Master Agreement No.: 2019-0025

PO # 2021-494

TASK ORDER No. 1

UNDER
MASTER AGREEMENT FOR ON-CALL PROFESSIONAL SERVICES

This Task Order ("Task Order"), made as of the 24th day of November, 2020, by and between the Town of Apex (hereafter, "Town") and CDM Smith Inc ("Professional").

WITNESSETH

WHEREAS, Town and Professional entered into a Master Agreement for On-Call Professional Services dated September 4, 2018 ("Master Agreement"); and

WHEREAS, Town has determined it is in need of Services for On-Call Water Resources Professional Engineering, Surveying, Geotechnical, and/or Environmental Engineering Services ("Project"), and Professional desires to provide such Services; and

NOW THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt of which is acknowledged, the parties agree as follows.

1. Recitals, Purpose and Effective Date. The Recitals and the Master Agreement are incorporated into this Task Order. Each party represents and warrants that it has in its possession and is familiar with the Master Agreement, and agrees that such does not need to be attached to this Task Order. The purpose of this Task Order is to set forth specific terms and conditions pursuant to which Professional shall provide Services for the Project. The Project is Sunset Hill Lift Station Improvements and is further identified on Attachment 1 Scope of Work attached hereto and incorporated herein by reference. The Effective Date of this Task Order is the date on which it is executed by the last to execute this Task Order.

2. Commencement and Termination.
   A. Professional's services on Project shall commence upon a Notice to Proceed issued by Town or as otherwise provided in Attachment 1.
   B. If the Master Agreement terminates before the Services provided hereunder are completed, then and in that event the Master Agreement shall continue as to Project until such time as Project is satisfactorily completed.

3. Schedule, Milestone Dates. Project schedule, including date by which Services shall be completed, and all deliverables to be delivered is provided in Attachment 1.

4. Fee for Services.
   A. The total compensation for Basic Services is provided in Attachment 1.
   B. The fee for Additional Services, if any, shall be determined as provided in Attachment 1, or, if not so provided, as provided in Agreement.

5. Key Personnel and Use of Subcontractors.
   A. Professional's key personnel are provided in Attachment 1.
   B. If Professional is to use subcontractors for a portion of its Services, then the following applies to such subcontractor(s):
      No changes in Professional's key personnel or subcontractors designated in this Task Order as those who will provide Services shall be permitted except with the prior written consent of Town, which consent shall not be unreasonably withheld.

6. Insurance. Professional represents and warrants that all insurance requirements set forth in Agreement continue to be met.

7. Amendment. This Task Order may be amended only by written amendment of the parties.

In witness thereof, the contracting parties, by their authorized agents, affix their signatures and seals this ____day of_____, 2020.

Professional

Name: Kevin C Irby
Name of Professional (type or print)

By: _____
(Signature)

Title: Vice President

Attest: _____
(Secretary, if a corporation)

CDM SMITH INC 1970 MASSACHUSETTS

Town of Apex

Drew Havens
Drew Havens, Town Manager

Attest: Donna Hosch
Town Clerk

Type text here

APEX 1873 NORTH CAROLINA

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

Thomas V. Holloman
Finance Director

ATTACHMENT 1

SCOPE OF WORK

The Project is Sunset Hill Lift Station Improvements

The Basic Services are Engineering evaluations and subsequent design

Project Schedule and Deliverables: 6.5 months from NTP. Deliverables are summarized in Attachment 1

Total Compensation for Basic Services: $69,775

Method of Determining Fee for Additional Services: Staff time for each task.

Key Personnel: Deandra Hyman, Michael Sloop, Ross Stroud, Beau Mackie, Kevin Irby

ATTACHMENT 1
TO AGREEMENT BETWEEN OWNER AND ENGINEER
November 2020

This is an exhibit attached to and made a part of and incorporated by reference into the Original Agreement, dated September 4, 2018 between CDM Smith Inc. (ENGINEER) and Town of Apex (OWNER) for professional services.

1.0 ENGINEER'S SERVICES

The existing Sunset Hill Lift Station (SHLS), located on Sunset Lake Road, consists of a wet well with duplex submersible pumps, below grade valve vault, standby generator, and associated electrical facilities. The SHLS conveys wastewater via an 8-inch force main directly to the wastewater treatment plant, which is located near the intersection of US 1 and NC 55. Projected development within the contributing sewershed is expected to require upgrades to the existing SHLS, including lowering the wet well and possibly increasing pump capacity. The OWNER has indicated the preferred approach is to construct a new SHLS on the existing property, outside the 100-year floodplain and that will avoid the proposed greenway. Figure 1 shows the approximate location of the existing and conceptual proposed SHLS.

