TASK ORDER NO. 8686-03

This Task Order pertains to an Agreement by and between Union County, NC ("OWNER") and CDM Smith Inc. ("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. Unless otherwise defined herein, all capitalized terms shall have the meaning set forth in the Agreement.

MPA: **8686**

TASK ORDER NUMBER: **8686-03**

Related RFQ: **2024-021**

PROJECT NAME: **Pressure Zone 935 Elevated Storage Tank: Preliminary Engineering Report (PER)**

PART 1.0 PROJECT DESCRIPTION

A new elevated storage tank (EST) is needed for the 935 Pressure Zone (935PZ) to address current storage deficiencies and accommodate 2040 water demands. A storage demand analysis completed by OWNER as part of the most recent Water and Wastewater Master Plan identified that an additional 0.5 million gallons (MG) is required to meet 2040 demands. ENGINEER will perform hydraulic model evaluations to confirm the storage tank volume, evaluate sites for a new EST, evaluate replacement of the existing EST with a 1 MG EST versus building a new 0.5 MG EST to operate in parallel with the existing 0.5 MG EST, and deliver a Preliminary Engineering Report (PER) that summarizes the findings and design recommendations.

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

Basic Services to be provided by ENGINEER under this Agreement include the following:

- Task 100 – Project Management and Quality Control
- Task 200 – Hydraulic Model Evaluation
- Task 300 – Site Selection Alternatives Evaluation
- Task 400 – Preliminary Engineering

The detailed scope of services included under this Task Order (Tasks 100 through 400) follows:

TASK 100 PROJECT MANAGEMENT AND QUALITY CONTROL

101 General Project Management

The Project management task includes those activities involved with the detailed planning and subsequent monitoring and control of the Project including ENGINEER's normal in-house staff management and job tracking procedures.

102 Project Schedule

A schedule will be developed for the major activities required for execution of the Project. The schedule will be reviewed with OWNER and finalized, with copies sent to OWNER. The schedule will be developed using Primavera P6 software, which will also be used during the duration of the Project.

103 Project Initiation

A Project kickoff meeting will be held with OWNER to discuss Project schedule, administrative procedures, respective responsibilities, communications, OWNER contacts, OWNER expectations, progress reporting, data collection, and other Project matters as appropriate. Key stakeholders of OWNER and ENGINEER's Project team are expected to attend. Additional Project meetings are identified in the tasks which follow.

104 Quality Management

ENGINEER will undertake quality control activities in accordance with ENGINEER's Quality Management System (QMS) that includes monthly Project status reporting, communication plans, and independent specialist reviews. ENGINEER will provide monthly invoices with progress reports.

TASK 200 HYDRAULIC MODEL EVALUATION

201 Initial Hydraulic Modeling

ENGINEER's subconsultant will use the existing, calibrated model of OWNER's water system to conduct simulations for the proposed 935PZ EST. The water demand projections provided by OWNER will be input to the model and hydraulic model simulations performed to determine the following:

- Confirmation of the EST volume and any recommended areas within the 935PZ most desirable for tank location. Options for the new EST in the 935PZ will include modeling replacement of the existing 0.5 MG (New Stallings) EST with a new larger EST or a separate new EST that will operate in parallel with the existing 0.5 MG New Stallings EST.

- Recommended tank overflow elevation

- Extended Period Simulation under 2040 average day operation including determination of water age in proposed tank

- Extended Period Simulation under 2040 maximum day operation including steady-state fire flow availability with new EST in-place

- Determine the need (if any), size, and general alignment (for modeling purposes) of new waterlines to avoid existing waterline dead-ends created to service the EST.

202 Technical Memorandum

ENGINEER's subconsultant will develop a North Carolina Professional Engineer signed and sealed technical memorandum (TM) to summarize the results of the hydraulic evaluation, which will be advanced to the preliminary design stage. Once OWNER review comments are received, ENGINEER and subconsultant will update the TM and include as an attachment in the Preliminary Engineering Report, included in Task 400.

