

# CITY OF HIGH POINT

## AGENDA ITEM



<b>TITLE:</b> Ward WTP Filter Rehabilitation Evaluation – Professional Engineering Services HDR Engineering Inc.	
<b>FROM:</b> Robby Stone – Public Services Director Derrick Boone – Asst. Public Services Director	<b>MEETING DATE:</b> February 5, 2024
<b>PUBLIC HEARING:</b> N/A	<b>ADVERTISED DATE/BY:</b> Master Agreement - Task Order
<b>ATTACHMENTS:</b> Attachment A – Scope of Services	

**PURPOSE:** To approve a task order with HDR Engineering for the professional engineering services to upgrade filters 1-4 at the Ward Water Treatment Plant (WTP). The city has a master on-call agreement with HDR Engineering.

**BACKGROUND:** The City of High Point Public Services Department owns and operates the Frank L. Ward WTP, originally constructed in the early-1980s. The Ward Water Plant has both conventional filters, which were original to the plant construction, and a Greenleaf filter system, which was installed in the mid-1990s. The underdrain system for the conventional filters (1-4) was replaced in 2005 but has recently experienced challenges. The Public Services Department, with assistance from HDR, has evaluated filter underdrain options and selected a monolithic underdrain system. The purpose of this project is to develop design and construction documents so that the Public Services Department can obtain a contractor to complete the rehabilitation. In addition to replacing the underdrain system, the project covers the replacement of filter media and air scour piping, the replacement of valves and instrumentation, and coatings repair.

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

**RECOMENDATION/ACTION REQUESTED:** The Public Services Department recommends approval and asks for the Council to award this task order for professional engineering services to HDR Engineering Inc. in the amount of \$344,400 and authorize the appropriate City Official(s) to execute all necessary documents.





Ward WTP Filter Room





Ward WTP Pipe Gallery



# **Supplemental Agreement**

## **Exhibit A**

### **Filter Rehabilitation Evaluation**

#### **Introduction**

The City of High Point Public Services Department (City) owns and operates the Frank L. Ward Water Treatment Plant (WTP), originally constructed in the early-1980s. The WTP has both conventional filters, which were original to the plant construction, and a Greenleaf filter system, which was installed in the mid-1990s. The underdrain system for the conventional filters was replaced in 2005 but has recently experienced challenges. The City recently evaluated filter underdrain options and selected a monolithic underdrain system. The purpose of this project is to develop bid documents so that the City can obtain a contractor to complete the rehabilitation. In addition to replacing the underdrain system, the project covers the replacement of filter media and air scour piping, the replacement of valves and instrumentation, and coatings repair.

#### **Scope of Services**

The following Scope of Services (Scope) describes the services to be performed by HDR Engineering, Inc. of the Carolinas (Consultant). General assumptions include the following:

- All workshops will be held at the WTP unless otherwise noted. Meeting notes will be provided in an electronic format.
- Deliverables will be transmitted electronically and as hard copies (two full-sized sets and two half-sized sets).
- Comments from the City will be received in a compiled document. City review will take no longer than two weeks per document.
- City to pay for all permitting and agency review fees.
- City will provide contract agreement forms, general conditions, supplementary conditions, advertisement to bid, and instructions to bidders. Consultant will provide technical specifications including Division 01 General Requirements.
- No geotechnical services will be required.
- This Scope does not provide construction phase services; this may be provided in a separate proposal.

#### **Task 1: Project Initiation and Management**

Consultant will initiate this project by holding a Kickoff Meeting. This task also covers general functions required to maintain and track the project's schedule and budget.

#### **CONSULTANT SERVICES:**

- Project initiation, development of a schedule, and project documentation and filing.
- Coordination with the City on project status and key issues including monthly progress meetings when design workshops are not scheduled.
- General project accounting activities including invoicing.



- Overall project quality assurance and quality control (QA/QC).

**CITY RESPONSIBILITIES:**

- Attend progress meetings.

**ASSUMPTIONS:**

- Design and bid phase services are assumed to be eleven (11) months.
- Monthly progress meetings will be held during months when design workshops are not scheduled. Monthly progress meetings are assumed to last one hour and will be attended by Consultant's project manager and design manager. Up to six progress meetings are anticipated.
- Individual QC reviews are budgeted for under the design task.

**DELIVERABLES:**

- Project Kickoff Meeting Agenda and Notes.
- Notes from progress meetings.

**Task 2: Design and Permitting**

The purpose of this task is to progress and complete the design and permitting of the recommended upgrades identified in the Filter Rehabilitation Preliminary Engineering Report (PER). This includes a survey of the system; preparation of 60-percent, 90-percent, and 99-percent (Issued for Permitting) sets of drawings and specifications; coordination with permitting agencies and obtaining needed permitting before construction; and preparation of Issued for Bid drawings and specifications.

Design components are anticipated to include:

- Filter Rehabilitation – replacement of the filter media, underdrain system, air piping, and filter room floor drain.
- Pipe Gallery Rehabilitation – replacement of the valve systems (valve and actuator) and instrumentation associated with the filters, repair of pipe coatings, and replacement of chemical feed lines located within the interior of the pipe gallery.
- Replacement of BFV-4.
- Electrical and Instrumentation and control design associated with the filter and piping improvements identified above.

