business Analysis: This project will protect Metropolitan's assets, increase service reliability to customers, and reduce the risk of costly emergency repairs.

Option #2

Do not authorize the Phase 1 repairs of the Box Springs Feeder at this time. All repairs will instead be performed during a single future shutdown. The pipeline will continue to be monitored, and repairs will be made should problems occur.

Fiscal Impact: None at this time

Business Analysis: This option does not reduce the risk of costly repairs or improve reliability, and may impact the construction schedule for a Wal-Mart parking lot over the pipeline.

Staff Recommendation

Option #1



Roy L. Wolfe
Manager, Corporate Resources

10/23/2006
Date



Jeffrey Kightlinger
General Manager

10/24/2006
Date

Attachment 1 – Financial Statement

Attachment 2 – Location Maps

BLA #4824

Financial Statement for Conveyance and Distribution System Rehabilitation Program

A breakdown of Board Action No. 19 for Appropriation No. 15377 is as follows:

	Previous Total Appropriated Amount (Sept. 2006)	Current Board Action No. 19 (Nov. 2006)	New Total Appropriated Amount
Labor			
Studies & Investigations	\$ 2,860,700	\$ -	\$ 2,860,700
Final Design	2,681,920	-	2,681,920
Owners Costs (Program management & permitting)	3,470,550	74,000	3,544,550
Construction Inspection & Support	1,668,050	10,000	1,678,050
Metropolitan Force Construction	9,203,330	590,000	9,793,330
Materials and Supplies	4,505,075	65,000	4,570,075
Incidental Expenses	1,077,620	30,000	1,107,620
Professional/Technical Services	671,500	-	671,500
Richard Brady & Associates		70,000	70,000
Equipment Use	765,350	24,000	789,350
Contracts	14,597,955	-	14,597,955
Remaining Budget	3,759,650	97,000	3,856,650
Total	\$ 45,261,700	\$ 960,000	\$ 46,221,700

Funding Request

Program Name:	Conveyance and Distribution System Rehabilitation Program		
Source of Funds:	Revenue Bonds, Replacement and Refurbishment or General Funds		
Appropriation No.:	15377	Board Action No.:	19
Requested Amount:	\$ 960,000	Capital Program No.:	15377-I
Total Appropriated Amount:	\$ 46,221,700	Capital Program Page No.:	E-16
Total Program Estimate:	\$ 55,100,000	Program Goal:	R-Reliability



