May 2, 2022

Ms. Carrie Weir
Utility Division Director
City of Temple
3210 E Avenue H
Bldg. A, Suite 123
Temple, TX 76501

Subject: Leon River and Little Elm Basins Wastewater Assessment

Dear Ms. Weir:

We appreciate the opportunity to submit this proposal to perform consulting engineering services for sanitary sewer assessments within the City of Temple. The work and scope in the attached follow the necessary guidelines in complying with Temple's agreed upon Administrative Order (AO) with the Environmental Protection Agency (EPA).

Leon River and Little Elm basins wastewater assessment consists of approximately 420,000 linear feet of sanitary sewer gravity mains along with asset management services for 1,450 manholes. Closed-Caption Television (CCTV) will be performed and reviewed for approximately 84,000 linear feet of sanitary sewer. Sub-consultant working with RJN on this project include Ace Pipe Cleaning for CCTV**.**

Price Summary

The compensation for the assessment activities is $1,473,861.00. The cost breakdown for the assessment activities is shown below:

Compensation Detail	
I. Project Management and Administration	$47,915.00
II. Condition Assessment[1/]	$1,116,255.00
III. Data Management	$80,187.00
IV. Asset Management	$215,404.00
V. Hydraulic Model Support	$12,000.00
VI. Cleanout Cap Replacement[2/]	$2,100.00
Total	**$1,473,861.00**

1/ Includes Sub-Consultant Costs
2/ Optional Item

Complete Scope of Services, Detailed Pricing, Schedule, and Map are provided in the following exhibits:

- Exhibit A – Scope of Services
- Exhibit B – Pricing
- Exhibit C – Proposed Schedule
- Exhibit D – Project Map

We are looking forward to the opportunity to work with the City of Temple on this important project. It is our pleasure to submit this proposal to you. Please feel free to contact us if you would like to discuss this proposal or have any questions.

Sincerely,

Daniel Jackson, PE
Senior Vice President

Karen Rico, PE
Project Manager

EXHIBIT A
SCOPE OF SERVICES

The City of Temple has initiated a project to perform a uniform and comprehensive system wide evaluation of the wastewater collection system in compliance with the City's agreed upon Administrative Order (AO) with the Environmental Protection Agency (EPA). The steps outlined in this scope adhere to the necessary steps required within the Administrative Order. Year 4 includes a wastewater system condition assessment and asset management of the Leon River and Little Elm Basins for I/I reduction. The Leon River and Little Elm basins assessment consists of approximately 420,000 linear feet of smoke testing, 1,450 manhole inspections, approximately 18 dyed test, and 84,000 linear feet of Closed-Caption Televised (CCTV) Inspections. Asset management consists of assessing the condition of the selected televised sewer gravity lines and MACP manhole inspection data using an asset management software to analyze and prioritize the line and manhole repairs and replacements. Optional item includes cleanout cap replacement for missing/broken cap defects identified during smoke testing. This optional item consists of up to 420 cap replacements. The services are further described in the following sections:

I. Project Administration and Management

A. Project Administration

1. Meet with City staff to discuss progress of the various tasks throughout the project. Meetings will be held periodically at significant project milestones with written documentation of each meeting provided.

2. Prepare schedule of work activities and maintain throughout project with monthly milestone status reports and projections provided to the City via SharePoint and/or RJN Clarity platform.

3. Perform general consultation with City maintenance, operations, and engineering staff.

4. Tailor Engineer's standard operating procedures to accommodate project requirements and establish internal project controls to ensure schedule, budget and quality control procedures are being maintained.

5. Perform administration and coordination of sub-consultants including, but not limited to ensuring City's contracting rules for procurement and services are met, contract finalization, performance coordination, quality control and payment request verification.

6. Meet with regulatory agencies as needed throughout the project.

II. Condition Assessment

A. Manhole Inspection

1. Utilizing industry standard safety procedures and appropriate traffic control, subsurface manhole components will be inspected. Manholes accessible by vehicle will be scanned utilizing 3D Optical Manhole Scanner technology, where applicable. Manholes located within the study not accessible by vehicle will be visually inspected where condition of components and photos of defects will be recorded. Inspections will be conducted according to NASSCO MACP Level 2 standards.

2. The Engineer shall notify the City of manholes that are inaccessible, not found, buried, or believed to be non-existent. The Engineer's field crew will make a reasonable effort to locate manholes as shown on the provided GIS. The effort will include up to 10 minutes of onsite investigation including a metal detector, probe, and shovel. Manholes found to be buried less than 6 inches below grade in non-paved unobstructed areas shall be uncovered and inspected. If the manhole cannot be located within 10 minutes of arriving onsite, buried in a paved area, or greater than 6 inches below grade in a non-paved area, the Engineer will be compensated at the cost of an actual manhole inspection. If the City makes accessible or exposes the manhole prior to data delivery deadline, City shall notify Engineer. Engineer will make a second visit to inspect the manhole at no additional charge.

