

**AGENDA ITEM EXECUTIVE SUMMARY**

Agenda Item number: 5.h

Title:

Recommendation to Award CMOM Phase II Sewer System Evaluation Survey of SCO2 to Engineering Enterprises Inc.

Presenter:

Tim Wilson

Meeting: Government Services Committee

Date: June 26, 2017

Proposed Cost: \$117,140

Budgeted Amount: \$120,000

Not Budgeted: ☐**Executive Summary** (*if not budgeted please explain*):

The CMOM Public Communication Plan was presented at the last Government Services Committee meeting. As part of the presentation we discussed in detail the work to be completed during the Phase 2 CMOM and staff's proactive approach in communication with the public.

The proposed Phase 2 contract will include the review of the flow monitoring data conducted last fall and spring. Staff and Engineering Enterprises Inc. will determine infiltration and inflow areas or city blocks that need further investigation. A contractor will be selected to provide the following scope of work: smoke testing, manhole inspections, televising, line surveying, GPS data collection and final reports. All of the data collected will help in the design of Phase 3 rehab work that is planned to occur in the construction season of 2018.

As a quick reminder, Sub-basin SC02 was selected as a starting point due to the problematic history in the 10th Street area. This Sub-basin is located is bordered by the following area: Prairie Street to the north and Gray Street to the south, the Fox River to the east and Randall Road to the west.

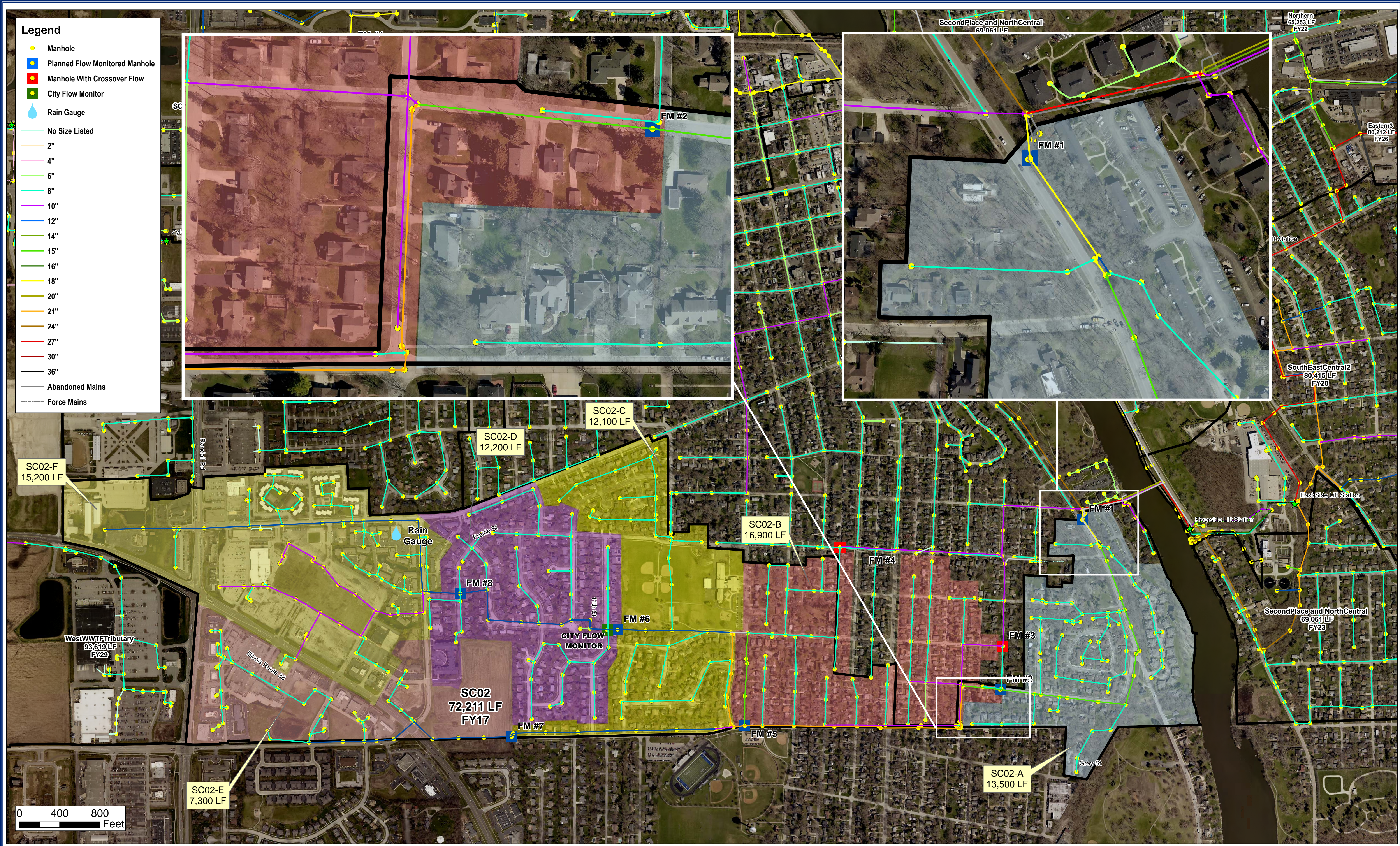
**Attachments** (*please list*):

