

## APPENDIX

### Exhibit A

TASK ORDER NUMBER: 8684-01

RFQ NUMBER: 2024-021

PROJECT NAME: Crooked Creek WRF UV Disinfection  
Construction Management Services

This Task Order pertains to an Agreement (Contract #8684) by and between UNION COUNTY (“OWNER”), and Hazen and Sawyer, P.C. (“ENGINEER”), dated January 1, 2024, (“the Agreement”). ENGINEER shall perform services on the project described below as provided herein and in the Agreement. This Task Order shall not be binding until it has been properly signed by both parties. Upon execution, this Task Order shall supplement the Agreement as it pertains to the project described below.

Int \_\_\_\_\_

#### PART 1.0 PROJECT DESCRIPTION:

ENGINEER completed detailed design, permitting, and bid phase services for a new UV disinfection facility at OWNER’s Crooked Creek Water Reclamation Facility (WRF). The design included the following major features:

- New UV Disinfection Facility
- Modifications to Existing Structures
- Demolition of Select Existing Structures
- Supporting site work with yard piping, electrical, controls, grading, etc.

The purpose of this task order is for ENGINEER to provide construction management services for the project.

#### PART 2.0 SCOPE OF SERVICES TO BE PERFORMED BY ENGINEER ON THE PROJECT:

Basic services to be provided by ENGINEER include the following task as delineated and expanded in greater detail below and per the Agreement:

- Task No. 1 – Office Construction Administration
- Task No. 2 – Field Construction Observation
- Task No. 3 – Facility Startup Services
- Task No. 4 – Post Construction Services
- Task No. 5 – Subconsultants

## TASK NO. 1 – OFFICE CONSTRUCTION ADMINISTRATION

Subtask 1.1 Preconstruction Conference – ENGINEER shall organize and facilitate a Preconstruction Conference and prepare and distribute meeting minutes to all attendees and key project team members.

Subtask 1.2 Review and Approve Submittals – ENGINEER will establish and administer a procedure for receiving and tracking all submittals. ENGINEER will provide technical review of all shop drawings, detailed construction drawings, erection drawings, and other submittals. ENGINEER will discuss / incorporate any OWNER review comments as appropriate. Presentations by ENGINEER and the Contractor's proposed vendor(s) to OWNER may be needed for complex submittals or proposed alternate equipment items. Copies of all submittal review shall be forwarded to OWNER and the Contractor in a timely manner. Construction documents will be kept and stored in ENGINEER'S Charlotte Office including maintaining a file / log of all Contractor submitted RFIs, change order requests, shop drawing submittals, and test results.

- Forty (40) submittals are estimated to be reviewed / approved by ENGINEER.

Subtask 1.3 RFIs, RFPS and Change Orders – ENGINEER will receive, review, and respond to General Contractor requests for information (RFIs) in a timely manner. Where required, ENGINEER will provide written responses to RFIs incorporating clarifications of the design intent and OWNER decisions.

ENGINEER will prepare requests for proposal (RFPs) from the Contractor for items of work outside of the defined scope of work in the plans and specifications. Such RFPs may be developed for additions to or deletions from the project based on unforeseen conditions and/or OWNER requests. ENGINEER will respond to any clarifications requested by the Contractor regarding the RFPs. ENGINEER will develop an estimate of the cost impacts of the RFP to the project and make recommendations to OWNER regarding the appropriateness of Contractor pricing on such proposals.

Should the Contractor submit claims related to the project and/or modifications become necessary to meet OWNER's needs for the project, ENGINEER will review the claims and / or proposed modifications and advise OWNER on the approach for resolution of the related issues. ENGINEER will review justification for all claims for modifications to the project cost and/or schedule and develop recommendations to OWNER for the fair and equitable resolution of such claims.

Ten (10) Contractor RFIs / RFPs are anticipated.

Subtask 1.4 Review Progress Schedules and Pay Estimates – ENGINEER will receive and review Contractor's pay requisitions for work completed. ENGINEER will verify the appropriateness of the pay requests, the state of completion of the work and the proper storage and maintenance of Contractor's stored materials, and then forward the Contractor's pay requisitions along with recommendation for payment to OWNER in a timely manner.

- Ten (10) progress schedules and partial payment estimates are estimated.

Subtask 1.5 Monthly Progress Meetings – ENGINEER will schedule, prepare for, attend, and conduct progress meetings at the project site. Progress meetings to include ENGINEER's, OWNER's and the Contractor's representative(s). These meetings shall be normally held on a once per month basis. Critical times of construction may require additional meetings. Minutes of the meetings will be prepared and distributed to all attendees and key project team members. ENGINEER will verify that the Contractor is responsive to both OWNER's and ENGINEER's concerns expressed during the course of the project, including maintaining the project schedule.

