ATTACHMENT A

SCOPE OF SERVICES

PRELIMINARY DESIGN REPORT

I. BACKGROUND

The City of Coppell (OWNER) originally constructed the Sandy Lake Lift Station (SLLS) in 1975 and made improvements in 2004. The City has maintained SLLS during its useful life, despite almost losing the station in 2015 due to flooding that occurred as a result of a significant rain event. Even though extensive actions were taken by City Operations Staff, the flood waters were four inches from an electrical feed that would have rendered the lift station inoperable until the flood water subsided. During the flood event, the SLLS site was more than three feet underwater.

For this reason, the City would like to investigate and analyze options for replacing the existing SLLS within the same site footprint. Thus, the OWNER requests and authorizes Alan Plummer Associates, Inc. (ENGINEER) to perform BASIC ENGINEERING SERVICES including: investigation, analysis, and preparation of the Preliminary Design Report. This project will consist of two phases as follows:

Phase I – Investigation, Analysis, and Comparison of Options. Phase I will consist of general engineering consulting services required to investigate and analyze options for replacing the existing Sandy Lake Lift Station on the same City-Owned property. Major activities include:

- Review City's wastewater model to confirm buildout flows;
- Confirm force main size to convey buildout peak flow;
- Confirm FEMA floodplain design wet weather event and elevation with online resources, and model for 25-year elevation for road design per TCEQ;
- Recommend work required to decommission, demolish and abandon existing lift station;
- Evaluate and recommend four options to locate permanent meters to monitor incoming flows from the two interceptors;
- Evaluate and recommend five options to locate permanent meters across the collection system to monitor flows;
- Evaluate lift station site improvements required to maintain access during 25-year wet weather events and recommend improvements;
- Recommend onsite electric generator with auto start and electric switchgear ;
- Recommend odor control equipment;
- Recommend types of corrosion protection including linings, coatings, and pipe material;
- Evaluate site lighting requirements and recommend improvements;
- Evaluate and recommend site security upgrades;
- Recommend instrumentation allowing remote monitoring of the pumps, inlet flow, discharge flow, wetwell level, loss of electricity, generator status and site security;
- Provide a Preliminary Design Report (PDR) describing the conceptual design, site layout, number of pumps and supporting motor control center (MCC).

Phase II – Design, Bid Phase, and Construction Phase Services. The Phase II Scope of Services will be developed after the completion of Phase I and shall include the preparation of detailed design and final construction plans and specifications.

This Phase I project will evaluate the replacement options and deliver a preliminary design report for recommended improvements. The detailed design, bid/award, and construction phase services required shall be provided by separate written agreement as part of Phase II of this project.

II. BASIC SERVICES:

Basic Services for Phase I provided by the ENGINEER shall generally be covered under the following activities:

Activity A – Project Coordination
Activity B – Data Collection and Field Investigation
Activity C – Conceptual Design
Activity D – Lift Station Preliminary Design

Specific tasks for each activity are identified in the following sections.

Activity A – Project Coordination

Task 1 – Project Management

Provide project management for Activities A – D. Project management shall include, but not be limited to, developing and implementing a project management plan; tracking and managing internal schedules of work; monitoring and addressing issues related to the scope of work, budget and deliverables; preparing and processing monthly billings; providing labor resources necessary to fulfill scoped work; scheduling and participating in quality control reviews; coordinating and tracking requests for information; and providing updates to the OWNER on a monthly basis. ENGINEER has budgeted up to six (6) months for project management.

Deliverables:
- Monthly invoices, with supporting documentation
- Monthly progress reports

Task 2 – Kickoff Meeting and Meeting Preparation

Project Kickoff Meeting: ENGINEER shall prepare for and participate in a Project Kickoff Meeting to confirm the scope of work, deliverables, schedule, critical project milestones, and success factors. ENGINEER shall prepare and present the following at the kickoff meeting: Overview of work to be completed; Draft Project Management Plan (PMP); Project Schedule.

Deliverables:
- Project Management Plan
- Project Schedule
- Draft and Final Meeting Notes

Task 3 – Coordination Meetings

ENGINEER will coordinate, prepare for, and conduct progress meetings with the OWNER. Meetings shall take place at the OWNER's office in Coppell.

