REPORT / RECOMMENDATION

To: MAYOR AND CITY COUNCIL

Agenda Item #: IV. I.

From: Chad A. Millner, PE, Director of Engineering

Action ☒
Discussion ☐
Information ☐

Date: September 16, 2014

Subject: Request for Purchase – Engineering Services For Lift Station No. 6 Rehabilitation

Action Requested:
Authorize City Manager to approve attached engineering services proposal for Lift Station No. 6 Rehabilitation.

Information / Background:

Edina Sanitary Sewer Lift Station #6 is located in Cornelia Park near the intersection of West 72nd Street and Oaklawn Avenue. Lift Station #6 pumps sanitary sewage from approximately 50% of Edina's land area, from the south and west half of the city. The pumps lift the sewage to a gravity sewer located at West 72nd Street and Cornelia Lane.

Lift Station #6 was originally constructed in 1965 and is experiencing significant deterioration of the concrete inflow channel and flow-monitoring flume. The engineering services proposal offers to determine the best method to repair the deteriorating concrete, design and specify flow-monitoring equipment, replace the existing non-functioning equipment, prepare bidding documents, provide construction oversight and prepare asbuilt drawing of the improvements. The total cost of the professional services is $35,000 and will be funded from the sanitary utility fund.

Attachment:
BARR Engineering Co. Proposal

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engineering and environmental consultants

BARR

August 26, 2014

Mr. Patrick Wrase
City of Edina
7450 Metro Boulevard
Edina, MN 55439

Re: Lift Station #6 Improvements

Dear Mr. Wrase,

Thank you for requesting this proposal from Barr Engineering Co. for plans and specifications for improvements to Edina lift station #6. This proposal describes the engineering services to be provided by Barr Engineering Co. (Barr) to the City of Edina (City) for design of repairs to the concrete influent channel and addition of flow monitoring equipment, preparation of plans and specifications, and construction observation and inspection. This proposal will consist of the following sections: Barr's Understanding of the Project, City's Role, Project Team, Proposed Project Schedule, and finally a cost estimate of Barr's fees.

Barr's Understanding of the Project
This proposal is based on discussions between the City and Barr Engineering held at a meeting at Edina Public Works June 13th, 2014. The main goal of this project is to repair the deteriorating concrete and replace the existing parshall flume with flow meters on the pump discharge piping.

Lift Station #6 is located in Cornelia Park near the intersection of W 72nd Street and Oaklawn Ave. The lift station consists of 6 dry-pit submersible pumps and receives approximately 2/3 of the City's sanitary sewer flow, with discharge rates ranging between 100-3,200 gpm.

Recently the City has noted deteriorating concrete in the influent areas of the lift station, in particular the parshall flume and concrete flow splitter. Barr completed a preliminary inspection of the lift station on May 13th, 2014, and found that the concrete deterioration was primarily surficial and limited to the first 1-2-inches of concrete. The inspection was limited to surfaces that could be inspected from the open areas of the lift station and no inspection was completed on surfaces below the sanitary sewer flow line. Results of the inspection are shown in Figure 1.

The project will be broken into four main tasks:

1. Preparation of a design memorandum to document the planned methods of repairs to the concrete and summarize historical sanitary sewer flow to the lift station.
2. Design of lift station improvements, including plans, specifications, and bidding services.
3. Construction Oversight.
4. Preparation of as-built drawings.

Work Plan

Task 1 – Design Memorandum

A design memorandum will be completed to document the recommended concrete repairs and anticipated by-pass pumping that will be required. Barr will research the methods and materials available to select a repair option that reduces lift station downtime and increases life of the repairs. Barr will involve the City in the repair option selection to ensure the project meets the City's expectations.

Barr will also review historic pump runtime, MCES meter data, historic City sanitary flow metering, and other available data to estimate the flows to Lift Station 6 so a conservative by-pass pumping flowrate can be estimated for use by the Contractor completing the repairs.

Task 2 –Design of Lift Station #6 Improvements

The design of the lift station improvements will occur as two separate project bids. The first will focus on the structural repairs in the "wet" part of the lift station. The second will focus on the SCADA changes needed to incorporate the new flow meters into the control system.

For the concrete repairs Barr will perform design and engineering services needed to prepare bidding documents for the lift station repairs in wet part of the station. The documents will be similar to those prepared for the previous lift station project and will consist of specifications and drawings necessary to depict the required work to prospective bidders. As in past projects, Barr will assist the City with bidding services and meet with City staff as needed to obtain input for the design process.

In addition, Barr will prepare a second set of documents related to the SCADA modifications. We will review the SCADA modifications required to accommodate the new flowmeters. These changes are likely to be software oriented. We will work with the City to determine if you would like these changes to be performed by the original SCADA hardware software vendor to avoid warranty issues or if you would like to open up the SCADA process to other integrators. The deliverable for this work would then be a request for a quote to make the appropriate changes sent to the original vendor of the equipment or to a larger list of integrators if the City so chooses. Note that this deliverable is separate from the other bid for the concrete repairs.

Task 3 – Construction Oversight

Barr plans to be onsite during the work to further inspect the lift station once the flow has been diverted. Barr will then work with the City to direct the contractor to make any additional repairs to areas that had been below the flow line. Barr will also perform construction such as partial and final pay estimates, change orders, and general on-site construction observation. Less actual construction oversight will be needed for the SCADA portion of the project. For that work we will primarily be reviewing shop drawings to ensure that the system will function with the current software.

Task 4 – Preparation of As-built Drawings

At the completion of the work Barr will update the construction drawings based on the actual work completed and provide the City with an as-built drawing set documenting the work that was completed.

City of Edina's Role

This proposal is based on the understanding that the City of Edina will provide information as needed to assist in this project. Barr specifically requests that the City provide the following items:

1. Information on existing pumps, including model information, run times, and operational logic.

This project is also based on the understanding that the City will be in charge of the administration of the bidding process.

Project Team

For this project, we have assembled a team of engineers and technicians who have extensive experience with the City of Edina. Our team includes: overall project quality control will be maintained by Brian LeMon, Project Manager will be Dan Nesler, structural engineering will be completed by Brian Tri, and electrical engineering will be completed by Stuart Stephens.

Proposed Project Schedule

Barr proposes to begin work September 2nd, or as soon as we are notified that this proposal is acceptable to the City. We assume all data will be received by September 15th and analyzed by September 22nd. Barr proposed to complete the plans and specifications by October 14th. Bid opening is anticipated bid to occur in late October with construction in either November or December.

Cost Proposal
Barr will perform the services listed in this proposal for an estimated cost of $35,000. Note that construction services are included but can vary dramatically based on what is encountered during construction.

If you have any questions or require additional information please contact us. We look forward to working with the City on this project.

Sincerely,

Brian LeMon, P.E.
Vice President

Accepted this ___ day of _____, 201_

CITY OF EDINA

By_____

Its_____