- One (1) progress meeting per month for a total of ten (10) meetings is anticipated.

Subtask 1.6 Periodic Site Visits – Provide periodic site visits by a registered Professional Engineer employed by ENGINEER to observe the work in progress and to make appropriate reports to OWNER regarding project completion, scheduling, and quality control. Observation reports will be provided to OWNER on a weekly basis.

- 4 hours per week for ten (10) months are anticipated.

Subtask 1.7 Project Management – ENGINEER will be responsible for overall project management during construction on behalf of OWNER, including services provided by the specialty subconsultants. ENGINEER will direct the construction observation activities, coordinate special inspections, and receive and review all daily construction observation progress reports. ENGINEER will maintain all documentation of project activities on behalf of OWNER.

- Two (2) hours per week for ten (10) months is anticipated.

## TASK NO. 2 – FIELD CONSTRUCTION OBSERVATION

Subtask 2.1 Field Construction Observer – Provide part-time construction observation services for substantial completion of the project.

- 8 hours per week for ten (10) months are anticipated.

The duties and responsibilities for part-time construction observation are further described and limited as follows:

- Conferences and Meetings: Attend meetings with the Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings.
- Liaison: Serve as ENGINEER's liaison with the Contractor, working principally through the Contractor's superintendent and assist in interpreting the intent of the Contract Documents and coordinating special inspections. Serve as OWNER's liaison with the Contractor when the Contractor's

operations affect OWNER's on-site operations. Assist in obtaining from OWNER additional details or information, when required for proper execution of the work.

- Interpretation of Contract Documents: Develop clarifications and interpretations of the Contract Documents when needed and transmit to the Contractor clarifications and interpretations.
- Shop Drawings and Samples: Record date of receipt of samples and approved shop drawings. Receive samples which are furnished at the site by the Contractor and notify ENGINEER of availability of samples for examination.
- Modifications: Consider and evaluate the Contractor's suggestions for modifications in drawings or specifications. Bring suggested modifications to ENGINEER's and OWNER's attention for consideration.
- Review of Work and Rejection of Defective Work: Conduct onsite observations of the Contractor's work in progress to determine if the work is generally proceeding in accordance with the Contract Documents. Report any part of the Contractor's work in progress that will not produce a completed project that conforms generally to the Contract Documents or will prejudice the integrity of the design concept of the completed project as a functioning whole as indicated in the Contract Documents. Report any work that has been damaged or does not meet the requirements of any inspection, test or approval required to be made that should be corrected or rejected or should be uncovered for observation or requires special testing, inspection or approval.
- Inspections, Special Inspections, Tests, and System Startups: Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate OWNER staff and confirm that the Contractor maintains adequate records thereof. Observe, record, and report appropriate details relative to the test procedures and systems start-ups. Accompany visiting inspectors representing agencies having jurisdiction over the project and record the results of these inspections. Accompany special inspections personnel and record the results of these inspections.
- Records: Maintain orderly files for correspondence, reports of job conferences, reproductions of original Contract Documents including all change orders, field orders, work change directives, addenda, additional drawings issued subsequent to the execution of the Contract, clarifications and interpretations of the Contract Documents, progress reports, shop drawing and sample submittals received from and delivered to the Contractor, and other project related documents. Maintain detailed records of locations of underground construction and deviations from the contract construction drawings for preparation of as-built record drawings. These

records shall be discussed with the Contractor at least on a monthly basis to ensure that all locations and deviations are recorded.

- Reports: Furnish periodic reports as required of progress of the work and of the Contractor's compliance with the progress schedule and schedule of shop drawing and sample submittals. Furnish copies of all inspection, test, and system start-up reports. Report immediately the occurrence of any site accidents, any hazardous environmental conditions, emergencies, or acts of God endangering the work, and property damaged by fire or other causes. Provide copies of reports to OWNER on a weekly basis.
- Certificates, Operation and Maintenance Manuals: During the course of the work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the specifications to be assembled and furnished by the Contractor are applicable to the items actually installed and in accordance with the Contract Documents, prior to payment for that part of the work.

