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Public Works

City Transit
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MEMORANDUM

Equipment Maintenance
Roadway Maintenance
Collection & Drainage
Building & Grounds
Engineering

To: Brian Stineman, Public Works Director

CC: Greg Jenkins, Interim City Administrator

FROM: Jim Edgmond, City Engineer

DATE: August 13, 2020

RE: Request to Approve Professional Services for Final Design of D.U.R.F. Project

INTRODUCTION:

Over two years ago the City of Muscatine suffered a failure of the force main pumping sewage from the Papoose Lift Station to the Water & Resource Recovery Facility (WRRF). This failure resulted in an event that was reported to the DNR by the City according to the requirements of DNR.

BACKGROUND:

Due to this event the City of Muscatine is under a DNR deadline to design and construct a redundant sewage force main by 2026. Completion of this redundant line will allow the sewage to be shifted to the new main should there be any problems or damage to the existing line. This will allow repairs to be done without the necessity of by passing the pump station. In April of this year the Council Approved \$30,000 for the location study and Preliminary Design of this project. This work has been completed so that the City has an estimated construction cost for the next budget cycle. Now the final design has to be completed and the Consultant has negotiated the fee for the final design.

RECOMMENDATION/RATIONALE:

Staff recommends that Council approve a purchase order for a Professional Services Agreement with Strand and Associates (SA) for an hourly contract amount not to exceed \$197,000.00 for final design of the DURF Project. The entire project is estimated to be 2.2 to 2.5 million dollars in construction costs. Funds are allocated in the current budget for this design work in the Sewer Extension and Improvement Reserve. This negotiated Design fee is within the budgeted amount.

BACKUP INFORMATION:

1. Professional Services Agreement

"I remember Muscatine for its sunsets. I have never seen any on either side of the ocean that equaled them" — Mark Twain

Task Order No. 20-02
City of Muscatine, Iowa (OWNER)
and Strand Associates, Inc.® (ENGINEER)
Pursuant to Agreement for Technical Services dated March 30, 2019

Project Information

Project Name: Redundant Force Main Project

Project Description: This project includes the study of the existing Papoose Lift Station force main system from the intersection of Oregon Street and Canadian Pacific Railway (CPR) to the Wastewater Treatment facility, design of a 3,200-linear-foot dual 24-inch diameter redundant force main system, 1,000 linear feet of eight-inch force main, associated valving, connections, and appurtenances.

Services Description: Provide preliminary and final design and bidding-related services.

Scope of Services

ENGINEER will provide the following services to OWNER.

Project Management and Stakeholder Communication

1. Participate in and facilitate up to six monthly progress meetings with OWNER via teleconference.
2. Participate in and facilitate three in-person design review meetings with OWNER.
3. Communicate with utility providers and participate in one utility meeting to incorporate approximate existing utility locations and potential utility relocations into the drawings and specifications as provided by the utilities.
4. Communicate with CPR while designing the two crossings at the railroad to facilitate and obtain permit. Prepare up to two drawing and specifications submittals for CPR to review related to work through CPR right-of-way (R/W). Review the CPR utility occupancy license agreement, provide comments to OWNER, and incorporate CPR standards into the Bidding Documents as appropriate.
5. Communicate with trenchless specialty contractors to assist in design development and opinions of probable construction cost.
6. Assist OWNER in obtaining the following permits:
 - a. Iowa Department of Natural Resources (IDNR) wastewater construction permit.
 - b. IDNR National Pollutant Discharge Elimination System (NPDES) Permit No. 2.
 - c. CPR Utility Occupancy License.

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7. Participate in and facilitate one in-person public involvement meeting.
8. Perform a constructability review with OWNER staff prior to final drawing completion.

Geotechnical Analysis

Contract with a subconsultant to perform ten geotechnical soil borings along the project corridor. The subconsultant will review soil types, groundwater levels, dewatering needs, bearing capacity, and foundation and slope stability with respect to potential construction. The subconsultant will provide a geotechnical report to be submitted to OWNER and CPR, meeting the standards of the CPR Geotechnical Protocol for Pipeline and Utility Installations within railway R/W, dated February 14, 2020.

