

TASK ORDER

NUMBER 2025-1

This Task Order pertains to an Agreement by and between LANCASTER WATER AND SEWER DISTRICT, SOUTH CAROLINA and UNION COUNTY, NORTH CAROLINA, ("OWNER"), and WESTON & SAMPSON ENGINEERS, INC. ("ENGINEER"), dated ____, 2025, ("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 ENGINEER and OWNER. Upon execution, this Task Order shall supplement the Agreement as it pertains to the project described below.

TASK ORDER NUMBER: 2025-1

PROJECT NAME: RFQ: Professional Services for CRWTP Expansion

PART 1.0 PROJECT DESCRIPTION:

The CRWTP is a 40-MGD water treatment facility that provides drinking water to customers of Union County and Lancaster County Water and Sewer District. Due to continually expanding customer base, the parties plan to expand the existing water treatment capacity from 40 MGD to 56 MGD. Alternatives and cost considerations should also be evaluated for “phasing-in” this upgrade or upgrading to a lesser capacity than 56 MGD.

Currently, the facility is an Ultra-Pulsator treatment facility with Greenleaf filtration. Chlorine dioxide is added as a pre-oxidant and chloramines as a final disinfectant. The overall treatment capacity also includes four (4) each 2 MGD pressurized ultrafiltration membranes constructed in a facility with space to expand by +/- 8 MGD of additional membrane treatment. There are two (2) raw water reservoirs on-site in a series arrangement. The original reservoir (approximately 120 MG) serves as a pre-settling basin to the most recent reservoir (approximately 1 BG). Residuals are currently managed with settling and thickening basins and on-site spray fields.

This project will evaluate the alternatives for facility expansion considering the footprint required for this and future expansions. This expansion is anticipated to sustain each Party’s water demands in a fiscally responsible manner for their customers. Due to the increase in demand generated by the expanding customer base, this upgrade must also allow for future expansions of the facility.

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

2.1 Task 1 – Project Kickoff and Management

2.1.1 Develop Request for Information (RFI) to OWNER to request available documentation required to complete the engineering analysis.

2.1.2 Develop draft project execution plan (PEP) for Phase 1 of the project to be discussed during site kickoff meeting. Phase 1 PEP will include a prioritized list of process improvement goals to be further evaluated, a schedule of proposed interactive workshops with OWNER and relevant stakeholders, and an overall delivery schedule of the Phase 1 project deliverables with milestones.

2.1.3 Conduct an on-site project kickoff meeting with OWNER, key project stakeholders, and the technical project team. Lead an interactive planning session with key stakeholders to identify and prioritize desired facility upgrades and process improvements. Participate in a high-level site walkthrough of the existing facility.

2.1.4 Finalize Phase 1 PEP based off feedback from the kickoff meeting.

2.1.5 Conduct monthly coordination meetings with OWNER to review design details and discuss status of project.

Task 1 – Deliverables:

- In-person site visit and kick-off meeting
- Draft and Final Project Execution Plan (PEP)
- Treatment Plant Process Improvement prioritized list of goals
- Agendas, meeting minutes, and other materials (logs, schedules, etc.) as required to facilitate and document project progress

2.2 Task 2 – Additional Water Quality (WQ) Monitoring and Sampling Plan

2.2.1 Obtain, tabulate, and review up to 3 years of available analytical data to understand the water quality across the existing treatment trains at the plant. Locations may include, but are not limited to, raw water, effluent of each unit process, plant finished water, and residuals for each unit process.

2.2.2 Prepare a sampling plan to obtain additional water quality data needed at the plant including PFAS, parameters that may impact PFAS treatment/removal (including but not limited to NOM/TOC, Algae, Metals, Organics, TSS, etc.), and any other parameters presented as a data-gap during the review of the existing analytical data. The sampling plan will include analyzing the

selected parameters in various locations in the plant including, but not limited to the raw water, finished water, and at various points across the existing treatment processes.

Review recommended sampling plan with OWNER and solicit and incorporate OWNER feedback. Provided suggested budget and pricing for the recommended sampling plan to OWNER. OWNER to fund and execute sampling plan.