203 Selected Site Model Confirmation

Once the new tank site and storage volume are agreed upon by OWNER, and the conceptual site plan is developed, ENGINEER's subconsultant will use the hydraulic model to re-confirm the EST overflow elevation and develop an Extended Period Storage Plot. The results from this analysis will be incorporated into the Task 402 preliminary design evaluation.

TASK 300 SITE SELECTION ALTERNATIVES EVALUATION

301 EST Site Evaluations

A desktop analysis will be performed using OWNER GIS data along with Google Earth to identify up to three sites for a new EST for comparison and evaluation. At least one of the three sites will have no water line requirements beyond those needed for the tank site. The following criteria will be considered when selecting sites:

- Ground elevation/height of proposed tank
- Parcel size, topography, and property owner
- Waterline requirements (if any)
- Zoning
- Proximity to residential developments
- Presence of streams and wetlands
- Presence of other utilities
- Potential constructability concerns
- Permitting requirements
- Opinion of Probable Construction Cost

Once the three sites are selected and agreed to by the OWNER, a matrix will be used to rank each of the three sites with respect to the above criteria. A site visit will also occur to each site to assist in the selection of a final site.

302 Technical Memorandum

ENGINEER will develop a technical memorandum (TM) to summarize the results of the site evaluations including the recommended site location. Once OWNER review comments are received, ENGINEER will update the TM and include as an attachment in the Preliminary Engineering Report, included in Task 400.

TASK 400 PRELIMINARY ENGINEERING

ENGINEER will perform a preliminary engineering evaluation to collect and review existing information, define basic design criteria, develop preliminary design schematics, and present in a workshop with OWNER. Related subtasks are described below.

401 Data Collection, Review, and Coordination

OWNER shall provide available GIS data and as-builts/record drawings for water and sewer infrastructure in the Project Area. ENGINEER shall review the data and follow-up with OWNER if additional data needs are desired.

402 Preliminary Design Evaluation

ENGINEER will perform a preliminary design for providing an additional 0.5 MG of storage (volume to be confirmed under Task 200) in the 935PZ. Two alternatives will be evaluated: 1) the addition of a new 0.5 MG EST at the site selected under Task 300, and 2) a new 1 MG EST on the same site as the existing 0.5 MG tank. The preliminary design will include development of the following for each alternative:

- Evaluation of up to three EST design options (i.e., composite, fluted column/hydropillar, and pedesphere) as selected by OWNER. Comparative capital cost and a 50-year life cycle cost for each option will be prepared.
- Tank dimensions, internal piping, and valve configuration.
- Development of one generalized preliminary site plan appropriate for any of the three EST options. GIS files will be used as the base file for the site plan, with proposed structures, waterlines, and meter/valve vaults
- Waterline improvements required to tie-in the new elevated storage tank to the 935PZ distribution system.

A conceptual Opinion of Probable Construction Cost (OPCC) will be prepared for the two options. In addition, an alternatives evaluation that compares cost and non-cost factors for both options will be performed and presented in the Task 403 Workshop in order to select an option.

403 Workshop

ENGINEER will facilitate a workshop with OWNER to review the results of the preliminary engineering design and confirm agreement of the proposed infrastructure improvements to be included in the PER. ENGINEER will develop a PowerPoint presentation to document the results. The meeting is assumed to be in-person. The results of the meeting will be documented in minutes and distributed to attendees.

404 Preliminary Engineering Report

ENGINEER will prepare a Preliminary Engineering Report (PER) for the improvements identified as part of Task 200 at the site selected in Task 300 with the final selected EST volume. The PER will consist of the following components:

- Design criteria, equipment sizing and selection, functional features and preferred equipment manufacturers, waterlines, and elevated storage tank, including electrical, instrumentation, process mechanical, and structural considerations.

- Preliminary drawings including a site plan and preliminary plan and section figures of the selected EST design.

- Recommended construction schedule.