B. Public Relations and Notifications

1. Engineer will prepare and deliver notices necessary for the performance of smoke testing. Every reasonable effort will be made to distribute notices two (2) days prior to smoke testing; however, City will allow the Engineer to distribute notices up to a minimum of one day in advance of smoke testing.

2. Engineer may distribute notices up to a maximum of fourteen (14) days prior to smoke testing. If conditions do not allow smoke testing to be performed during this period, Engineer will redistribute notices. If redistribution of smoke notices is required, testing may be performed within one (1) day of noticing.

3. The Engineer, City, City of Temple Fire Department, and City of Temple Police Departments will be notified daily of smoke testing and dyed water testing locations via email.

C. Smoke Testing

1. Smoke testing will be conducted using dual axial blowers. Each 12-inch diameter and smaller segment shall be isolated by sandbagging. Smoke testing lengths shall be limited to two line segments between the upstream and downstream blower locations. Smoke testing will be performed only during dry ground periods.

2. Flags shall be placed at observed smoke locations and digital images shall be captured. Smoke defect locations shall be recorded by obtaining GPS coordinates. Private sector smoke defect images shall be entered into the field inspection database.

3. Main line defects and service lateral defects shall be carefully scrutinized to ensure that a conservative determination of public vs. private side defects is made. If necessary, the line shall be earmarked for television inspection.

D. Dyed Water Flooding

1. Dyed water flooding shall be conducted to verify the existence of inflow and infiltration sources. Dyed water flooding shall be performed at suspected storm sewer cross-connections, streams, creeks, ditches, and other ponding areas that may be contributing to inflow. Estimated leakage rates shall be provided for each positive dye test. Water for the dyed water flooding will be provided by City of Temple at no charge to the Engineer.

E. Sewer Cleaning and Television Inspection (Ace Pipe Cleaning to perform task)

1. Sanitary sewer lines will be cleaned in order to facilitate the televised inspection activities. Standard cleaning rates are based on three passes with a jet cleaner.

2. During cleaning operations, sludge, debris, etc. shall be removed from the sewer and disposed of at a location provided by the City. The City shall provide water for the cleaning operation at no charge to the Engineer. The data shall be provided in digital format.

3. If light cleaning proves inadequate, heavy cleaning shall be recommended. Lines approved for heavy cleaning shall be cleaned with mechanical cleaning equipment. If tap removal/root cutting is necessary, it will be recommended to the City.

4. Television inspections shall be performed on the non-plastic line segments and line segments which show evidence of deterioration, tested positive during smoke testing, or are critical to the collection system.

5. Television inspection will be performed using high quality color equipment and coded using NASSCO's PACP standards.

F. TV Video Review: Engineer will review and analyze the TV Inspection data. Review of the data will consist of viewing the TV footage to ensure that NASSCO PACP standards are met, codes are applied accurately, and the sewer lines identified for TV inspection are either inspected or justification of why it was not inspected is provided.

III. Data Management

A. Data Management

1. Collect and review existing information including maps, as built records, and other pertinent information. City will provide ArcGIS updates shape files of the wastewater system. Engineer shall prepare preliminary field maps for project use from existing City shape files.

2. Update the maps as differences are found during the field investigations and provide them to the City. Updates shall include new lines, manholes, and cleanouts and will be provided electronically in the form of shapefiles to be compatible with GIS.

3. Data shall be recorded by field crews on Engineer's electronic forms for each specified activity. Field inspection data shall be entered into a computerized data management system from which rehabilitation recommendations shall be made. Field inspection data and photos will be provided in digital format to the City.

4. Clarity® is RJN's secure, proprietary project and data management reporting platform that provides our clients accessible data and powerful analytical tools in easily interpreted GIS map format. Live basin data is accessible via most web-capable devices.

IV. Asset Management

Engineer will configure InfoAsset Planner for manholes and assumes minimal changes to current InfoAsset Planner configuration for sewer lines.

A. Source Defect Analysis: At the end of the field investigation services, an engineering analysis of field survey data shall be performed to develop recommendations for prioritizing I/I source repairs. PDF reports by address will be provided to City for service line defects.

B. Condition Assessment Analysis: Engineer will utilize the InfoAsset Planner Project, Television Inspection Data, and Manhole Inspection Data to analyze the Leon River and Little Elm Basins. An asset prioritization will be developed through condition analysis, likelihood and consequence of failure analysis, and the risk matrix. The prioritized results of the analysis will be presented in the InfoAsset Planner software with the estimated cost of line repairs/replacements. A GIS geodatabase containing the inspection scoring, failure analysis, risk analysis, and remedial measures will be provided upon completion of the project.