Tabulate and review additional water quality data obtained from the additional sampling plan. Assume up to five (5) sampling events.

Task 2 – Deliverables:

- Prepare list of data request
- Prepare a technical memorandum outlining the recommended sampling plan for additional data requests – if warranted
- Prepare a technical memorandum documenting the results of the additional sampling effort.

2.2 Task 3 – Existing Conditions Evaluation

2.3.1 Conduct a site visit to assess the existing conditions of the facility. This site visit and requisite work is anticipated to last up to 5 days and will include the following work:

2.3.1.1 Review operations of existing UF membrane units and work with operators to understand the current limitations and challenges with the current process.

2.3.1.2 Review the current method(s) for controlling algae concentrations in the existing reservoirs and throughout the plant and work with operators to understand the current limitations and challenges with the current process.

2.3.1.3 Review existing residuals handling operations and work with operators to understand the current limitations and challenges with the current process (if applicable).

2.3.1.4 Observe and evaluate existing conditions of all major equipment, buildings, utilities, and supporting site/infrastructure previously outlined in the 2018 facility site assessment list and update existing conditions in the list accordingly.

2.3.1.5 Gather information needed to update as-built drawings.

2.3.2 Update existing drawings to reflect as-built conditions.

2.3.3 Perform a site visit to identify resource areas including wetlands prior to field survey. Conduct a site survey of the property in the vicinity of the proposed water plant.

Task 3 – Deliverables:

- Site visits to interview operators and inventory assets
- Updated asset inventory lists
- Updated facility record drawings
- Environmental report summarizing resource areas of concern
- Site survey

2.4 Task 4 – PFAS Evaluation and Planning

2.4.1 Build upon the regulatory review performed as part of the 2018 Facility Master Plan and the March 2023 Union County PFAS Conceptual Treatment Alternatives Analysis. Provide a summary of the current and future regulatory status for PFAS not covered in the previous review. Review existing and pending regulations and amendments issued by the Environmental Protection Agency (EPA), South Carolina Department of Environmental Services (SC DES), and North Carolina Department of Environmental Quality (NC DEQ).

2.4.2 Lead interactive workshop – “PFAS Development of Solutions”

- Determine PFAS compounds of interest (just EPA/SC and NC regulated components or any unregulated PFAS of interest)?
- Identify OWNER’s PFAS mitigation strategy (i.e. under MCL, meet MCLG, ND for all PFAS).
- Identify OWNER’s treatment preferences (i.e. operational longevity, capital costs vs operational costs, etc.)

2.4.3 PFAS Pilot Protocol & Pilot – following the PFAS Planning workshop prepare summarize discussions and findings and prepare outline for protocol for piloting.

Task 4 – Deliverables:

- PFAS Planning Workshop
- Provide update to the March 2023 Union County PFAS Conceptual Treatment Alternatives Analysis and the 2018 Facility Master Plan PFAS treatment alternatives chapter of PER based on the workshop findings.
- PFAS Pilot Protocol – if warranted

2.5 Task 5 – Facility Planning

2.5.1 Perform useful life analysis of existing equipment and infrastructure using the methodology outlined in the 2018 Facility Master Plan.

2.5.2 Incorporate the findings from the existing conditions evaluation into the PEP list developed during the kick-off meeting. Work with OWNER to refine the list of upgrades and improvements to be further evaluated during Phase 1.

2.5.3 Lead Interactive Workshop – Facility Planning

2.5.3.1 20-year planning period

2.5.3.2 Space programming for additional administration space needs such as offices, break-room, conference room, laboratory, maintenance and equipment storage workshop space.

2.5.3.3 Review existing plant building for upgrades including parking lot paving, windows and doors to bring up to current safety code as well as risk and resiliency plan suggestions.