This Scope of Work includes developing future flow projections to the SHLS, developing a hydraulic model for the proposed SHLS and force main, performing model simulations based on existing and future flow projections, collecting geotechnical information at the approximate location of the proposed wet well, performing a preliminary engineering evaluation to determine the required pump and force main capacity, and consideration of a phased implementation approach is recommended. A future Task Order will be developed to include design, permitting, bidding, and construction administration and observation services for the proposed improvements.

2.0 SCOPE OF WORK

ENGINEER will provide the following services under this Scope or Work:

- Task 100 – Project Management and Data Collection
- Task 200 – Future Flow Projections
- Task 300 – Geotechnical Investigations
- Task 400 – Preliminary Engineering Evaluation

A description of each of the tasks above is provided below. Additional services may be provided by the ENGINEER upon separate written authorization from the OWNER for a mutually agreed upon scope and budget.

Task 100 – Project Management and Data Collection

The project management task includes those activities involved with the planning and subsequent monitoring and control of the project. This Scope of Work assumes a duration of six (6) months. In addition to the ENGINEER's normal in-house staff management, document control, job tracking procedures, and invoicing, the following subtasks will be considered project management services:

Project Initiation

A virtual kickoff meeting will be held with the OWNER to discuss project critical success factors/goals,

schedule, administrative procedures, respective responsibilities, communications, OWNER contacts, OWNER expectations, progress reporting, data collection, and other project matters. Key stakeholders of the OWNER and ENGINEER's project team are expected to attend.

Quality Control

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

Data Collection

The OWNER will provide and ENGINEER will review the following information:

- Current GIS including, but not limited to wastewater infrastructure, water infrastructure, tax parcels, 2045 land use, streams, floodplain, easements, roads, topography, and other information pertinent to this evaluation.
- OWNER's wastewater collection system master plan.
- Previous engineering or other evaluations related to the SHLS.
- Record drawings for the SHLS and force main as well as the gravity sewer immediately upstream of the SHLS.
- SHLS information including pump make and model, pump curves, drawdown test results (if available), existing wet well depth, pump on/off levels, and other operation data and elevations of sewer entering the SHLS.
- Flow data into the SHLS, obtained by others for the OWNER.
- Information on the planned greenway improvements as it applies to the SHLS evaluation.
- Information on the proposed school, including location, wastewater collection system infrastructure, and projected wastewater flows.
- Approximate upstream gravity sewer elevations to be used in determining the proposed wet well depth.
- Information for the North Carolina Department of Transportation project that includes replacement of existing culverts and associated impacts to predicted flood elevation at the SHLS. Also, available information on the 54-inch casing under I-540.
- Design drawings for the regional lift station currently being bid by a private developer.
- Available condition information for the SHLS.
- Wastewater flow for the Colvin Park neighborhood, which currently flows to the Town of Cary but will be switched to the SHLS in the future.
- Town of Apex 2045 Land Use Plan.

ENGINEER will perform a site visit of the existing SHLS site to collect information on the location for the proposed SHLS as well as asses the condition of the existing electrical equipment to determine their suitability to be used for the future SHLS.

Task 200 –Flow Projections

ENGINEER will develop build-out flow projections for the existing sewershed based on the May 5 2020 flow monitoring study and information included in the 2045 Land Use Plan and Traffic Analysis Zone planning data. Average daily dry weather wastewater flow projections for currently undeveloped parcels will be based on industry standard wastewater flows for the projected land use types. A peaking factor will be applied to the dry weather flow to calculate a peak wet weather flow. Wastewater flows will be developed for the following planning periods:

- Existing Flows
- Existing Flows with the Proposed School
- Existing Flows with the Proposed School and Colvin Park neighborhood
- Build-Out Flows.

ENGINEER will virtually meet with the OWNER to present the results of the evaluation and finalize the flow projections.

Task 300 – Geotechnical Investigation

ENGINEER will retain the services of a subcontractor to perform a geotechnical investigation to observe subsurface conditions and support the design of the project. The scope of the subsurface investigation will consist one (1) Standard Penetration Test (SPT) boring at the anticipated future wet well location, as shown on Figure 1. In general, drill depth will extend to 2 feet below the anticipated proposed structure invert. Where refusal is encountered above the planned depth of boring, rock coring will be performed for up to five (5) feet or to a depth of two (2) feet below the structure invert, whichever is less. The boring will be backfilled with soil cuttings.

Upon completion of the geotechnical investigation, ENGINEER will prepare a geotechnical data report summarizing the subsurface conditions observed in the borings and containing the data (boring log, laboratory testing, etc.) collected during the investigation, foundation design recommendations, and construction considerations. Horizontal location of the test hole will be located using GPS services.