1. Engineer shall prepare an agenda for the meetings, moderate the meetings, and prepare/distribute meeting notes.
2. Review project tracking log
3. Up to three (3) coordination meetings shall be held, the budgeted meetings do not include the kickoff meeting or the quality control meeting following the distribution of the DRAFT Preliminary Design Report.

Deliverables:

- Updated Project Schedule
- Updated Project Tracking Log
- Draft and Final Meeting Notes

Activity B – Data Collection and Field Investigation

Task 1 – Data Collection

The Engineer will collect data as follows:

1. Consult with the OWNER to gather information relative to the Project including, existing hydraulic model of the collection system and operational data. Information provided by the OWNER shall include:
    a. Existing design/construction plans, maps of the service area, reports, hydraulic profiles, if available.
    b. Available AutoCAD files (DWG format) associated with the design and subsequent improvement projects.
    c. System flow models and prior modeling reports, including available existing electronic versions and data analysis to include:
        i. Historical average, minimum and peak demands or flows, any existing projected flows.
        ii. Modeled pumping data, and capacity.
    d. Operational data including historical average, minimum and peak demands or flows, any existing projected demands or flows, existing pump run data, capacity, and date of any equipment upgrades.
    e. Power consumption records.
    f. Population and development planning data.
    g. Geotechnical reports provided during the design and subsequent improvement projects at the lift station, if available.

2. The ENGINEER shall review the available data including but not limited to:
    a. Compare model runs to historical lift station data.
    b. Review electrical switch gear.
    c. Review electrical generator backup requirements.
    d. Review instrumentation and points of interest monitored and recorded.
    e. Review SCADA data from the lift station to include:
        i. Flowmeter data and wet well level for a 2-year period.
        ii. Pump run status for the same historical period.

3. The ENGINEER shall make prudent planning assumptions as necessary to:

a. Calculate the existing lift station design and peak flow rate
b. Estimate future recommended lift station design and peak flow rate
c. Determine FEMA floodplain design wet weather event and elevation with online resources, and model for 25-year elevation for road design per TCEQ

Task 2 – Field Investigation

Visit Lift Station Facilities for visual hydraulic assessment and to confirm:

1. Record drawing data
2. Interceptor and force main layout
3. Topographic survey requirements

Activity C – Conceptual Design

Task 1 – Development of Conceptual Design

1. Conduct topographic survey of the site, including all improvements. Topographic survey will be provided as described in Special Services.
2. Review past Geotechnical Reports provided by the OWNER. If Geotechnical Reports are not available, conduct Geotechnical Investigation of the site. Geotechnical Investigations, if needed, will be provided as described in Special Services.
3. Confirm OWNER's desire for a wet well with submersible pumps lift station configuration.
4. Determine number and size of pumps.
5. Based on number of pumps and set pump cycle times, determine wet well size along with initial low and high wet well water surface elevations.
6. The conceptual design will include:
    a. New lift station layout
    b. Site improvements to allow access during 25-year wet weather event
    c. Onsite backup electrical generator requirements
    d. Proposed modifications to the existing interceptors and force main
    e. Electrical switchgear and instrumentation improvements for the new lift station
    f. Metering options to monitor influent flows from both interceptors plus a meter on the force main
7. Review of the wastewater collection system model will be conducted. The ENGINEER's analysis of the existing collection system model shall be limited to the model results presented in the summary report provided by the OWNER. Modification of the collection system model and model runs to reflect recommended modifications, if required, shall be provided as an Additional Service.

Task 2 – Conceptual Design Workshop

The purpose of the workshop is to review the design criteria and conceptual layouts developed during this activity.

1. ENGINEER will prepare an agenda for the workshop and moderate the meeting.
2. Following the workshop, the ENGINEER will prepare a Technical Memorandum outlining the conceptual design items and topics discussed during the workshop.
    a. ENGINEER shall prepare a capital component as an Opinion of Project Cost (OPC). The cost of the project as refined in the workshop shall be included in the Conceptual Design Technical Memorandum.
    b. Four copies of the Technical Memorandum marked "DRAFT" will be provided to the OWNER for review and comment.

c. The ENGINEER will compile the comments and update the Technical Memorandum as “FINAL DRAFT”.
d. The ENGINEER will provide four copies and one electronic copy of the Technical Memorandum marked “FINAL DRAFT”. The Technical Memorandum will be the basis of the Preliminary Design.