2.5.3.4 Strategy for membranes and existing building space including review of membrane alternatives

2.5.3.5 Process Improvements for additional plant capacity

2.5.3.6 Review of raw water quality and taste and odor impacts as well as improvements

2.5.3.7 Electrical service review

2.5.3.8 Distribution pumping and storage and plant hydraulics

2.5.3.9 Review old spare pump station for use as redundant station. Provide recommendations for improvement

2.5.3.10 Review generator and provide recommendations for improvement

Task 5 – Deliverables:

- Updated Treatment Plant Process Improvement prioritized list of goals
- Facility Master Planning Workshop
- Updated PEP
- Facility Master Plan Chapter of PER

2.6 Task 6 – Algae Management and Reservoir Modeling

2.6.1 Review existing reservoir design of the reservoir system to aid in further understanding how water moves through the reservoir. Identify potential areas of short-circuiting or areas where mixing needs to be improved.

2.6.2 Conduct interactive workshop with OWNER to determine the preferred strategies for managing algae concentrations in the existing reservoir and at the plant. Discuss the potential options including but not limited to, increasing the algae monitoring frequency to improve response time, relocating the raw water intake, improving reservoir mixing, and/or adding or modifying source water treatment. Collectively with OWNER, determine up to three options to be further analyzed.

2.6.3 Evaluate up to three (3) options for algae management based on input provided by the OWNER during the interactive workshop. Perform preliminary sizing calculations and prepare a high-level conceptual layout for each option.

Task 6 – Deliverables:

- Reservoir workshop
- Reservoir improvement alternatives Chapter of PER

2.7 Task 7 – Treatment Alternatives Analysis

2.7.1 Review the pros and cons of utilizing the existing UF membrane units in the future. Provide suggestions for improving performance of UF membranes if appropriate. Evaluate utilizing ceramic membranes and compare benefits and drawbacks compared with existing UF membranes. Evaluate decommissioning the UF membranes and replacing with a different technology.

2.7.2 Evaluate filtration alternatives and/or options for retrofitting the Greenleaf filters with up to 3 different media configurations.

2.7.3 Evaluate up to three (3) options for PFAS treatment based on input provided by the OWNER during the interactive workshop. Perform preliminary sizing calculations and prepare a high-level conceptual layout for each option.

2.7.4 Evaluate existing residuals handling and spray application facilities and determine if additional capacity is required. Provide up to two (2) alternatives for residuals handling for the additional plant capacity with the pros and cons of both.

2.7.5 For Tasks 2.7.1 through 2.7.4, develop a high-level alternatives matrix in Excel outlining the benefits and challenges associated with each option and ranking each option based on treatment effectiveness, estimated capital cost, estimated ongoing maintenance cost, ease of operation, and anticipated construction duration.

2.7.6 Prepare and present alternatives to OWNER if appropriate to narrow down choices that would be further evaluated and costs prepared. The presentation will include a summary of each option, preliminary sizing and layouts (as applicable), and a review of the Excel alternatives

matrix. Following the presentation, OWNER will work to finalize the options to be further developed in the preliminary engineering report.

Task 7 – Deliverables:

- Prepare Alternatives Analysis for plant improvements

2.8 Task 8 – Phase 1 Preliminary Engineering and Report

2.8.1 Review the feasibility of increasing the existing plant capacity from 40 MGD to approximately 56 MGD. Determine if a phased approach is needed to expand the plant capacity by 16 MGD. Review existing plant hydraulics to identify bottlenecks in the existing plant. Update the hydraulic profile to reflect existing conditions in the plant.

2.8.2 Perform preliminary sizing calculations to determine what additional pumping capacity is needed in the raw water and finished water systems, including membranes if appropriate.

2.8.3 Evaluate the capacity of the existing rapid mix tanks to determine if new rapid mix tank(s) are needed or if the existing rapid mix tanks can be modified to accommodate the additional 16 MGD capacity. Determine if chemical dosing strategy upstream of the rapid mix tank needs to be modified based on proposed PFAS treatment technology(s) or algae management strategy(s) selected.

2.8.4 Review feasibility of expanding the UltraPulsator and Greenleaf filter capacity by adding additional unit(s). Perform preliminary unit sizing and review any potential impacts to future performance based on the PFAS treatment technology(s) or algae management strategy(s) selected.

