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July 23, 2024

Will Stallard
Water Services Division
City of Kingsport
1113 Konnarock Road
Kingsport, TN 37664

Subject: Proposal for Professional Services for the Wastewater Treatment Plant Influent Pump Station and Headworks Project

Dear Mr. Stallard:

CDM Smith is pleased to present our proposal for Professional Engineering services for the Wastewater Treatment Plant Influent Pump Station and Headwork Assessment project. This proposal includes preliminary engineering services to assess alternatives for upgrading the plant's influent pump station and headworks.

Background

The City of Kingsport (City) owns and operates the Kingsport Wastewater Treatment Plant (WWTP). The influent pump station that feeds the WWTP is a vital part of the Kingsport wastewater treatment system. As described in the recent Kingsport WWTP Master Plan, the condition of the pump station coupled with other hydraulic conditions have resulted in needed improvements to meet the City's wastewater treatment needs. The City has recently acquired land adjacent to the existing pump station to further facilitate the desired improvements. This additional land will also allow for the construction of flow equalization facilities near the influent pump station. These facilities will help eliminate collection system sanitary sewer overflows by equalizing infiltration and inflow (I&I) related peak flows entering the WWTP.

The project will be implemented in a phased approach with tasks as follows:

- Task 1 – Alternatives Analysis and Improvements Selection (Basis of Design)
- Task 2 – Preliminary and Final Design
- Task 3 – Permitting
- Task 4 – Bidding Services
- Task 5 – General Services During Construction



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This proposal is for Task 1 services and can be amended for future phase services based on the final recommended scope of improvements. A detailed description of the Task 1 scope of services is as follows.

Scope of Services and Schedule

Task 1 – Alternatives Analysis and Improvements Selection

Task 1.1 – Project Kick-off Meeting – CDM Smith conduct an in-person meeting with Kingsport staff to finalize project goals and critical success factors, develop project alternatives, define project constraints, and establish the project schedule. Other topics to be discussed include, but are not limited to:

- Design Criteria
- Sources and availability of data/information
- Further discussion of land ownership
- Other project stakeholders
- Initial risk discussion
- Permitting

Task 1.2 – Data Collection and Review – Available data and information will be obtained and distributed to the project team for review. Information will include, but not limited to:

- Existing Drawings
- Existing geotechnical information
- Influent flow monitoring data
- Existing pump specifications
- Pump Station flow data

Task 1.3 – Alternatives Definition – CDM Smith will define each of the feasible alternatives sufficiently to proceed with the alternatives evaluation. Alternatives definition will include, but not limited to:

- Land use and location of new facilities

- Preliminary sizing of pipes, pumps and other major mechanical equipment
- Horizontal and vertical alignment of new piping
- Connections to new facilities
- Power Supply requirements
- System Controls
- Redundancy/reliability provisions
- Construction methods

Task 1.4 – Existing System Hydraulics Evaluation – CDM Smith will evaluate the existing system hydraulics under current and future flow scenarios as well as the gravity influent piping. Key considerations include existing pump performance, future pump performance, redundancy/reliability, pipe sizing, flow measurement, flow distribution, and flow equalization.

Task 1.5 – Future Facility Basis of Design – CDM Smith will document the basis of design for the new and/or rehabilitated facilities. These facilities will include, the influent pump station, flow diversion, headworks, and equalization. Influent collection system hydraulic impacts will also be evaluated.

Task 1.6 – Preliminary Geotechnical Evaluation – CDM Smith will perform a preliminary geotechnical evaluation of the project site so that a decision on the overall layout of the facilities can be made. To develop a reasonable cost estimate at the alternatives stage of the project, existing subsurface information will be utilized. It is assumed that additional geotechnical information will be required in future phases.

Task 1.7 – Power Distribution and Controls Evaluation – CDM Smith will evaluate the existing power distribution and system controls for each alternative and provide recommendations to achieve desired reliability, redundancy, and operational control for each alternative. Preliminary electrical single line diagrams and P&IDs will be developed for each alternative.

