

 <p>CITY OF ST. CHARLES ILLINOIS • 1834</p>	<b>AGENDA ITEM EXECUTIVE SUMMARY</b>		Agenda Item number: 5.L
	Title:	<b>Recommendation to Approve a Resolution Awarding the Capacity, Management, Operations and Maintenance Plan (CMOM) Phase II Sewer System Evaluation Survey of Sub Basin WOR to RJN Engineering</b>	
	Presenter:	Tim Wilson	
<b>Meeting:</b> Government Services Committee		<b>Date:</b> July 24, 2023	
<b>Proposed Cost:</b> \$ 128,868.70		<b>Budgeted Amount:</b> \$130,000	<b>Not Budgeted:</b> <input type="checkbox"/>
<b>TIF District:</b> None			
<p><b>Executive Summary</b> (if not budgeted, please explain):</p> <p>Last fall the City awarded a contract to RJN Engineering for sanitary sewer system manhole inspection and smoke testing. RJN was the only contractor to provide the City with a price after several no bid attempts. In the current contract, the City has the right to extend or add to the scope of services. RJN has successfully completed all the work awarded last year. Staff is recommending a contract extension to award work for this coming fall.</p> <p>Phase 2 of this contract will include the review of the flow monitoring data conducted last fall and spring, and the cost is comparable to other Sub basin work that has been completed in previous years. City Staff and RJN Engineering team will determine infiltration and inflow areas of the City that need further investigation.</p> <p>RJN will provide the following scope of work: smoke testing, manhole inspections, televising, line surveying, GPS data collection and final reports. All of the data collected in Phase 2 will help in the design of Phase 3 rehab work that is planned to occur in the construction season of 2024.</p> <p>Last year’s Phase 2 smoke testing included a very successful public outreach plan. The CMOM Public Communication Plan is our proactive approach in communication with the public. We will be using this plan again to help keep the public informed on upcoming work.</p> <p>The Northern Sub basin is identified on the map included in the Agreement packet. This Sub basin is bordered by the following area: Fox Glen to the north, Main Street to the south, Fox Chase to the east and IL Rte. 25 to the west.</p>			
<b>Attachments</b> (please list):			
* Sub basin Northern - Phase 2 Map			
<b>Recommendation/Suggested Action</b> (briefly explain):			
Recommendation to approve a Resolution awarding the CMOM Phase II Sewer System Evaluation Survey of Sub basin Northern to RJN Engineering in the amount of \$128,868.70.			



June 23, 2023

Mr. Matt Wilson  
Public Works Division Manager – Environmental Services  
City of St. Charles  
2 East Main Street  
St. Charles, Illinois 60174

Subject: Proposal for Professional Engineering Services  
2023 Northern Basins SSES

Dear Mr. Wilson:

RJN Group, Inc. is pleased to submit this proposal to the City of St. Charles for the completion of important Sanitary Sewer Evaluation Survey (SSES) Services. Performing periodic inspections and testing of the collection system is a best practice, and a key component of a CMOM program.

We hope that, upon review of our proposal, you will find our **engineering-led approach** and experience to be best suited for the completion of this project.

RJN, established in 1975, is a professional engineering consulting firm focused on providing innovative engineering solutions and field services. With over 90% of our clients being municipalities and public utilities, and over 85% of our work focused on sewer collection systems, we are uniquely qualified for this project.

### **Key Project Goals and Objectives**

The primary goal of this project is to find defects in the sanitary collection system, locate sources of inflow and infiltration (I/I) entering the system, and to provide rehabilitation recommendations for the City to implement in a sewer rehabilitation program.

There are four main components of this proposal:

- Complete manhole inspection services (in Northern basins 1, 3, 4, and 5 - approximately 297 manholes total)
- Complete smoke testing services (in Northern basins 3, 4, 5 - approximately 54,138 LF in total)
- Provide an engineering analysis of the testing and inspection results.
- Provide real-time access to the data on Clarity®

A summary of each task is provided below, and our detailed scope of services is provided in Exhibit A.