2.8.5 Evaluate the updated powder activated carbon (PAC) usage based on the treatment technology(s) selected for PFAS removal and algae management, if applicable. Prepare preliminary sizing calculations, layout, and location for upgraded PAC storage and dosing equipment.

2.8.6 Perform preliminary sizing calculations for the chemical feed systems needed for the expanded 16 MGD capacity. Determine if any other chemical feed system upgrades are needed for the existing 40 MGD plant.

2.8.7 Determine the additional Clearwell storage capacity required for the expanded facility and provide recommendations of where to install the new storage vessels.

2.8.8 Provide up to two (2) options of overall site layouts for the proposed facility expansion. Include phasing recommendations for each layout, if applicable. Provide strategies for future expansion of the plant beyond the current expansion to 56 MGD if appropriate.

2.8.9 Prepare engineering estimates of construction and capital costs associated with each layout option, including each phase if applicable.

2.8.10 Prepare a permitting outline for the proposed plant expansion. Identify the list of required permits from the South Carolina Department of Environmental Services (SC DES), North Carolina Department of Environmental Quality (NC DEQ), US Army Corps of Engineers, and other applicable agencies. Include an estimate of permitting costs and approximate schedule for obtaining the permits for the plant expansion.

2.8.11 Provide a regulatory assessment of existing treatment processes and confirm that existing and proposed treatment processes will meet existing regulations. Identify if any existing or proposed treatment process pose a risk to pending regulations or amendments to existing regulations.

2.8.12 Provide a summary of any future piloting and/or sampling recommendations to aid in the final design of the plant expansion.

2.8.13 Prepare a report summarizing the findings from the Phase 1 engineering effort. Include a construction feasibility plan that allows the existing facilities at the CRWTP to remain in full operation throughout the entire construction duration. Provide a construction timeline for the plant expansion.

2.8.14 Meet with OWNER to review Phase 1 Preliminary Engineering report.

2.8.15 Revise the Phase 1 Preliminary Engineering report up to one (1) time based on OWNER's comments.

Task 8 – Deliverables:

- DRAFT and Final Preliminary Engineering Report

PART 3.0 ADDITIONAL SERVICES, NOT PART OF BASIC SERVICES:

PART 4.0 OWNER'S RESPONSIBILITIES:

PART 5.0 PERIODS OF SERVICE:

Eight (8) Months from executed Agreement/Task Order.

PART 6.0 PAYMENTS TO ENGINEER:

The ENGINEER will be compensated on a per diem (hourly rate) not to exceed \$382,523.00 as outlined below.

Task 1 Project Kickoff and Management	\$64,742.00
Task 2 Additional Water Quality (WQ) Monitoring and Sampling Plan	\$22,942.00
Task 3 Existing Conditions Evaluation	\$92,226.00
Task 4 PFAS Evaluation and Planning	\$11,960.00
Task 5 Facility Planning	\$32,300.00
Task 6 Algae Management and Reservoir Monitoring	\$36,481.00
Task 7 Treatment Alternatives Analysis	\$40,028.00
Task 8 Phase 1 Preliminary Engineering Report	\$81,844.00

All hourly rate work will be charged based upon the personnel classifications performing the work and corresponding hourly rate set forth in Attachment A, which is attached and incorporated herein by reference.

An estimated breakdown of the hourly effort is outlined in Attachment B, which is attached and incorporated herein by reference.

PART 7.0 OTHER:

This Task Order is executed this ____ day of _____, 2025.

ENGINEER

By: _____

Name: Leah Stanton

Title: Vice President

Address: 911 Norman Alley
Conway, SC 29626

UNION COUNTY,
NORTH CAROLINA

LANCASTER COUNTY WATER AND SEWER
DISTRICT, SOUTH CAROLINA

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Address: 500 N. Main St.
Monroe, NC 28112

