CITY OF HIGH POINT
AGENDA ITEM

TITLE: **Waterview PS, Force Main, and Gravity Sewer Improvements — Professional Engineering Services Black and Veatch International Company**	
FROM: Robby Stone – Public Services Director Derrick Boone – Asst. Public Services Director	**MEETING DATE:** February 19, 2024
PUBLIC HEARING: N/A	**ADVERTISED DATE/BY:** N/A
ATTACHMENTS: Scope of Services Map	

PURPOSE: To approve a Task Order with Black and Veatch for the professional engineering services to evaluate the Waterview sanitary sewer system. The city has a Master Agreement for Professional Services with Black and Veatch.

BACKGROUND: The City of High Point owns and operates the existing 3.6 MGD Waterview Pumping Station (PS) and associated force main and gravity sewers. Growth in the northern portion of the Waterview basin and limited downstream receiving sewer capacity is driving the need to expand the Waterview PS and associated pipelines. The Waterview Pumping Station Preliminary Engineering Project will evaluate the needed capacity and pump station upgrades to determine the best way to increase capacity, hydraulic evaluations, gravity sewer and force main sizing and routing, and other system improvements needed to provide the necessary capacity for the Waterview basin.

BUDGET IMPACT: Funds for this project are available in the FY 2023-2024 budget.

RECOMMENDATION/ACTION REQUESTED: The Public Services Department recommends Council approve this Task Order for Professional Engineering Services to Black and Veatch International Company in the amount of $215,000 and to authorize appropriate city staff to execute all necessary documents.

Black & Veatch International Company
175 Regency Woods Place, Suite 200, Cary, NC 27518
P +1 9194627423 E campbelldl@bv.com

February 6, 2024

City of High Point
211 S. Hamilton Street
High Point, NC 27260

Attention: Robby Stone, PE – Public Services Director

Subject: **Waterview PS, Force Main, and Gravity Sewer Improvements Project**

Dear Mr. Stone:

Attached for your approval is Attachment A Scope of Services and Attachment B Compensation for the subject Project. The City of High Point owns and operates the existing 3.6 MGD Waterview Pumping Station (PS) and associated force main and gravity sewers. A 2023 update to the 2019 Sanitary Sewer Master Plan (SSMP) shows that the downstream Riverdale Pump Station can be expanded, and that effort is underway. Growth in the northern portion of the Waterview basin and limited downstream receiving sewer capacity is driving the need to expand the Waterview PS and associated pipelines.

The Waterview Pumping Station PER Project will evaluate the needed capacity and evaluate the new pumping station to determine the best way to increase capacity, hydraulic evaluations, gravity sewer and force main sizing and routing, and other system improvements needed to provide the necessary capacity for the Waterview basin.

We appreciate and look forward to the opportunity to work with you and your staff on this important project.

Very truly yours,

Black & Veatch International Company

Mike Osborne, PE
Associate Vice President

D. Lee Campbell, Jr., PE
Project Manager

ATTACHMENT A
SCOPE OF SERVICES

Owner: City of High Point, North Carolina
Engineer: Black & Veatch International Company
Project: Waterview Pump Station, Force Main, and Gravity Sewer Improvements

This Scope of Services outlines the preliminary engineering for the Waterview Pump Station, Force Main, and Gravity Sewer Improvements Project (herein after referred to as "Project"). The Scope of Services for detailed design, permitting, bidding, and construction administration and inspection services are not included herein and are anticipated to be contracted later as an amendment to this Agreement.

The City of High Point (hereinafter referred to as "Owner") owns and operates the existing 3.6 MGD capacity Waterview Pumping Station (PS) which pumps to the Riverdale Pump Station and ultimately to the Eastside WWTP. An addendum to the Sanitary Sewer Master Plan (SSMP) completed in November 2023 noted that Riverdale Pump Station will be expanded from 30 MGD to 45 MGD, and therefore could receive more additional flow. The original SSMP completed in 2019 noted that Riverdale PS could not be expanded and therefore planning had focused on diverting flow away from the Riverdale basin. Growth in the northern portion of the Waterview basin and limited downstream receiving capacity is driving the need to expand Waterview PS and associated pipelines.

The major components of the facilities anticipated to be evaluated under this project include a new pumping station adjacent to or on the existing Waterview PS site, influent gravity sewer upsizing, receiving gravity sewer upsizing, and a new force main. The capacity of the new pump station will be evaluated and it is assumed to have a firm capacity of 6.8 MGD as indicated in the SSMP. Other considerations include odor control as there have been odor complaint issues in the receiving sewer and a condition assessment of the existing Waterview PS to determine what may be utilized as part of a new or improved pump station facility.