### ***Manhole Inspections***

As with smoke testing, RJN's manhole inspection procedures have been fine-tuned to collect the right amount of data, information, and photographs to accomplish all the City's goals for the program. Using 2-person crews, data is collected electronically to document all the important details of each structure inspected. RJN uses remote cameras to take photos of all defects and key parts of the manhole. Detailed inspection reports are available on Clarity, with all data provided to the City for GIS integration.

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***Final Deliverable: A summary and detailed list of all manholes inspected, Clarity data access, collected data for GIS mapping updates, and prioritized, comprehensive rehabilitation recommendations for each manhole inspected.***

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### ***Smoke Testing***

RJN has led the industry in establishing best practices for smoke testing services. RJN's standard procedures for smoke testing include 3- or 4-person teams, smoke candles, high-pressure dual blowers with a maximum of 600 feet of pipe between blowers, and sandbagging or plugging each setup (up to 12" diameter). We found that these best practices, coupled with GPS mapping, photos, and electronic reporting of defects represent the "sweet spot" of level of service and cost to the City. All defects will be uploaded daily on Clarity.

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***Final Deliverable: A detailed list of all identified defects, Clarity data access, GIS of data collected, and recommendations for follow-up remediation or inspections.***

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### ***Recommendations Reporting***

Inflow and infiltration reduction is an important goal for the City. Following manhole inspections and smoke testing, the technical report provided to the City will provide comprehensive recommendations for building a prioritized approach to flow reduction and maintaining system integrity.

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***Final Deliverable: An SSES report outlining defects identified, rehabilitation and remediation recommendations for the system to reduce inflow and infiltration, and recommendations for any additional inspections.***

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### ***Clarity***

Clarity, RJN's online data management hub, provides clients secure access to their data as it is collected. Clarity is designed for utility owners and managers. It puts timely data and sophisticated

analytics in your hands, allowing you to quickly make decisions and act. Most importantly, all data is easily understood during a project. [Click here](#) to learn more about Clarity.

### Following this project, the City will have:

- Quality assurance/quality control (QA/QC) checked manhole inspection and smoke testing data.
- Spatial information on each observation collected during inspections
- An engineering report discussing results and analysis of the identified defects and I/I
- Recommendations for manhole rehabilitation and follow-up studies, including sewer televising, dyed water flooding, and private sector inspections.
- Recommendations for high priority private and public sector mitigation measures.

### Price and Schedule Summary

#### Price

This project will be invoiced on a Unit Price and Percent Complete basis for a total not-to-exceed fee of **\$128,868.70**.

#### Schedule

RJN is prepared to begin work on this project upon a notice to proceed. Provide an agreement is reached by July 31, 2023 RJN commits to the following schedule:

- Manhole inspections can be completed anytime there is not significant snow cover and will be finished the end of February 2024.
- Smoke testing requires dry conditions for completion and will be completed by the end of October 2023, weather permitting.
- Final reports and deliverables will be provided by the end of April 2024.

### Exhibits

The following exhibits are provided as attachments to this proposal.

- Exhibit A – Scope of Services
- Exhibit B – Pricing
- Exhibit C – City Map of Northern Basins

We look forward to working with the City on this important project.

It is our pleasure to submit this proposal to you. Please feel free to contact Lewis at (630) 414-3437 if you would like to discuss this proposal or have any questions.

Sincerely,



Lewis Chellberg  
Project Manager



Thomas Romza, PE  
Regional Manager



# EXHIBIT A

## SCOPE OF SERVICES

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RJN is proposing the following scope of services for 2023 Northern Basins SSES for the City of St. Charles, Illinois.