Deliverables
- Draft Opinion of Project Cost
- Draft Conceptual Design Technical Memorandum
- Final Conceptual Design Technical Memorandum

Activity D – Lift Station Preliminary Design

Task 1 – Prepare Preliminary Design Report (PDR)

Engineer shall prepare a draft preliminary design report that includes information developed during the Conceptual Design Activity. The PDR will include recommendations for:
1. Constructing a new lift station two feet above flood elevation including site improvements.
2. Lift station wetwell configuration with submersible pumps.
3. Wetwell sizing with orientation of pumps and valves.
4. Location of onsite electric generator with auto start and electric switchgear.
5. Type of wetwell sensor level control.
6. Discharge flow meter.
7. Flow meter on each of the two incoming sanitary sewer lines.
8. Odor control equipment.
9. Site security upgrades.
10. New instrumentation allowing remote monitoring of the pumps, inlet flow, discharge flow, wetwell level, loss of electricity, generator status and site security.
11. Controls narrative.
12. Construction sequencing and decommissioning of the existing lift station.
13. Schedule for construction phase.
14. Update of Opinion of Project Cost.

Task 2 – PDR Quality Control Review Meeting

ENGINEER will prepare for and conduct the Quality Control (QC) Review meeting.
1. The QC Review meeting will be held at the ENGINEER’s office in Ft. Worth
2. Approximately 10 days prior to the QC Review meeting, four copies of the PDR marked “DRAFT” will be provided to the OWNER for review and comment.
3. During the meeting the ENGINEER will record comments and suggested changes to the DRAFT PDR.
4. Based on input received from the OWNER and ENGINEER’s inhouse quality control team, update and finalize the PDR.
5. The ENGINEER will provide four copies and one electronic copy of the PDR marked “FINAL DRAFT”. The PDR will be the basis of the Detailed Design.

Deliverables
- Draft PDR
- Final Draft of PDR

- Site Plan Design Layout
- Process and Instrumentation Diagrams (P&IDs) for the lift station
- Controls narrative to be reviewed and discussed with OWNER's operations staff

III. SPECIAL SERVICES

Special Services incidental to the Project, but not included within the scope of Basic Services covered above, which may be performed or arranged for separately by the OWNER, or may be added to the ENGINEER's responsibilities by mutual agreement and written authorization, include, but are not necessarily limited to the following:

Task 1 – Topographic Survey

Topographic Survey of the lift station site shall generally include horizontal and vertical surface features; interceptor, force main and drainage features; validation of record drawing dimensions, and more specially meet the following survey scope of work:

1. Prior to commencing any topographic fieldwork, surveyor will coordinate with, collect and review available public and private utility records within the project limits. The surveyor will submit a utility locate request for the project limits to Texas 811.

2. City Owned Utilities shall be located and tied together accordingly (water, wastewater, storm sewer, and telephone/fiber) and associated appurtenances including but not limited to: manholes, cleanouts, meters, services, isolation valves, blow-offs, fire hydrants, inlets, junction boxes, headwalls, wingwalls, rip-rap aprons, and all other appurtenances. Survey shall denote size, material type, and flow direction as applicable. Accessible utility manholes/vaults shall be detailed identifying: structure size, material type, rim elevations, measure downs and corresponding flow line and top of pipe elevations for visible pipe wall penetrations. Upstream and downstream sanitary and storm sewer rim and invert data shall be included.

3. Right-of-Way (ROW) and Property Survey will locate and tie existing ROW, property lines and easements including type, size, volume and page, where applicable.

4. Survey will horizontally and vertically pick up surface features; drainage features; building locations; fences/retaining walls; trees and/or tree lines; roadways; railways; and city, county and franchise utilities (as provided by Texas 811 utility locate request) within the project area to the following limits:
   - Within location of proposed and existing lift station site approximately 1 acre.

5. Fences and retaining walls surveyed shall include location, height, and material type for fences located in the project limits.

6. The survey of trees shall include caliper size trunks approximately 6-in and larger. Based on the judgement of the ENGINEER the edge (tree line) of groups of trees or shrubs may be substituted for the survey of all trees within heavily wooded areas. In such areas the ENGINEER shall survey trees that exceed 12-in caliper size. Identification of tree species beyond that provided under Basic Services shall be provided as an Additional Service.