\* SCO2 Area Map \* SCO2 Agreement

**Recommendation/Suggested Action** (*briefly explain*):

Recommendation to award CMOM Phase II Sewer System Evaluation Survey of SCO2 to Engineering Enterprises Inc. for the not to exceed amount of \$117,140.





Legend

Manhole

Planned Flow Monitored Manhole

Manhole With Crossover Flow

City Flow Monitor

Rain Gauge

No Size Listed

2"

4"

6"

8"

10"

12"

14"

15"

16"

18"

20"

21"

24"

27"

30"

36"

Abandoned Mains

Force Mains





*Engineering Enterprises, Inc.*

June 13, 2017

Mr. Tim Wilson  
Public Works Manager - Environmental Services  
City of St. Charles  
Two East Main Street  
St. Charles, IL 60174

**Re: *Basin SC02 SSES***  
***City of St. Charles, Kane & DuPage Cos., IL***

Dear Mr. Wilson:

In accordance with your request, enclosed for your review and consideration is our proposed agreement for the Basin SC02 Phase 2 Sewer System Evaluation Survey (SSES). The Phase 2 SSES work is prioritized based off the results of the flow monitoring completed in Basin SC02 during the autumn of 2016 and the spring/early summer of 2017. The SSES fieldwork and analysis is completed to identify the defects contributing to excessive inflow and infiltration (I/I) throughout the basin and then define a cost-effective implementation plan for correcting the defects.

Our agreement includes dual blower smoke testing for an estimated total of 70,098 lineal feet of sanitary sewer and Level-2 Manhole Assessment and Certification Program (MACP) inspections for an estimated 339 manholes within Subbasins SC02-A, SC02-B, SC02-C, SC02-D and SC02-F. The defects found during smoke testing will be documented and all pictures, GIS locates, and other findings will be made available to the City. The manhole inspections will be completed by a camera which will be able to provide a complete 360-degree view of the manhole. Defects found in the manhole inspections will be documented and all findings and images will be made available to the City. In addition to smoke testing and manhole inspections, the purpose primarily being to locate rainfall derived infiltration and inflow (RDII), our contract also includes a review of sanitary sewer televising videos previously captured within subbasins SC02-B, SC02-D, SC02-E, and SC02-F. The purpose of reviewing the televising videos is to locate sources of constant excessive infiltration within the subbasins.

The agreement includes a detailed scope of services, estimate of level of effort and associated cost and schedule for the project. We are proposing two project meetings, a project initiation

meeting and a progress review meeting, as part of the project. We also will work with the City to implement the SSES Communication Plan that was recently developed. Additionally, our subcontractor, Midwest Water Group, offers a call center for resident questions as part of their smoke testing services.