- Preliminary OPCC including capital cost of construction and engineering services (design, permitting, bidding, and construction administration).

- Local, state, and federal permitting requirements.

ENGINEER shall provide OWNER with an electronic copy of the draft PER. After OWNER reviews the draft PER, OWNER and ENGINEER shall meet in-person to make final decisions on the recommendations and design criteria. The PER will be modified based on the review comments and a final version issued.

PART 3.0 ASSUMPTIONS

- The existing hydraulic model is accurately calibrated.

- Updates to the water demand projections are not included under this Scope of Work.

- Geotechnical investigations are not included in this scope, OWNER should consider completing geotechnical investigations of the selected site prior to purchase either via amendment to this Task order or other existing Contracts with Others. The PER will assume a shallow foundation for the proposed EST.

- Single line diagrams and P&IDs will not be provided. Electrical and instrumentation considerations will include a summary of the necessary components.

- A surge evaluation is not included in this Scope of Work but may be considered as part of the design phase.

- Detailed design, permitting, bidding, and construction administration and observation services will be included in a future Task Order.

PART4.0 ADDITIONAL SERVICES

ENGINEER will perform additional services as requested by OWNER. If the need for such services is 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 upon execution of the Task Order amendment or new Task Order. Payment for any Additional Services will be paid only upon execution of an amendment to this Task Order.

PART 5.0 OWNER'S RESPONSIBILITIES

The responsibilities of OWNER as described in this Task Order follow:

- Provide ENGINEER with data, in possession of OWNER, as outlined in Tasks 100 and 400 that is reasonably requested in a timely manner.

- Provide reasonable access to and make all provisions for ENGINEER to enter upon OWNER property and assist with access to private property as required for ENGINEER to perform services under this Task Order.

- Review all documents and submittals provided by ENGINEER in their entirety and endeavor to provide feedback within two (2) weeks from receipt of information. OWNER's failure to return review comments within two weeks may result in an extension of the project schedule but shall not be the basis for an adjustment in the Task Order fee.

- ~~OWNER shall be reasonably responsible for, and ENGINEER may reasonably rely upon, the accuracy and completeness of all requirements, programs, instructions, reports, data, and other information furnished by Owner to Engineer pursuant to this Agreement. ENGINEER may use such requirements, programs, instructions, reports, data, and information in performing or furnishing services under this Agreement. ENGINEER's scope of work does not include verifying OWNER Provided Information for accuracy or completeness. OWNER may request an independent review of OWNER Provided Information by ENGINEER pursuant to a mutually agreed amendment to this Agreement. Such amendment may include an adjustment in price and schedule to the extent that any corrective action in ENGINEER's Services arises out of inaccurate OWNER Provided Information.~~ Int _____

PART 6.0 PERIODS OF SERVICE

ENGINEER estimates that Tasks 100 through 400 will be completed within seven (7) months from Notice to Proceed, depending on receipt of data requested and OWNER reviews. A detailed Project schedule will be provided under Task 100 and will be reviewed with OWNER and finalized.

PART 7.0 PAYMENTS TO THE ENGINEER

As compensation for the engineering services described in the Agreement and Task Order No. 8686-03, ENGINEER will be paid on a per diem (hourly not to exceed (HNTE)) basis for the services listed herein. The HNTE fee for this scope of services is **$165,000** as complete compensation for the services described in Tasks 100 through 400.

All hourly fee work will be charged monthly based upon the personnel classifications performing the work and corresponding hourly rate set forth in the attached estimated hourly fee breakdown incorporated herein by reference as Attachment A. Labor and expenses on this task will be invoiced according to ENGINEER's then-current Schedule of Rates. A copy of the current Schedule of Rates is attached (Attachment B) and incorporated herein by reference. Subconsultant services will be invoiced at direct cost plus 10-percent markup.