7. Methods and precision. Survey coordinates will be reported on the Texas State Plane Coordinate System, NAD83 (+/- 0.01 feet) with vertical coordinates reported in the NAVD 88

Vertical System (+/- 0.01 feet). Horizontal and vertical control will be set using post-processed GPS static methods. Data will be collected using RTK GPS and robotic total stations for the majority of the survey.

8. ENGINEER will research boundaries, subdivision plats, ROW and easements of which the surveyor has knowledge, which may affect the physical boundaries of the project. Easements with volume and page numbers will be identified and labeled in the survey submittal. Research will include public record resources, including but limited to: county records; TxDOT records; franchise utility records (gas, telephone, electric, cable and others); ownership or easement records as available; and title/abstracting reports from owner on proposed easement parent tracts.

9. The budget for survey established in this contract assumes full ground survey of the project limits. Billings will be based on actual work performed by the surveyor (whether ground survey, aerial survey or both).

Deliverables

- Topographic Survey
    - CAD Format: AutoCAD Civil3D 2013 format CAD files
    - Project Scale: 40 scale
    - Base Map: An electronic base map at 1:1 scale (base unit US Survey Foot) containing pertinent topographic field data will be prepared.
    - APAI CAD Drafting Standards including layers and styles to be used.
    - Text will be oriented with North being true reading West to East.
    - The base map shall be in AutoCAD DWG format.
    - DTM generated contours shall have one foot minor and five foot major intervals
    - XML surface file, defining the AutoCAD Civil 3D surface.

Task 2 – Geotechnical Investigation

In the event previous Geotechnical Reports are unavailable or additional information is needed, conduct geotechnical investigation of the site as follows:

1. Geotechnical investigation will occur at the locations identified by the ENGINEER and approved by the OWNER. Soil borings will be advanced based on surface conditions, pre-existing geotechnical data and other factors. Samples will be acquired and laboratory tests will be conducted to provide engineering data necessary for the design. Laboratory tests for each sample collected are anticipated to include:

    - Dry, saturated, buoyant and total unit weight
    - Cohesion
    - Particle size and gradation
    - Atterburg's limits
    - Unified Soil Classification
    - Internal soil friction angle
    - Void ratio
    - Elastic modulus
    - Resistivity
    - pH
    - oxidation-reduction potential

- sulfides
- moisture content

2. The geotechnical budget allowance is based on three soil borings up to 35 feet total depth (TD) each and one boring up to 50 feet TD. The borings will be backfilled using cuttings and bentonite chips. Actual work required will be refined as the PROJECT progresses. Billing will be based on actual work performed by the geotechnical subcontractor.

Deliverables

- Certified Laboratory Report Copies
- Draft Geotechnical Report
- Final Geotechnical Report

IV. ADDITIONAL SERVICES

Various ADDITIONAL SERVICES incidental to the Project, but not within the scope of the Basic Engineering Services covered, which may be performed or arranged for separately by the OWNER, or may be added to the ENGINEER's responsibilities by mutual agreement and written authorization, include, but are not necessarily limited to, the following:

a. Modifications to collection system model(s) to reflect recommended changes or scenario runs to predict future conditions.
b. Additional site visits for investigation beyond those provided above.
c. Investigation associated with condition assessment of the collection system, pipelines and/or structures outside of the lift station site.
d. GIS processing of geophysical and/or geotechnical data beyond the assumptions provided above.
e. Preparing applications and supporting documents for grants, loans, or planning advances for providing data for detailed applications.
f. Providing additional copies of reports, plans, specifications, and contract documents beyond those specifically described above.
g. Public relation activities and consulting services.
h. Permanent and temporary construction easements, with accompanying exhibits.
i. Subsurface Utility Engineering to locate existing utilities on or adjacent to site.
j. Assistance with grants and funding applications.
k. Other services not included in Basic Services that are approved by the OWNER.

IV. COMPENSATION

Compensation for BASIC ENGINEERING SERVICES shall be paid by the OWNER to the ENGINEER as identified in Activities A-D above for the following lump sum amounts not to exceed $144,679.00.