Task 1.8 – Alternatives Evaluation – Each alternative will be evaluated in terms of implementation feasibility, constructability, and operability to meet Kingsport's goals and objectives. Maintenance of plant operations during construction will be considered as well as construction and operational phase risks for each alternative.

Using the results of the aforementioned tasks, each of the feasible alternatives will be sufficiently refined to enable preliminary capital cost estimating and evaluation of non-cost factors, including

but not limited to, implementation feasibility, identified risks and future improvements. Preliminary results will be presented to Kingsport staff in a in-person? workshop style meeting with the goal of ranking the alternatives. The CDM Smith project team will develop preliminary life cycle cost estimates for up to three of the top ranked alternatives.

Task 1.9 – Permitting Analysis – CDM Smith will identify all permits needed for each alternative and determine permit application requirements. Permitting agencies will be contacted to confirm and identify potential concerns.

Task 1.10 – Basis of Design Report (BODR)/Presentation – CDM Smith will prepare and submit draft BODR report documenting the results of Tasks 1.1 – 1.9. Key members of the team will present the results to Kingsport Staff in an in-person workshop style meeting with the goal of selecting the recommended alternative and developing a project delivery plan, including a schedule. The document will provide conceptual level alternatives analysis and sufficient information to enable the development of recommended alternative for upgrading the influent pump station, headworks, and implementing flow equalization. CDM Smith will prepare general arrangement site plan and process mechanical drawings for each alternative. Following the workshop meeting, CDM Smith will issue meeting minutes to document the selected improvement alternative for implementation of future Tasks 2-5. Comments from workshop will be incorporated into a final BODR.

Task 1.11 – Project Management, QA/QC, Project Meetings – Project management tasks include, but are not limited to:

- Internal project team communications
- Internal quality assurance/quality control reviews
- Up to two additional meetings with Kingsport staff (in addition to the workshop meeting in Task 1.10)
- Monthly project management administration

Assumptions:

- CDM Smith will develop up to 3 influent pump station and headworks alternatives that will include a combination of rehabilitation of existing facilities and new facilities.
- CDM Smith will develop up to 2 equalization alternatives.
- The City shall be responsible for, and CDM Smith may rely upon, the accuracy and completeness of all requirements, programs, instructions, reports, data, and other



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information furnished by the City to CDM Smith pursuant to this Agreement. CDM Smith may use such requirements, programs, instructions, reports, data, and information in performing or furnishing services under this Agreement. CDM Smith's scope of work does not include verifying City Provided Information for accuracy or completeness. The City may request an independent review of City Provided Information by CDM Smith pursuant to a mutually agreed amendment to this Agreement. CDM Smith shall be entitled to an adjustment in price and schedule to the extent that any corrective action in CDM Smith's Services arises out of inaccurate City Provided Information.

Time of Completion

Task Description	Completion Dates
Task 1 - Alternatives Analysis and Improvement Selection	5 Months from NTP
Task 2 - Preliminary and Final Design	TBD
Task 3 - Permitting	TBD
Task 4 - Bidding Services	TBD
Task 5 - General Services During Construction	TBD

Payment and Compensation

The City of Kingsport shall compensate the Engineer for providing services set forth herein in accordance with the terms of the Agreement. Invoicing for the work shall be monthly on a lump sum percentage of work completed basis. A status report will accompany each progress invoice.

The total Contract amount shall not exceed \$238,000 without written amendment to this authorization.

On behalf of the entire CDM Smith organization, I want to express our appreciation for the opportunity to work with the City on this important project. If you have any questions about this proposal, or any matter, please do not hesitate to contact me.



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Very truly yours,

A handwritten signature in blue ink, appearing to read "Daniel Unger". The signature is stylized and cursive.

Daniel Unger, P.E., PMP, Assoc. DBIA
Principal
CDM Smith