Part-time construction observation will not include the following duties or services:

- Undertake any of the responsibilities of the Contractor, subcontractors, suppliers, or Contractor's superintendent.
- Advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of the Contractor's work unless such advice or directions are specifically required by the Contract Documents.
- Advise on, issue directions regarding, or assume control over safety precautions and programs in connection with the activities or operations of OWNER or the Contractor, unless such is specifically called for by the Contract Documents.
- Participate in specialized field or laboratory tests or inspections conducted off-site by others.
- Accept shop drawing or sample submittals from anyone other than the Contractor.
- Perform any special inspections as delineated on the Contract Drawings (other than check structural rebar (number, size and clearance) and observe placement of structural concrete).

Subtask 2.2 Special Inspection Services – In accordance with the North Carolina State Building Code Section 1704, ENGINEER will provide special inspection services as required. Work requiring special inspections (i.e., structural, architectural, geotechnical, and electrical as delineated on the Contract Drawings) shall be monitored and documented to demonstrate conformance.

ENGINEER shall provide qualified designated special inspectors utilizing in-house resources and/or specialty subconsultants.

However, ENGINEER will not, during such visits or as a result of such observations of Contractor's work in progress, supervise, direct, or have control over the Contractor's work nor will ENGINEER have authority over or responsibility for the means, methods, techniques, sequences, or procedures selected by Contractor, for safety precautions and programs incident to the Contractor's work in progress, for any failure of Contractor to comply with laws and regulations applicable to Contractor's performing and furnishing the work, unless such is specifically called for by the Contract Documents.

- Sixty (60) additional hours are anticipated.

### TASK NO. 3 – FACILITY STARTUP SERVICES

Subtask 3.1 Start-Up Assistance – Prior to final acceptance, ENGINEER will conduct operational testing of new equipment, troubleshooting of electrical and I&C issues that may arise, and enforce 30-day performance tests. ENGINEER will also provide optimization assistance related to bringing the rehabilitated and new facilities on-line. Optimization will include both on-site and teleconferencing assistance by ENGINEER's senior level engineers from various disciplines and specialties.

- Three (3) days of operational assistance are anticipated.

Subtask 3.2 Operations Training – ENGINEER will provide specific operator training as the construction project is being completed and facilities are being placed into service. ENGINEER will develop handouts and graphics to enhance the learning process and conduct hands-on training in the field for each class.

- One (1) session with two classrooms training classes each are anticipated.

Subtask 3.3 Finalize Punchlist and Close Out Project – ENGINEER's lead discipline project engineers and construction manager will assist the RPR in reviewing the completed work at the intermediate and final inspection milestones. ENGINEER will develop and manage a punchlist of items for the Contractor to address, assist in resolving punchlist items with the Contractor, and perform follow-up inspections to verify the satisfactory resolution of all punchlist items. Upon full and satisfactory completion of all required construction work, ENGINEER will issue a Certificate of Substantial Completion.

Subtask 3.4 Prepare Record Drawings – Using information provided by the Contractor and confirmed by on-site observations, ENGINEER will provide record drawings of the completed project. ENGINEER will confirm the validity of the record drawing information provided by the Contractor by using digital photographs and other techniques to provide records of construction details. Record drawings will be furnished on reproducible media and in electronic PDF format. CAD files and survey/GIS text files will be furnished in accordance with OWNER special standards.

Subtask 3.5 O&M Manual – Engineer will prepare an operations and maintenance (O&M) manual. The O&M manual will be submitted for review to OWNER prior to finalization. ENGINEER will incorporate all review comments, then finalize and deliver two (2) bound copies of the manual in 3-ring binders and one (1) electronic version in bookmarked PDF format to OWNER.

ENGINEER will also assemble and deliver to OWNER a complete set of approved shop drawings, operational instructions, maintenance publications, and manufacturer's documents prior to final acceptance including one (1) hard copy and one (1) electronic version in a bookmarked PDF format.

#### TASK NO. 4 – POST CONSTRUCTION SERVICES

Subtask 4.1 Warranty Period Services – Assist OWNER during the 1-year warranty period with notifying the Contractor of any defects or warranty repairs requiring attention. A final warranty inspection of the work will be performed approximately 11 months after the date of Substantial Completion. A punch list delineating the warranty repairs will be provided.

Subtask 4.2 Arc Flash Study – Conduct an arc flash study in accordance with the methods and requirements described in the National Fire Protection Association Standard 70E (NFPA 70E) – Standard for Electrical Safety in the Workplace. The results of this study will be submitted to the OWNER to be used by Plant Staff for compliance with the NFPA 70E Arc Flash Protection Requirements.