Topographic Survey

1. Provide topographic survey for the potential dual 24-inch force main corridor starting at the existing Wastewater Treatment facility and ending at the intersection of Oregon Street and CPR. Provide topographic survey for the potential 8-inch force main corridor starting at the Schley Avenue Pumping Station and ending at Musser Park.
2. Perform the survey in and reference to the Iowa Regional Coordinate System Burlington Zone, NAVD 88 (2012).
3. Set horizontal and vertical control throughout the project corridor to be utilized during design and construction of the project.
4. Survey will include:
 - a. Existing curbs, sidewalks, edge of pavement, drive aprons, pavement surfaces, visible utility appurtenances, and locations of existing force main structures.
 - b. Request utility locates through Iowa One Call and survey marked utilities.
 - c. Identify and locate property pins as necessary to establish R/W.
 - d. Perform existing utility structure inventory to establish existing utility elevations, sizes, materials, and condition. Approximately 40 structures will be inventoried.

Design Services

1. Review the current Papoose Pumping Station flow data provided by OWNER for force main sizing.
2. Prepare preliminary drawings and submit to OWNER for review at the 30 percent, 60 percent, and 90 percent completion.
3. Prepare drawings and technical specifications for the construction of approximately 7,400 total linear feet of force main piping, including:
 - a. Modifications to existing process piping at the wastewater treatment plant for the new force main connections.

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- b. Utility abandonments and pavement/structure removals.
 - c. Up to 600 linear feet of trenchless construction of force main and casing pipe required by CPR under CPR tracks.
 - d. Up to 100 linear feet of trenchless construction of 6-inch piping under CPR for a future irrigation system.
 - e. Construction staging drawings for detour routes throughout the project corridor.
 - f. Force main plan and profiles.
 - g. Force main connections and valving.
 - h. Structural wall repair modifications to the existing Papoose Lift Station for replacing the existing 16-inch force main with a 24-inch force main.
 - i. Restoration of pavements and turf areas.
 - j. Spot storm sewer, water main, and sanitary sewer relocations to accommodate the force main construction. Communicate with Muscatine Power and Water (MPW) regarding water main relocations.
 - k. Erosion control and Stormwater Pollution Prevention Plan (SWPPP).
 - l. Prepare one easement exhibit and a metes and bounds description for acquisition of property by OWNER from Cargill, Inc.
4. Prepare opinions of probable construction cost at the 30 percent, 60 percent, and 90 percent completion and submit to OWNER for review.

Contract Documents and Bidding-Related Services

1. Prepare final Contract Documents consisting of the following:
 - a. Construction drawings using MicroStation on 11-inch by 17-inch plan sheets.
 - b. Bidding Documents using OWNER's General Requirements, 2020 Statewide Urban Design and Specifications (SUDAS) standards specifications, and OWNER supplemental specifications. Incorporate MPW standard specifications into the contract documents.
2. Provide the following bidding-related services:
 - a. Prepare addenda and answer questions during bidding and attend preconstruction meeting.

Compensation

OWNER shall compensate ENGINEER for Services under this Task Order on an hourly rate basis plus expenses a not-to-exceed fee of \$197,000.

FINAL COPY

Strand Associates, Inc.®

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Schedule

Services will begin upon execution of this Task Order, which is anticipated the week of August 31, 2020. Services are scheduled for completion on February 28, 2021.

OWNER's Responsibilities

In addition to those items found in the associated Agreement for Technical Services, OWNER shall be responsible for the following:

1. Assist ENGINEER with railroad coordination, including obtaining access to the railroad R/W through easement or a Right-of-Entry Agreement.
2. Pay for any agency permit, railroad access, and any railroad protective liability insurance fees.
3. Bid the project.

TASK ORDER AUTHORIZATION AND ACCEPTANCE:

ENGINEER:

STRAND ASSOCIATES, INC.®

Joseph M. Bunker
Corporate Secretary

Date

OWNER:

CITY OF MUSCATINE

Diana Broderick
Mayor

Date

**NOT FOR
SIGNATURE**