### 1. Manhole Inspections

- a. Provide equipment and personnel as necessary for manhole inspections.
- b. Complete pole-mounted camera inspections for manholes as outlined. Collect the following attribute data, as it can be determined:
  - i. GPS locate of manhole,
  - ii. Manhole diameter and material,
  - iii. Connecting sewer diameters, invert measurements, and flow direction.
- c. Identify and document manhole condition, including:
  - i. Direct evidence of I/I,
  - ii. Open pickholes in lid,
  - iii. Cover, frame, adjusting ring, and seal condition, including needed adjustments,
  - iv. Cone, wall, trough, bench, and pipe condition and defects.
- d. Take the minimum digital photographs at each manhole structure of:
  - i. Surrounding area,
  - ii. Manhole cover,
  - iii. Topside - looking down,
  - iv. Manhole frame,
  - v. All pipe connections,
  - vi. Any major manhole defects.
- e. Provide data analysis as follows:
  - i. Compile field data and develop complete list of defects,
  - ii. Map results in GIS,
  - iii. Assign an estimated flow to each defect,
  - iv. Determine an appropriate rehabilitation method for each manhole and estimate an associated cost.
- f. Inspect Manholes within Northern basins 1, 3, 4, and 5 (approximately 297 manholes total).
- g. Post data, including photos, to Clarity and provide access to City staff for viewing.

### 2. Smoke Testing

- a. City to prepare and mail smoke testing notification letters.
- b. City to prepare and print door hangers for RJN crews to distribute prior to smoke testing.
- c. Notify the local fire and police department of planned smoke testing activities, including daily updates. Answer resident/owner field questions.
- d. Provide equipment and smoke necessary for smoke testing.

- e. During smoke testing, erect temporary smoke testing signs near the testing area.
- f. Utilize electronic data collection equipment for smoke testing.
- g. Smoke test the sanitary sewers within Northern basins 3, 4, 5, and (approximately 54,138 LF in total).
- h. Document GPS location of each identified defect and take at least one digital picture of each defect.
- i. Post data, including photos, on Clarity and provide access to City staff.

### 3. Data Analysis and Reporting

- a. Data Analysis
  - i. Compile field data and develop complete list of defects,
  - ii. QA/QC field collections,
  - iii. Assign an estimated flow to each defect and an estimated cost for rehabilitation.
- b. Memo Report
  - i. Provide a summary of work completed & GIS map of identified defects,
  - ii. List defects prioritized by severity, cost effectiveness, and importance for rehabilitation,
  - iii. Propose recommendations for rehabilitation for various types of rehabilitation,
  - iv. Propose recommendations for follow up inspections that may be needed, such as dye flooding.
- c. Submittals
  - i. Submit a pdf of an initial draft report for review,
  - ii. Address City comments and submit up to three color copies of final report,
  - iii. Provide one digital copy of final report files, data, video, and photos.

### 4. Project Management

- a. Provide project management services including invoicing, scope, schedule, fee tracking, and closeout services.
- b. Provide monthly updates to City staff through the duration of the project.
- c. Meet with City staff as necessary to discuss progress of the project.

### Items Requested from the City

1. Updated GIS geodatabases, shape files, or CADD atlases for the City's sanitary and storm sewer collections systems.
2. Access to sanitary sewer structures for the work. Assistance locating or opening seized/buried manholes as required.
3. Assistance with traffic control in high traffic areas, as necessary.
4. Assistance from City with notification of residents and businesses by mailing of smoke testing letters and talking with businesses before smoke testing.