Compensation for SPECIAL SERVICES, when authorized in writing by the OWNER shall be paid by the OWNER to the ENGINEER as identified in Part III Special Services above and shall be based on the actual hours and costs in accordance with the fee schedule below and shall not exceed $11,788.00.

Compensation for ADDITIONAL SERVICES, when authorized in writing by the OWNER shall be paid by the OWNER to the ENGINEER as identified in Part IV Additional Services above and shall be based on the actual hours and costs in accordance with the fee schedule below and shall not exceed $5,000.00.

All direct non-labor expenses, including mileage, travel and lodging expenses, but excluding subcontract expenses, applied to the BASIC ENGINEERING SERVICES, shall be paid at invoice or internal office cost plus a fifteen percent (15%) service charge. Subcontract expenses shall be paid at direct cost plus a fifteen percent (15%) service charge. All sales, use, value added, business transfer, gross receipts, or other similar taxes will be added to ENGINEER's compensation when invoicing OWNER. The total fee for the work defined above is broken down below by task as defined in this attachment:

BASIC SERVICES		
Activity	**Task Description**	**Fee**
Activity A	Project Coordination	
Task 1	Project Management	$2,713.00
Task 2	Kickoff Meeting and Meeting Preparation	$5,543.00
Task 3	Coordination Meetings	$6,013.00
	SUBTOTAL ACTIVITY A	$14,269.00
Activity B	Data Collection and Field Investigation	
Task 1	Data Collection	$25,373.00
Task 2	Field Investigation	$15,873.00
	SUBTOTAL ACTIVITY B	$41,246.00
Activity C	Conceptual Design	
Task 1	Development of Conceptual Design	$41,873.00
Task 2	Conceptual Design Workshop	$25,573.00
	SUBTOTAL ACTIVITY C	$67,446.00
Activity D	Lift Station Preliminary Design	
Task 1	Prepare Preliminary Design Report (PDR)	$17,929.00
Task 2	PDR Quality Control Review Meeting	$3,789.00
	SUBTOTAL ACTIVITY D	$21,718.00
SPECIAL SERVICES		**Not to Exceed**
Task 1	Survey	$7,360.00
Task 2	Geotechnical Investigation	$4,428.00
	SUBTOTAL SPECIAL SERVICES	$11,788.00
ADDITIONAL SERVICES		**Not to Exceed**
	Additional Services	$5,000.00
	SUBTOTAL ADDITIONAL SERVICES	$5,000.00
	TOTAL FEE	**$161,467.00**

The ENGINEER may submit interim statements, not to exceed one per month, for partial payment for SERVICES rendered. The statements to OWNER will be by task for the percentage of work actually completed. The OWNER shall make interim payments within 30 calendar days in response to ENGINEER's interim statements.

No budgetary allowance has been established for Additional Services. Additional services must be authorized by amendment of the agreement. Time and materials billing for ENGINEER's labor will be at the hourly rates provided below.

IV. SCHEDULE

The time period for performance of BASIC SERVICES of ENGINEER as detailed above shall be completed within 180 days of the execution date of this Agreement.

ATTACHMENT B
ALAN PLUMMER ASSOCIATES, INC.
HOURLY FEE SCHEDULE
2018

Staff Description	Staff Code	2018 Rate
Admin Staff	A1-A3	$ 90.00
Senior Admin Staff	A4	$ 120.00
Designer/Technician	C1-C2	$ 90.00
Designer/Technician	C3	$ 115.00
Senior Designer/Technician	C4	$ 140.00
Electrical Engineer	EE1	$ 145.00
Senior Electrical Engineer	EE2	$ 270.00
Engineer/Scientist Intern	ES0	$ 60.00
Engineer-in-Training/Scientist-in-Training	ES1-ES2	$ 110.00
Engineer-in-Training/Scientist-in-Training III	ES3	$ 125.00
Project Engineer/Scientist	ES4	$ 140.00
Senior Project Engineer/Scientist	ES5	$ 170.00
Project Manager	ES6	$ 195.00
Senior Project Manager	ES7	$ 240.00
Principal	ES8-ES9	$ 290.00

Billing rates may be adjusted by up to 4 percent annually (at the beginning of each calendar year) during the term of this agreement.

A multiplier of 1.15 will be applied to all direct expenses

A technology charge will be billed at $5 per labor hour.