The preliminary engineering for the Waterview PS & Pipelines Project will include evaluations of the following elements:

- Evaluation of existing Waterview PS for potential to expand the station or reuse key components of the station
- Hydraulic/Pumping evaluation
- Sizing and routing of approximately 14,400 LF of influent gravity sewer, 21 to 27 inches
- Sizing and routing of approximately 12,100 LF of 16 inch force main
- Sizing and routing of approximately 13,000 LF of receiving gravity sewer, 18-30 inches
- Necessary improvements to downstream receiving gravity sewer.

The Scope of Services is anticipated to be performed as follows:

Preliminary Engineering Services

Preliminary Evaluations	5 months
Preliminary Engineering Report	2 months

PHASE 1000. PROJECT MANAGEMENT AND ADMINISTRATION

A. Administration and Coordination.

1. Conduct a project initiation meeting to clarify Owner's requirements for the project; review available data and project organization and staffing; and present initial work plan and schedule.

2. Conduct consultations and meetings with State and Federal agencies concerning the project to determine their requirements. One meeting is anticipated.

3. Arrange for and participate in five monthly project meetings with Owner to review progress and exchange ideas and information.

4. Prepare and distribute the minutes for project meetings. Minutes for the project meetings will include a record of decisions made and why those decisions were made.

B. Provide project management and administration for a 7-month period to:

1. Correspond and consult with City,

2. Coordinate activities of the Engineer's project team,

3. Develop and implement specific work plans, procedures and a quality control and quality assurance plan, and

4. Provide overall project direction to Engineer's personnel to meet City's objectives.

5. Maintain a project filing system throughout the life of Project to use for storage and retrieval of project documents.

6. Prepare monthly invoices and status reports to document Project progress.

PHASE 2000. PRELIMINARY ENGINEERING

A. Preliminary Evaluations

1. Hydraulic/Pumping Evaluation. Utilizing the existing collection system model and the population projections from the 2019 City of High Point Sanitary Sewer Master Plan provided by Owner, Engineer will conduct evaluations of the existing and future collection system to determine the following pertaining to the new PS:

    a. Identification of planning period flow projections that will enter into the collection system serving the Waterview PS. Owner will be asked to confirm any new flows not captured in the 2019 Master Plan.

    b. Selection of current and future pumping station capacities for the new Waterview PS.

    c. Evaluate type, quantity, and capacity of the pumping units for the new PS.

    d. Develop system head curve data for current and future conditions. Select operating conditions of pumping units (flow, head, horsepower, speed).

    e. Evaluate surge potential and associated surge mitigation measures needed at pumping station.

    It is assumed the existing model is calibrated, additional calibration is not required, and no adjustments to population projections or planning period will be required.

2. Pump Station Evaluation. Engineer will identify and evaluate up to three potential scenarios for the new PS including a new pump station to meet firm capacity, expanding the existing Waterview PS, or a new station that operates in parallel with the existing Waterview PS. Engineer will visit the site to conduct an evaluation of the existing station and develop high level conceptual site layouts which can be applied to the three scenarios.

3. Pipeline Evaluations. Engineer will evaluate sizing and routing of new influent gravity sewer, force main, and downstream receiving gravity sewer. The evaluations will include the following:

    a. Review existing inspection data such as CCTV data, but no new inspection is included in this scope.

b. Conduct a site visit to evaluate routes of proposed pipelines. One day is budgeted for this effort.

c. Review record drawings of existing pipelines provided by the Owner to verify sizes, materials, and easement widths.

d. Routes will be evaluated and compared in terms of cost, easement needs, environmental impacts, and constructability. Up to three alternative routes will be evaluated.

e. GIS maps will be provided for the alternatives.

f. Environmental work will be limited to desktop analysis utilizing readily available information from various government sources such as US Fish and Wildlife, State Historical Preservation Office, and local GIS data. Field surveys for threatened and endangered species or wetland and stream identification are not included in this scope.