UC Water		
Pressure Zone 935 Elevated Storage Tank: Preliminary Engineering Report		
Task Number	**Task Name**	**Estimated Task Amount**
100	**Project Management and Quality Control**	**$16,000**
200	**Hydraulic Model Evaluation**	**$65,000**
300	**Site Selection**	**$29,000**
400	**Preliminary Engineering Design**	**$55,000**
	Total	**$165,000**

This Task Order is executed on _____.

OWNER:
UNION COUNTY,
NORTH CAROLINA

By: _____

Name: Brian W. Matthews

Title: County Manager

Address: 500 N. Main Street

Monroe, NC 28112

ENGINEER:
CDM Smith INC.

By: _____

Name: Glendon J. Fetterolf, P.E.

Title: Client Service Leader

Address: 4600 Park Road, Suite 240

Charlotte, NC 28209

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 - BREAKDOWN OF FEE ESTIMATE BY PERSONNEL CLASSIFICATION

Union County Water

Pressure Zone 935 Elevated Storage Tank - Preliminary Engineering Report

		Subject Matter Expert	Officer/Senior Technical Specialist	Principal/Associate/Technical Specialist	Senior Project Manager/ Senior Professional	Professional III/Project Manager II	Project Manager I	Professional II/Financial Accounting	Professional I	Senior Designer	Designer Drafter	Senior Project Administration	Project Administration	Total Hours	Total Labor Dollars	Other Direct Costs/Expenses	Subconsultant Services (with 10% Markup)	Total Cost
Task Number	**Task Name**																	
	2025 Billing Rates	$325	$305	$265	$230	$200	$180	$165	$135	$150	$125	$140	$110					
Task 100	**Project Management and Quality Control**		8		40			8	6				18	80	$ 15,750	$ 250		$ 16,000
Task 200	**Hydrualic Model Evaluation**		2	3	7	10								22	$ 5,015	$ -	$ 59,985	$ 65,000
Task 300	**Site Selection Alternatives Evaluation**		8	8	36	9		11	68		22	2		164	$ 28,665	$ 335		$ 29,000
Task 400	**Preliminary Engineering**		16	6	46	2		52	162	2	36	12	2	336	$ 54,600	$ 400		$ 55,000
Total		**0**	**34**	**17**	**129**	**21**	**0**	**71**	**236**	**2**	**58**	**14**	**20**	**602**	**$ 104,030**	**$ 985**	**$ 59,985**	**$ 165,000**

ATTACHMENT B - SCHEUDLE OF RATES

2025 HOURLY RATE & COMPENSATION SCHEDULE

Hourly Billing Rates

Classification:	2025 Billing Rates
Subject Matter Expert	$325
Officer/Senior Technical Specialist	$305
Principal/Associate/Technical Specialist	$265
Senior Project Manager/ Senior Professional	$230
Professional III/Project Manager II	$200
Project Manager I	$180
Professional II/Financial Accounting	$165
Professional I	$135
Senior Designer	$150
Designer Drafter	$125
Senior Project Administration	$140
Project Administration	$110
Resident Project Representative (6)	TBD

1) The above rates include salary costs, overhead, and profit.

2) Hourly rates shall be reviewed in December of each year by ENGINEER, and adjusted, subject to OWNER's approval, to reflect the appropriate rates and charges for the next calendar year. In January of each year, ENGINEER will submit to OWNER for approval proposed hourly rates for the following year.

3) Reimbursable project expenses (such as printing, postage/shipping, etc.), incurred under Hourly or Per Diem will be billed to OWNER at cost. All vehicle mileage shall be billed at rates allowed by IRS.

4) Subconsultants employed by ENGINEER will be billed to the OWNER at cost plus 10% markup.

5) Approval of adjusted Hourly rates by OWNER does not affect cost ceilings for compensation under the Agreement for professional services, or currently open Task Orders/Purchase Orders.

6) Resident Project Representative (RPR) to be negotiated based on individual project basis and RPR need.

Notwithstanding anything herein to the contrary, reimbursable project expenses, as referenced above, shall be limited to the Reimbursable Expenses set forth in Section 6.1.5 of the Agreement. Int _____