C. Assessment Recommendations and Report: A description of field investigations, engineering analysis, and recommended action to reduce I/I will be included in the

report. Engineer shall deliver a comprehensive rehabilitation and improvement strategy as coordinated with the City for Leon River and Little Elm basins.

1. Develop rehabilitation and improvement costs for various types of infiltration/inflow defect repairs and sewer improvements for line and manhole improvement.

2. Perform priority analysis for infiltration rehabilitation plan based on applicable rehabilitation method, material, and costs.

3. Perform analysis for inflow rehabilitation plan based on applicable rehabilitation method, material and costs.

4. Develop recommendations for rehabilitation of both public and private I/I sources in priority order, cost estimates by individual rehabilitation type, and estimated I/I reduction as a result of the recommendations.

Two copies of the Leon River and Little Elm Basins Wastewater Assessment report shall be submitted to the City.

V. Hydraulic Model Support

A. Hydraulic Model Support: Engineer built a model of the wastewater system and calibrated the model for both dry and wet weather under the SECAP agreement and submitted it to the City. Engineer will provide assistance and support as requested by the City for the hydraulic model. This service will be billed on a time and material basis for up to total cost of $12,000.

VI. Cleanout Cap Replacement (Optional)

A. *Cleanout Cap Replacement:* During smoke testing, Engineer's field crew will replace plastic cleanout caps for cleanouts identified as missing/broken cap. Caps shall be provided by the City at the beginning of smoke testing to ensure Engineer is using City approved caps. This service will be billed on a unit basis for up 420 cleanout cap replacements.

EXHIBIT B
PRICING

Pricing for the Leon River and Little Elm Basins Wastewater Assessment reflects field services, analysis, and rehabilitation/repair/replace recommendations.

Pricing Terms for Invoicing: Lump Sum, Unit Costs, and Time and Materials

Not-To-Exceed Total Cost: $1,473,861.00

	Service	Quantity	Unit	Unit Price	Total Cost
I.	**Project Management and Administration**	1	LS	$47,915.00	$47,915.00
II.	**Condition Assessment**				
	Manhole Inspections	1,450	MH	$165.00	$239,250.00
	Public Relations and Notifications	420,000	LF	$0.09	$37,800.00
	Smoke Testing	420,000	LF	$0.56	$235,200.00
	Dyed Water Flooding	18	EA	$539.00	$9,702.00
	Cleaning and CCTV Inspection[1/]	1	LS	$561,543.00	$561,543.00
	TV Video Review	84,000	LF	$0.39	$32,760.00
	Subtotal				*$1,116,255.00*
III.	**Data Management**	1	LS	$80,187.00	$80,187.00
IV.	**Asset Management**				
	Source Defect Analysis	1	LS	$66,516.00	$66,516.00
	Condition Assessment Analysis	1	LS	$83,010.00	$83,010.00
	Assessment Recommendations and Report	1	LS	$65,878.00	$65,878.00
	Subtotal				*$215,404.00*
V.	**Hydraulic Model Support**	1	TM	$12,000.00	$12,000.00
VI.	**Cleanout Cap Replacement[2/]**	420	EA	$5.00	$2,100.00
	Total				**$1,473,861.00**

1/Task to be performed by sub-consultant
2/ Optional item

Hourly Rate Schedule

Classification		2022 Rates*
PD	Project Director	$291.50 - $258.00
SPM	Senior Project Manager	$231.00 - $198.00
PM	Project Manager	$189.00 - $156.00
SPE	Senior Project Engineer	$216.00 - $183.00
PE	Project Engineer	$173.00 - $140.00
EIT	Engineer Intern	$162.00 - $130.00

Notes

- The Hourly Rate Schedule is valid until December 31, 2022. Following that date, rates may be subject to annual adjustments due to salary increases.
- Subconsultant cost if required shall be cost plus a 10 percent markup.
- Other direct expenses will be invoice at actual cost.

EXHIBIT C
PROPOSED SCHEDULE

Proposed schedule for the Leon River and Little Elm Basins Wastewater Assessment is 365 days from kickoff meeting to final report delivery.

Task	Timeline
Project Management and Administration	June 2022 – June 2023
Kickoff Meeting	June 2022
Condition Assessment	June 2022 – April 2023
Manhole Inspections	June 2022 – April 2023
Public Relations and Notifications	June 2022 -November 2022
Smoke Testing	June 2022 -November 2022
Dyed Water Flooding	December 2022
Cleaning and CCTV Inspection	June 2022 -January 2023
TV Video Review	August 2022-March 2023
Data Management	June 2022 – June 2023
Asset Management	July 2022 – May 2023
Source Defect Analysis	July 2022-February 2023
Condition Assessment Analysis	August 2022-April 2023
Assessment Recommendations and Report	February 2023-May 2023
Draft Report Delivery	May 2023
Final Report Delivery	June 2023

EXHIBIT D
PROJECT MAP