## EXHIBIT B PRICING

Pricing for the 2023 Northern Basins SSES is as follows:

**Pricing Terms for Invoicing:** Time & Materials and Unit Price

**Not-To-Exceed Total Cost:** \$128,868.70

### Cost Schedule

Task 01 (Manholes)	Type	Quantity	Unit	Cost /Unit	Subtotal
Manhole Inspections	Unit Price	297	MH	\$130	\$38,610.00
I/I Analysis Reporting	T&M	1	-	\$10,000	\$10,000.00
Project Management Services	T&M	1	-	\$4,000	\$4,000.00
<b>Task 01 Fee</b>					<b>\$52,610.00</b>

Task 02 (Smoke)	Type	Quantity	Unit	Cost /Unit	Subtotal
Smoke Testing	Unit Price	54,138	ft	\$1.15	\$62,258.70
I/I Analysis Reporting	T&M	1	-	\$10,000	\$10,000.00
Project Management Services	T&M	1	-	\$4,000	\$4,000.00
<b>Task 02 Fee</b>					<b>\$76,258.70</b>

<b>TOTAL FEE</b>					<b>\$128,868.70</b>
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### Proposal Option

This Proposal can be amended to include additional work upon joint approval by the City and RJN.

## Hourly Rate Schedule

RJN's hourly rate schedule is as follows:

Classification		Rates*
PD	Project Director	\$250.00
SPM	Senior Project Manager	\$215.00
PM	Project Manager	\$185.00
SCM	Senior Construction Manager	\$175.00
CM	Construction Manager	\$155.00
SPE	Senior Project Engineer	\$155.00
PE	Project Engineer	\$140.00
CO	Construction Observer	\$135.00
EI	Engineer I	\$120.00
GSS	GIS Specialist	\$120.00
SDA	Senior Data Analyst	\$120.00
GIS	GIS Analyst	\$105.00
FM	Field Manager	\$105.00
DA	Data Analyst	\$100.00
FS	Field Supervisor	\$95.00
FT	Field Technician	\$90.00
AS	Administrative Support	\$95.00

### Notes:

- The Hourly Rate Schedule is valid through April 2024.