TASK 400 – PRELIMINARY ENGINEERING EVALUATION

ENGINEER will perform a preliminary engineering evaluation, which will consist of development of a hydraulic model, a phased improvements evaluation, and development of a technical memorandum, as presented below.

Task 401 – Hydraulic Model Development

ENGINEER will develop a steady state hydraulic model of the existing and proposed SHLS and force main using WaterGEMS software. The model set-up will be based on record drawing information for the existing SHLS (with actual wet well depth) and force main elevations and GIS information for the proposed SHLS and future force main (if needed) elevations. Existing and future dry-weather and peak wet-weather flows will be as determined in Task 200. The model will be verified through a comparison to existing flow and pressure data, to be provided by OWNER.

Task 402 – Phased Improvements Evaluation

ENGINEER will perform an evaluation to determine the required pump station capacity for the flow scenarios developed in Task 200. Based on the results of the evaluation, ENGINEER will develop preliminary design recommendations for pump selection and wet well dimensions to maximize the capacity of the existing force main. If it is determined that the pumps will need to be replaced (full pump replacement, not just an increase in impeller diameter), the wet well enlarged, and/or the force main upsized based on the build-out flow, ENGINEER will determine the flow at which these upgrades will be recommended. This will allow the OWNER the ability to determine the flow trigger to make the upgrades and how the upgrades should be factored into the initial design for the replacement SHLS (e.g. whether to oversize the wet well now to accommodate future flows). If the force main is required to be upsized, it is assumed that the replacement force main will discharge into the wet well of a developer-constructed regional lift station, located north of the SHLS, or will parallel or replace the existing force main to the WWTP. ENGINEER will develop conceptual opinions of probable construction cost for the phased improvements.

A preliminary site layout for the proposed SHLS will be developed, which will utilize GIS data and aerial photography to overlap the key infrastructure components.

ENGINEER will facilitate a workshop with the OWNER to present the results of the preliminary evaluation and identify the OWNER's preferred recommendations. These recommendations will serve as the foundation for the design to be performed by ENGINEER in a subsequent Task Order. ENGINEER will document the workshop discussion in meeting minutes and distribute to attendees.

Task 403 – Technical Memorandum

ENGINEER will prepare a draft Technical Memorandum (TM) summarizing development of the flow projections, results of the geotechnical investigation, results of the preliminary engineering evaluation, and improvements recommended to be moved forward into final design. ENGINEER will conduct a virtual meeting with the OWNER to present the findings and receive comments. Comments will be addressed, and a final TM will be issued to the OWNER.

3.0 ASSUMPTIONS

The following assumptions were made during development of this Scope of Work. Changes to these assumptions can be included as an Amendment to this Agreement.

- Flow projections will be developed for the scenarios included in Task 200. Flow projections for interim planning periods will not be developed or modeled.
- The proposed SHLS may include variable frequency drives.
- The hydraulic evaluation includes the pump station and force main only. The upstream collection system is assumed to be adequately sized for the existing and future flows.
- The profile for the proposed force main to the developer-constructed regional lift station will be based on assumed depth of four (4) feet below existing GIS topography.
- The proposed force main will not manifold with another force main.
- The existing force main does not manifold with another force main. The OWNER will provide the water elevation at the discharge point at the wastewater treatment plant to be assumed for the boundary condition.
- One (1) layout for the proposed SHLS will be developed.
- ENGINEER may rely upon the accuracy of OWNER provided data for the execution of the project.

4.0 OWNER'S RESPONSIBILITIES

The responsibilities of OWNER in addition to those in the main agreement are as follows:

- Provide ENGINEER with all requested data.
- Provide access to site as needed.
- OWNER shall provide review comments on submittals within two (2) weeks of receipt of deliverable.
- OWNER shall coordinate communications with other Town Departments, such as the Planning and Parks and Recreation Services.

5.0 SCHEDULE

It is anticipated that the project will take six (6) months to complete, starting within two weeks of receipt of a formal notice to proceed (NTP). ENGINEER will prepare an updated detailed schedule within the first thirty (30) calendar days after NTP.

6.0 PAYMENT AND COMPENSATION

Total compensation to the ENGINEER for the work described above shall be a lump sum fee not to exceed of $69,775, unless changed by a duly authorized amendment. Invoices will be submitted monthly based on estimated project percent complete, with a final invoice submitted once all project deliverables are completed. Additional services, if applicable and approved by the OWNER, will be compensated at an agreed upon lump sum fee. The cost breakdown per task is presented in the table below.

Task	Description	Lump Sum
100	Project Management and Data Collection	$10,325
200	Future Flow Projections	$5,100
300	Geotechnical Investigations	$4,350
Subconsultant	F&R Soil Boring and Testing	$7,680
400	Preliminary Engineering	$42,320
	TOTAL =	**$69,775**