The arc flash study will include the following components:

- A field survey of the power distribution system will be conducted for the entire WWTP. Information and data to be collected includes:
  - Electrical utility service configuration;
  - Power distribution system configuration;
  - Ratings and settings for all protective devices; and,
  - Ratings and settings for all power distribution equipment
- The following electrical equipment will be included in the study:
  - Motor controllers and VFDs rated 480 VAC and above;
  - Lighting and power panelboards;
  - Low voltage switchboards;
  - Equipment control panels that contain 480 VAC motor controls
- Data collected will be entered into the arc flash evaluation software. SKM Power Tools will be utilized to perform the arc flash evaluation. The results of the study will yield the following information:

- Arc flash boundaries;
- Arc flash incident energy (measured in cal / cm<sup>2</sup>); and,
- Hazards as defined in NFPA 70E

The results of the arc flash analysis will be evaluated to identify the areas where the arc flash incident energy is excessively high (above 8 cal / cm<sup>2</sup>). The power distribution systems will be analyzed to determine if any system modifications (i.e., breaker setting modifications) can be made to reduce the arc flash incident energy for these high energy areas of the power distribution system.

An arc flash analysis report will be submitted to the OWNER. The report will contain the following:

- Single line diagrams illustrating arc flash information;
- Recommended modifications to reduce arc flash energy for the areas of the power distribution system where the arc flash incident energy is excessively high;
- Information from NFPA 70E pertaining to Hazard / Risk Categories and PPE requirement for each Hazard / Risk Category; and,
- Arc flash hazard and shock hazard labels for all equipment included in the arc flash study

One (1) 90 minute arc flash training seminar will be conducted for Plant Staff. The seminar will cover the basics of NFPA 70E arc flash protection requirements and arc flash protection PPE, as well as an explanation of the arc flash study results.

#### TASK NO. 5 – SUBCONSULTANTS AND EXPENSES

Subconsultant invoices and other Reimbursable Expenses will be invoiced in accordance with Section 6.1 of the Agreement.

Subtask 5.1 Materials Testing – Provide materials testing services during construction to monitor the performance of the work and determine compliance with requirements of the Contract Documents. Services shall include:

- Observation of earthwork and backfilling operations and embankment construction.
- Field density testing of in-place backfill.
- Determination of standard and modified proctor requirements for section of acceptable compaction densities and moisture contents.



- Field testing of concrete for consistency (i.e., slump), air content, and unit weight.
- Collection, curing, and testing of concrete compression test specimens.
- An average of two (2) days per month for twelve (12) months is anticipated.

Subtask 5.2 Expenses – Expenses will be invoiced in accordance with Section 6.1 of the Agreement:

- All vehicle mileage will be billed at rates allowed by the Federal Internal Revenue Service.

### PART 3.0 ADDITIONAL SERVICES, NOT PART OF BASIC SERVICES:

Services that would be in addition to the Basic Scope of Services described above include:

- ENGINEER's services beyond the original Construction Contract completion date, which are necessary and not due to fault of ENGINEER. It is expressly understood that overruns of engineering costs (office and field services) beyond OWNER approved time extensions may be reimbursed individually by the Contractor as liquidated damages, which are necessary and not due to fault of ENGINEER.
- Extended services related to default of Contractor and subsequent efforts associated with surety companies.
- ENGINEER will perform additional services as requested by OWNER. If the need for such services are identified, ENGINEER will prepare an amendment to this Task Order or prepare a new Task Order for OWNER's approval. Additional services will be performed only upon execution of an amendment to this task order or new task order.

### PART 4.0 OWNER'S RESPONSIBILITIES:

OWNER shall provide ENGINEER the following:

- Authorize ENGINEER to proceed, in writing.
- Give consideration to all sketches, drawings, maps, and other documents submitted by ENGINEER, and inform ENGINEER of any required decisions.
- Make available all information it has on existing utilities and information available for the facilities.
- Provide ENGINEER full access to the Project site.

### PART 5.0 PERIODS OF SERVICE:

Services as delineated previously herein shall be completed in accordance with the following tentative schedule:

<u>Milestone Description</u>	<u>Estimated Date</u>
Contractor NOA	September 1, 2024
Contractor NTP	October 31, 2024
Substantial Completion	July 31, 2025
Final Completion	August 31, 2025
Warranty / Closeout	August 31, 2026

**PART 6.0 PAYMENT FOR SERVICES:**

ENGINEER shall be compensated for the previously delineated Basic Scope of Services in accordance with the below indicated fee summary table and associated rate schedule by employee classification. A more detailed "Labor Effort" spreadsheet (Attachment No. 1) is appended to this Task Order and is incorporated herein by reference.