4. Pumping Station Facilities Evaluation. The pumping station is anticipated to utilize submersible pumps in a pre-cast wetwell assembly. An adjacent pre-engineered building will house the electrical gear (constant speed starters, step-down transformers, power panels, lighting panels, and communications panels). No interior plumbing is planned. Standby power generator and antenna for remote communications are included. Odor control system is anticipated to consist of carbon adsorption system for treatment of the submersible pump wetwell headspace. No provisions for screenings removal are included. The evaluation will include the following:

a. Develop preliminary site plan with conceptual building floor plans.

b. Develop basic utilities services concepts, including standby power or redundant power supply.

c. Develop I/O and future CCTV requirements of new pump station for use in the evaluation and development of the communication infrastructure requirements between new pump station and existing SCADA system.

5. Preliminary Evaluation Workshops. Two Workshops will be conducted with Owner to review and discuss the Preliminary Evaluations, obtain feedback, and select improvements to be designed. Engineer will prepare and distribute meeting minutes for the workshops which will include a record of decisions made. The selected improvements will be documented in the Preliminary Engineering Report described below.

B. Preliminary Engineering Report

1. A Preliminary Engineering Report (PER) will be prepared to provide a summary of design data and other information to be used for a basis of design

for the facilities. Tabular format will be used where practical. The PER will include pertinent information from the preliminary evaluations and detailed information as required to provide the following information:

a. Horizontal and Vertical Datum.

b. Applicable codes and standards.

c. General site and new facilities layout.

d. GIS mapping of selected pipeline routing.

e. Process equipment listings, including size and type.

f. Major electrical, instrumentation and control systems description.

g. Description of emergency standby power provisions.

h. Auxiliary systems descriptions, e.g., sampling systems, security systems.

i. Special instructions from Owner, e.g., standardized equipment.

j. Permitting log.

k. Opinion of Probable Construction Cost.

2. Conduct quality control review and revise as required.

3. Review workshop. Conduct a review workshop with Owner to review and discuss the design memorandum and obtain feedback. Engineer will prepare and distribute minutes for workshop which will include a record of decisions made.

PHASE 3000. OWNER'S RESPONSIBILITIES

A. The Owner will be responsible for the following in support of this project.

1. Provide all information on existing facilities.

2. Provide access to existing facilities as appropriate.

3. Operation of all valves, pumps, and other equipment.

4. Easement negotiations and acquisitions.

PHASE 4000. SUPPLEMENTAL SERVICES

A. Any work requested by Owner that is not included in one of the items listed in any other phase will be classified as supplemental services.

B. Supplemental services shall include, but are not limited to:

1. Additional meetings with local, State, or Federal agencies to discuss the project.

2. Supplemental engineering work required to meet the requirements of regulatory or funding agencies that become effective subsequent to the date of this agreement.

3. Special consultants or independent professional associates required by Owner.

4. Changes in the general scope, extent, or character of the project, including, but not limited to:

    a. Changes in size or complexity.

    b. Owner's schedule, design, or character of construction.

    c. Revision of previously accepted studies, reports, design documents, or construction contract documents when such revisions are required by changes in laws, rules, regulations, ordinances, codes, or orders enacted subsequent to the preparation of such studies, reports, documents, or designs; or are required by any other causes beyond Engineer's control.

5. Design, Permitting or construction services

6. Additional permitting or regulatory meeting assistance.

7. Value engineering reviews or services.

8. Coordination of and expenses for trips with Owner to other facilities to review facility features and operation and maintenance requirements of process.

9. Hazardous materials testing and subsequent provisions for hazardous materials handling and disposal.

10. Any additional development, calibration or population projections of Owner's existing collection system model.

11. Hydraulic evaluation and flow projections of other pumping stations beyond the new Waterview PS.

12. Land acquisition assistance for new pump station site and pipeline easements.

13. Field investigations including site survey and geotechnical for new pump station and pipelines.

14. Environmental investigations for new pump station and pipelines.

15. Inspections of existing pipes.

ATTACHMENT B

Owner: City of High Point, North Carolina
Engineer: Black & Veatch International Company
Project: Waterview Pump Station, Force Main, and Gravity Sewer Improvements

COMPENSATION

For services covered by this Contract, the Owner agrees to pay Engineer as follows:

A. For Phase 1000- Project Management and Administration and Phase 2000-Preliminary Engineering as defined in Attachment A of the contract, a lump sum amount of $215,000.

B. For Phase 4000-Supplemental Services as defined in Attachment A of the contract, Owner and Engineer will negotiate a written amendment to this contract prior to beginning work on Supplemental Services.


Skeet Club Rd
SR1820
Waterview Rd
Waterview Lift Station
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