DENVER BOARD OF WATER COMMISSIONERS

Meeting Date: August 27, 2014 Board Item: II-A-8

Agreement with Pure Technologies for Conduit No. 94 Electromagnetic Inspection and Acoustic Fiber Optic Monitoring System Agreement 15617A

☒ Action by Consent ☐ Action ☐ Information

On July 28, 2014, a proposal was received for the Conduit No. 94 (C94) Electromagnetic (EM) Inspection and Acoustic Fiber Optic (AFO) Monitoring System. C94 is a 15.8 mile-long conduit that carries water from the Moffat Treatment Plant to the 56th Avenue Pump Station and Reservoir. This 60-, 66-, and 72-inch conduit was constructed in the mid-1970s of prestressed concrete cylinder pipe (PCCP) for about 10.5 miles of the conduit. Unfortunately, the C94 PCCP was manufactured with high tensile strength wire which is known around the country to break and cause premature pipe failures. To date, the C94 PCCP has experienced one failure and this failure happened in May 1997 near 56th Avenue and Delaware Street.

Currently, about 2.0 miles of the original 10.5 miles of C94 PCCP has been replaced and Denver Water (DW) has a pipeline management program for the remaining 8.5 miles of PCCP. The program includes EM Inspections (condition assessment inspections) every 5 years but the program does not include continuous pipeline monitoring. Without a monitoring system, it is not possible to monitor wire break activity between condition assessments.

The goal of this project is to perform an EM Inspection on the C94 PCCP and improve the pipeline management program by installing an AFO monitoring system. The AFO monitoring system will record wire break data in each pipe section in real-time. This monitoring system, combined with EM Inspections, gives DW the baseline condition of each pipe section and the ability to record wire breaks as they occur. The wire break data is used to prioritize and minimize pipe repairs and replacements.

Results of the EM Inspections indicate 2.9% (or 98 of 3,404) PCCP segments are distressed (i.e., have wire breaks) and this rate of occurrence is consistent with the average rate for PCCP pipelines for water utilities around the nation. Additionally, this rate of occurrence supports an "assess and address" method of pipeline management which is far less expensive than the estimated $35M for a complete pipeline replacement.

A sole source solicitation is necessary for this work because the firm utilizes proprietary inspection and monitoring equipment. An agreement has been negotiated with Pure Technologies, Ltd. in the amount of $1,625,506.00. Please note that this amount includes the annual service and support fee of $110,000.00 for 2015. This fee will be budgeted annually.

No Minority and Women Business Enterprise (MWBE) goal was established for this work due to its specialized nature.

The 2014- 2015 Capital Improvement Plan (MPC 1DD0101) includes sufficient funds for this project.

Recommendation

It is recommended the Board award Agreement 15617A to Pure Technologies, Ltd. for Conduit No. 94 Electromagnetic Inspection and Acoustic Fiber Optic Monitoring System Project in the amount of $1,625,506.00.

Budget Considerations Master Plan Code(s): 1DD0101

■ Budgeted Item ☐ Unbudgeted Item ☐ Funds transferred from another project:

Budget Information

2014/2015 Budget	$	1,890,000.00
Amount Requested This Item (Agreement 15617A)	$	1,625,506.00
Amount Requested Contract 14961A	$	200,000.00
YTD Expenditures	$	0.00
Additional Expenditures Anticipated	$	64,494.00
Revised 2014/2015 Estimate	$	1,890,000.00
Variance Required	$	0.00

Approvals:

Robert J. Mahoney
Director of Engineering

for Patti Wells
General Counsel

Respectfully submitted,

for James S. Lochhead
CEO/Manager

Terri Bryant, CPA
Controller

AUGUST 20, 2014
Revised by CEO's Office 8/19/2011