Task No.	Task Description	Lump Sum	Not-to-Exceed Cost Ceiling	Total
1	Office Construction Administration	\$0	\$140,990	\$140,990
2	Field Construction Observation	\$0	\$60,700	\$60,700
3	Facility Startup Services	\$0	\$42,820	\$42,820
4	Post Construction Services	\$0	\$31,480	\$31,480
5	Subconsultants and Expenses	\$0	\$35,700	\$35,700
<b>TOTAL PROJECT FEE</b>				<b>\$311,690</b>

- Notes:**
- (1) Individual service category cost ceiling amounts may be re-apportioned to other service categories by OWNER if the Not-to-Exceed Cost Ceiling amount is not exceeded. Not-to-Exceed Cost Ceiling amount will not be exceeded without an executed amendment to this Task Order.
  - (2) Subconsultants and reimbursable expenses will be invoiced in accordance with Section 6.1 of the Agreement..

Refer to Attachment No. 1 for hourly and fee breakdown.

- The following hourly billing rates were used for determining the fee amount:

<u>Classification</u>	<u>Hourly Billing Rate</u>
Vice President	\$300
Associate Vice President	\$290
Senior Associate	\$270
Associate	\$230
Senior Principal Engineer	\$195
Principal Engineer	\$175
Assistant Engineer II	\$155
Assistant Engineer I	\$135
Senior Principal Designer	\$185
Principal Designer	\$165
Designer	\$140
Construction Observer	\$140
Administrative	\$90

This Task Order is executed this date of \_\_\_\_\_.

UNION COUNTY,  
NORTH CAROLINA

HAZEN AND SAWYER, P.C.

By: \_\_\_\_\_

By: \_\_\_\_\_

Name: Brian Matthews

Name: Michael D. Parker, P.E.

Title: County Manager

Title: Associate Vice President

Address: 500 North Main Street  
Suite 600  
Monroe, NC 28112

Address: 9101 Southern Pine Blvd  
Suite 250  
Charlotte, NC 28273

Approved as to Legal Form: BTI

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act.

\_\_\_\_\_  
Deputy Finance Officer

Attachment 1  
Union County Water  
Crooked Creek WRF UV Disinfection  
Construction Management Services  
Projected Manhours and Associated Fee

Task No.	Description	VP (Hrs) \$300	Assoc VP (Hrs) \$290	Sr Assoc (Hrs) \$270	Associate (Hrs) \$230	Sr Princ Eng (Hrs) \$195	Princ Eng (Hrs) \$175	Eng / AE II (Hrs) \$155	Sr Princ Des (Hrs) \$185	Princ Des (Hrs) \$165	Const Obs (Hrs) \$140	Total Labor Hrs (Hrs)	Total Labor Fee (\$)
1	Office Construction Administration												
	Preconstruction Conference		4			8		4				16	\$3,340
	Review and Approve Submittals				40	80	80	40				240	\$45,000
	RFIs, RFPs and Change Orders		20		10	20	10					60	\$13,750
	Review Progress Schedules and Pay Estimates		10			20		10				40	\$8,350
	Monthly Progress Meetings		10			40		40				90	\$16,900
	Periodic Site Visits			20		130	20					170	\$34,250
	Project Management		40			40						80	\$19,400
	Subtotal	0	84	20	50	338	110	94	0	0	0	696	\$140,990
2	Field Construction Observation												
	Field Construction Observer										350	350	\$49,000
	Special Inspections Services					60						60	\$11,700
	Subtotal	0	0	0	0	60	0	0	0	0	350	410	\$60,700
3	Facility Startup Services												
	Startup Assistance		8	24								32	\$8,800
	Operations Training		8			8		8				24	\$5,120
	Punchlist and Project Close Out		4	4		16		24				48	\$9,080
	Record Drawings		2			12			8	24		46	\$8,360
	O&M Manual		2			24		40				66	\$11,460
	Subtotal	0	24	28	0	60	0	72	8	24	0	216	\$42,820
4	Post Construction Services												
	Warranty Period Services		8			32						40	\$8,560
	Arc Flash Study			16				120				136	\$22,920
	Subtotal	0	8	16	0	32	0	120	0	0	0	176	\$31,480
5	Subconsultants and Expenses												
	Materials Testing Allowance (2 days per month for 6 months)												\$24,000
	Expenses (Mileage, Meals, Reproduction)												\$10,000
	Hazen Markup												\$1,700
	Subtotal	0	0	0	0	0	0	0	0	0	0	0	\$35,700
	GRAND TOTAL	0	116	64	50	490	110	286	8	24	350	1,498	\$311,690