### Legend

- FLOW MONITORS
- ★ LIFT STATION
- MANHOLE

#### Sanitary Mains

<all other values>

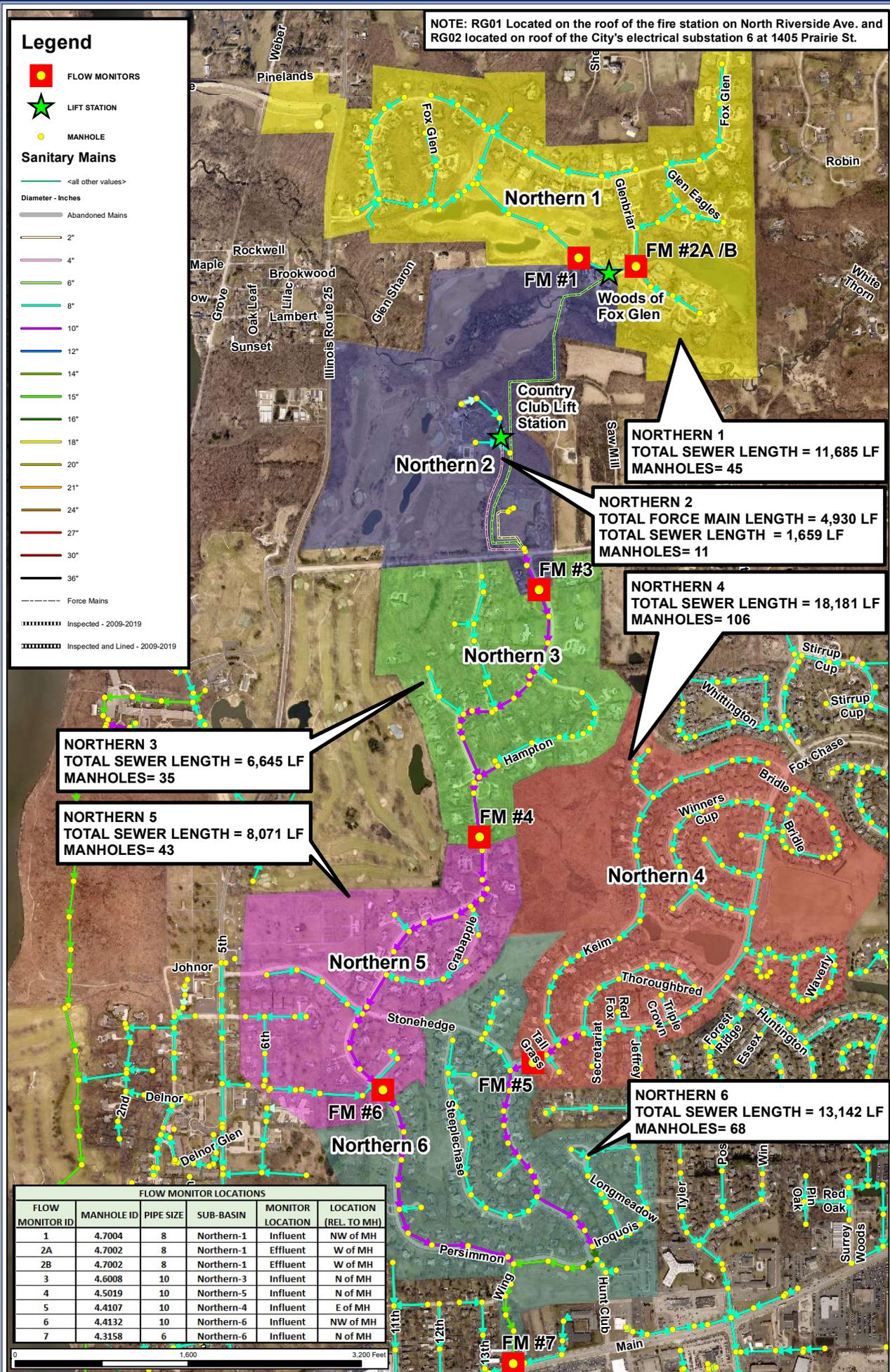
Diameter - Inches

- Abandoned Mains
- 2"
- 4"
- 6"
- 8"
- 10"
- 12"
- 14"
- 15"
- 16"
- 18"
- 20"
- 21"
- 24"
- 27"
- 30"
- 36"

Force Mains

- Inspected - 2009-2019
- Inspected and Lined - 2009-2019

NOTE: RG01 Located on the roof of the fire station on North Riverside Ave. and RG02 located on roof of the City's electrical substation 6 at 1405 Prairie St.



**NORTHERN 3**  
TOTAL SEWER LENGTH = 6,645 LF  
MANHOLES= 35

**NORTHERN 5**  
TOTAL SEWER LENGTH = 8,071 LF  
MANHOLES= 43

**NORTHERN 1**  
TOTAL SEWER LENGTH = 11,685 LF  
MANHOLES= 45

**NORTHERN 2**  
TOTAL FORCE MAIN LENGTH = 4,930 LF  
TOTAL SEWER LENGTH = 1,659 LF  
MANHOLES= 11

**NORTHERN 4**  
TOTAL SEWER LENGTH = 18,181 LF  
MANHOLES= 106

**NORTHERN 6**  
TOTAL SEWER LENGTH = 13,142 LF  
MANHOLES= 68

FLOW MONITOR LOCATIONS						
FLOW MONITOR ID	MANHOLE ID	PIPE SIZE	SUB-BASIN	MONITOR LOCATION	LOCATION (REL. TO MH)	
1	4.7004	8	Northern-1	Influent	NW of MH	
2A	4.7002	8	Northern-1	Effluent	W of MH	
2B	4.7002	8	Northern-1	Effluent	W of MH	
3	4.6008	10	Northern-3	Influent	N of MH	
4	4.5019	10	Northern-5	Influent	N of MH	
5	4.4107	10	Northern-4	Influent	E of MH	
6	4.4132	10	Northern-6	Influent	NW of MH	
7	4.3158	6	Northern-6	Influent	N of MH	