Address: 1400 Pageland Highway
Lancaster, SC 29720

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 A
Hourly Rates

EMPLOYEE TITLE	BILLING RATE
Principal In Charge - VP	\$350.00
Senior Technical Specialist	\$231.00
Senior Project Administrator	\$188.00
Project Manager 1	\$169.00
Front Desk Coordinator	\$95.00
Senior Resident Representative	\$152.00
Senior Designer	\$196.00
Resident Representative	\$108.00
Senior Structural Engineer	\$320.00
Project Manager 1	\$187.00
Senior Resident Representative	\$150.00
Senior Civil Designer	\$141.00
Senior Project Manager	\$257.00
Technical Project Coordinator	\$128.00
Principal Engineer	\$328.00
Senior Project Engineer	\$169.00
Senior Technical Leader	\$290.00
Senior Process Engineer	\$190.00
Engineer 3	\$140.00



Attachment B

Level of Effort and Cost Table

Project Name: LCWSD/Union County-Catawba River WTP Expansion Project

	Labor									
	Brown, Timothy Senior Technical Specialist		Carter, Dickie Senior Technical Specialist		Carter, Vicki Senior Project Admininstrator		Comeau, John Senior Team Leader		Dixon, William Senior Structural Engineer	
Project Structure	Hours	Bill	Hours	Bill	Hours	Bill	Hours	Bill	Hours	Bill
A - PER	36.00	8,316			12.00	2,256				
B - PHASE B - ADDTL WQ MONITORING & SAMPLING	16.00	3,696			4.00	752				
C - PHASE C - EXISTING CONDITIONS EVAL	60.00	13,860	40.00	9,240	16.00	3,008			16.00	5,120
D - PHASE D - PFAS EVAL & PLANNING	8.00	1,848			8.00	1,504				
E - PHASE E - FACILITY PLANNING	20.00	4,620			8.00	1,504	16.00	4,640		
F - PHASE F - ALGAE MANAGEMENT & RESERVOIR	15.00	3,465			2.00	376				
G - PHASE G - TREATMENT ALTERNATIVES	20.00	4,620			8.00	1,504				
H - PHASE H - PER	40.00	9,240	16.00	3,696	24.00	4,512	8.00	2,320	8.00	2,560
Total	215.00	49,665	56.00	12,936	82.00	15,416	24.00	6,960	24.00	7,680



Attachment B

Level of Effort and Cost Table

Project Name: LCWSD/Union County-Catawba River WTP Expansion Project

Labor											
Kearnan, Aaron Engineer III		McGougan, Jessica Senior Project Manager		McGougan, Joseph Principal Engineer		Reid, Andrew Senior Technical Leader		Stanton, Leah Chief Operating Officer		Terravecchia, Gianna Senior Process Engineer	
Hours	Bill	Hours	Bill	Hours	Bill	Hours	Bill	Hours	Bill	Hours	Bill
		26.00	6,682	16.00	5,248	52.00	15,080	10.00	3,500	64.00	12,160
40.00	5,600			8.00	2,624	8.00	2,320	1.00	350	40.00	7,600
				16.00	5,248	20.00	5,800	4.00	1,400	80.00	15,200
		8.00	2,056	4.00	1,312	8.00	2,320	4.00	1,400	8.00	1,520
20.00	2,800			12.00	3,936	20.00	5,800	4.00	1,400	40.00	7,600
40.00	5,600			10.00	3,280	16.00	4,640	1.00	350	8.00	1,520
40.00	5,600			18.00	5,904	20.00	5,800	4.00	1,400	80.00	15,200
60.00	8,400	24.00	6,168	16.00	5,248	40.00	11,600	4.00	1,400	80.00	15,200
200.00	28,000	58.00	14,906	100.00	32,800	184.00	53,360	32.00	11,200	400.00	76,000



Attachment B

Level of Effort and Cost Table

Project Name: LCWSD/Union County-Catawba River WTP Expansion Project

Labor		Reimb. Expenses	Reimb. Consultants	Total
Total		Total	Total	
Hours	Bill	Bill	Bill	Bill
216.00	53,242	11,500		64,742
117.00	22,942			22,942
252.00	58,876		33,350	92,226
48.00	11,960			11,960
140.00	32,300			32,300
92.00	19,231		17,250	36,481
190.00	40,028			40,028
320.00	70,344		11,500	81,844
1,375.00	308,923	11,500	62,100	382,523