

SUBJECT

BOARD RESOLUTION NO. 18-1108

Pertaining to an agreement with AECOM to provide professional services for developing technical specifications for repair to the Board's raw water supply conduits.

BACKGROUND INFORMATION

Staff is seeking approval of a \$62,000 professional services agreement with AECOM to develop technical specifications for the repair of the raw water supply conduits between the Fridley Pumping Station and McCarrons Treatment Plant.

Following Board approval, City Contracts and Analysis will prepare and execute a Professional Services Agreement, which will include the City's standard terms and conditions, liability and insurance language, and the following:

Scope of Work:

1. Conduct a kick-off meeting with SPRWS staff to review needed specifications.
2. Prepare technical specifications for repair activities to the concrete pipe;
 - i. Joint pressure testing
 - ii. Internal seal installation
 - iii. Interior concrete crack injection
 - iv. Inner and exterior pipe wall structural repair
3. Prepare technical specifications for repair activities to the steel pipe;
 - i. Mortar lining fine crack slurry
 - ii. Full thickness mortar lining
4. Develop measurement and payment instructions for the repairs listed above.
5. Attend two progress meetings once SPRWS has hired a contractor for the first year's repairs.

The work is further detailed in AECOM's June 25, 2018 Proposal, of which is attached for review.

Cost: Not to exceed \$62,000

Term: July 31, 2018 - December 31, 2019

See attached AECOM Proposal.

RECOMMENDATION

Approval is recommended.

REPORT

Raw Water Conduit Repair Technical Specifications

June 26, 2018

The system of conduits that supply raw water from the Mississippi River to the McCarrons Treatment Plant consists of 26 miles of 60-inch and 90-inch diameter pipes. The conduits run in parallel for redundancy and are separated into three distinct segments:

Mississippi Conduits (Mississippi River to Charley Lake):

Conduit #1: 1924 – 60-inch Concrete and Steel

Conduit #2: 1958 – 60-inch Steel

Pleasant Conduits (Pleasant Lake to Sucker Lake):

Conduit #1: 1936 – 60-inch Concrete

Conduit #2: 1957 – 60-inch Concrete

Vadnais Conduits (Vadnais Lake to McCarrons Treatment Plant):

Conduit #1: 1925 – 90-inch Concrete

Conduit #2: 1958 – 90-inch Steel

In the past, Vadnais staff has performed maintenance on the concrete conduits to repair joint leaks and minor concrete liner issues. This last winter AECOM completed an assessment of the conduits and found them to be in mostly good condition with plenty of service life remaining. However, most sections of the conduits, especially the older concrete ones, are in need of a significant number of minor repairs to ensure that long service life is achieved. To address the high cost of these repairs, SPRWS has created a 15 year plan that budgets on average \$1,000,000 per year to repairs.

The primary objective of the work requested of AECOM is to develop a technical specification package that encompasses the full range of minor repairs identified in their condition assessment report. Having the full specification package developed now, at the start of the multi-year repair project, allows SPRWS staff the flexibility to modify plans according to budget and time constraints without needing to involve a consultant every year. The intent is to reuse portions of the package each year depending on the conduit sections scheduled for repairs. Key aspects of AECOM's work will include:

1. Conducting a kick-off meeting, technical review meeting, and approximately two progress meetings during the first year's repair work.
2. Investigating methods for testing the steel band seals that currently are installed in the conduits.

3. Preparing technical specifications for the materials, testing equipment, and construction procedures for both the steel and concrete conduits. This includes:
 - a. Joint pressure testing of multiple manufacturers' existing seals,
 - b. Installation of new internal compression seals to either replace the current seals or to add to joints determined to be failing,
 - c. Interior crack injection repairs,
 - d. Internal and external concrete pipe wall restoration,
 - e. Repair of fine cracks and missing or broken areas in the mortar liner,
 - f. Determining the method for measuring and paying the contractor hired to perform the repair work described above.

Based on AECOM's recent work on the conduit condition assessment, we believe they are fully knowledgeable on the techniques and methods needed to repair the conduit issues noted in their report. Having inspected nearly the entire length, they are already intimately familiar with the raw water conduits and can therefore, move right into development of specifications. Consequently, this means a better value to SPRWS than bringing in a new consultant and improving the chance that we may begin repair work as early as winter/spring of 2019.