**CONSULTANT SERVICES:**

- Conduct a Terrestrial Light Image Detection and Ranging (LiDAR) survey of the filter basins and pipe gallery to develop a 3D model of the existing plant infrastructure. The 3D model will be used to develop design documents. The following structures will be included:
  - Filter basins.
  - Pipe gallery including the pump area.
- Prepare a technical memorandum identifying required permits and changes to the PER.



- Prepare 60-percent design documents and opinion of probable construction cost (OPCC). Conduct a 60-percent review workshop with the City and receive comments from the City.
- Prepare 90-percent design documents and OPCC. Conduct a 90-percent review workshop with the City and receive comments from the City.
- Coordinate with City and state permitting agencies to facilitate the approval of the project.
- Prepare 99-percent design documents for the North Carolina Department of Environmental Quality (NCDEQ) permitting review.
- Coordinate internally between disciplines in the preparation of design documents.
- Prepare and submit 100-percent design documents to include:
  - Digital copy of sealed design drawings and technical specifications.
  - Summary of work that includes a project description, contract duration, and agreed-upon amount for liquidated damages.
  - OPCC.
  - Bid Form in Word format.
  - List of contractors for the City to notify before advertising the project for bid.

#### **CITY RESPONSIBILITIES:**

- Review 60-percent, 90-percent, and 100-percent design drawings and technical specifications (as applicable) and provide comments.
- Participate in 60-percent and 90-percent review workshops.
- Coordinate and participate in meetings with planning and building departments.
- Prepare and provide front end (Division 0) contract documents, general and supplementary conditions, and select Division 1 specifications. Combine with Consultant's 100 percent technical specifications and sealed drawings for bidding.

#### **ASSUMPTIONS:**

- Design workshops are assumed to be three hours in length. Attendance for the workshops will include the project manager, design manager, and up to three additional attendees (e.g., electrical engineering, instrumentation engineer) as needed.
- No federal permits are assumed required for the work.
- Permitting reviews will consist of the following:
  - One City review consisting of all required agencies will be conducted at the 60-percent design phase.
  - One NCDEQ review will be conducted at 99-percent to gain permit approval for Authorization to Construct and Erosion and Sediment Control (if applicable).
- A City review of the 99-percent will not be conducted. Changes from the 99-percent design are intended to address comments from NCDEQ.
- The OPCC will be based on an AACE Class 3 estimate at 60% design and a Class 1 estimate at 90% and 100% design.

#### **DELIVERABLES:**

- Technical Memorandum covering permitting requirements and design changes or clarifications.





- 60-percent design: 60-percent design drawings, draft major equipment technical specifications, and OPCC.
- 90-percent design: design drawings, technical specifications, and OPCC.
- 99-percent design: permit-ready design drawings and technical specifications.
- 100-percent design: sealed bid drawings, compiled project specifications (Consultant's technical specifications and City's contract documents), and OPCC.
- Review Workshop Agenda and Notes.

### **Task 3: Bidding and Award**

The purpose of this task is to assist the City in bid phase services associated with the project.

#### **CONSULTANT SERVICES:**

- Attend a pre-bid conference and issue meeting notes.
- Assist the City in responding to questions received during bidding.
- Issue addenda as appropriate to clarify, correct, or change the bid documents.
- Attend and manage the bid opening.
- Assist the City in evaluating bids by preparing an engineering letter with bid tabulation sheets and a recommendation for contract award.
- Assist the City with assembling and awarding the construction contract.

#### **CITY RESPONSIBILITIES:**

- Advertise the project.
- Attend the pre-bid conference.
- Attend the bid opening.

#### **ASSUMPTIONS:**

- Pre-bid conference and bid opening will be attended by the project manager and design manager.
- Consultant will not provide dispute resolution services between the City and any bidders.
- Consultant will issue up to four addenda.
- Scope does not include project rebidding for any reason. Any Consultant efforts to support a rebid will require an amendment.

#### **DELIVERABLES:**

- Pre-Bid Conference Meeting Notes.
- Addenda.
- Bid Tabulation and Recommendation of Award Letter.
- Issued for Construction Contract Documents that conform to the contract documents with all addenda.

## **Schedule**

Consultant's schedule for completing the Scope from Notice to Proceed (NTP) is presented in Table 1:



**Table 1 Project Schedule**

Task	Task Time
Task 1 – Project Initiation and Management	9 months from NTP
Task 2 – Design and Permitting	60% Design – 12 weeks from NTP 90% Design – 8 weeks from 60% 99% Design – 4 weeks from 90% Design 100% Design – 2 weeks from NCDEQ Comments
Task 3 – Bidding and Award	2 months

## Compensation

Compensation to Consultant for the Scope of Services shall be for a lump sum value of \$344,400.00. A breakdown of fees by task and subtasks is presented in Table 2.

**Table 2 Project Fee**

Task	Labor (\$)	Expenses (\$)	Total (\$)
Subtotal: Task 1 – Project Initiation and Management	\$29,240.00	\$260.00	\$29,500.00
Subtotal: Task 2 – Design and Permitting	\$289,600.00	\$4000.00	\$293,600.00
Subtotal: Task 3 – Bidding and Award	\$20,500.00	\$800.00	\$21,300.00
Project Total	\$339,340.00	\$5,060.00	\$344,400.00