Assuming agreement approval will be obtained by early July, we propose to conduct the project initiation meeting in mid-July. We are proposing to conduct the smoke testing and manhole inspections in August and September, respectively. The review of the televised data will be completed after the field work. Following the analysis of the field work results and then the completion of the financial analysis for sewer rehabilitation, we propose to meet in mid-November to review our findings. After the progress review meeting, we will develop the draft report, answer questions while the City reviews the draft report and then finalize the report by the third week of January 2018.

We look forward to continuing our outstanding partnership with the City and look forward to working with you and members of your staff on this project. If you have any questions or require any additional information, please do not hesitate to contact me.

Respectfully submitted,

ENGINEERING ENTERPRISES, INC.



Jeffrey W. Freeman, P.E., CFM, LEED AP  
Vice President

JWF/clv

Enclosures

pc: Mike Burnett – Wastewater Division Manager (Via E-mail)  
Dave Todd – Environmental Services Assistant Division Manager (Via E-mail)  
PGW, TWT, STD, DMT, CLV – EEI (Via E-mail)



**AGREEMENT FOR CONSULTING ENGINEERING SERVICES FOR  
SUBBASIN WOR\_WEST FLOW MONITORING**

This Agreement, made this \_\_\_\_\_ day of \_\_\_\_\_, 2017 by and between the City of St. Charles, Kane and DuPage Counties, Illinois, a municipal corporation of the State of Illinois (hereinafter referred to as the "CITY") and Engineering Enterprises, Inc. of 52 Wheeler Road, Sugar Grove, Illinois, 60554 (hereinafter referred to as the "ENGINEER").

In consideration of the mutual covenants and agreements contained in this Agreement, the CITY and the ENGINEER agree, covenant and bind themselves as follows:

1. Services: ENGINEER agrees to perform for the CITY the Services defined within Attachment A.
2. Direction: The Public Works Manager - Environmental Services, or his written designee, shall act as the CITY'S representative with respect to the Services to be provided by the ENGINEER under this Agreement and shall transmit instructions and receive information with respect to the Consulting Engineering Services.
3. Compensation: The work items, estimated staff time, and projected fees for each work item are summarized within Attachment B. Based on this computation, the CITY agrees to pay the ENGINEER for providing the Services set forth herein a fixed fee amount of \$117,140.
4. Term: The term of this Agreement shall be active through February 28, 2018 unless otherwise extended through written confirmation by both parties. The work items and phases shall be completed in accordance with the schedule defined within Attachment C.
5. Payment: Engineer shall invoice the CITY on a monthly basis for Services performed and any costs and expenses incurred during the previous thirty (30) day period. The CITY shall pay the ENGINEER within thirty (30) days of receipt of said invoice.
6. Termination: This Agreement may be terminated upon fourteen (14) days written notice of either party. In the event of termination, the ENGINEER shall prepare a final invoice and be due compensation calculated as described in paragraph 3 for all costs incurred through the date of termination.
7. Documents: All related writings, notes, documents, information, files, etc., created, compiled, prepared and/or obtained by the ENGINEER on behalf of the CITY for the Services provided herein shall be used solely for the intended project.
8. Notices: All notices given pursuant to this Agreement shall be sent Certified Mail, postage prepaid, to the parties at the following addresses:



The CITY:

City of St. Charles  
Two East Main Street  
St. Charles, IL 60174  
Attn: Tim Wilson  
Public Works Manager -  
Environmental Services

The ENGINEER:

Engineering Enterprises, Inc.  
52 Wheeler Road  
Sugar Grove, IL 60554  
Attn: Jeffrey W. Freeman, P.E. CFM, LEED AP  
Vice President

9. Waiver: The failure of either party hereto, at any time, to insist upon performance or observation of any term, covenant, agreement or condition contained herein shall not in any manner be constructed as a waiver of any right to enforce any term, covenant, agreement or condition hereto contained.
10. Amendment: No purported oral amendment, change or alteration hereto shall be allowed. Any amendment hereto shall be in writing by the governing body of the CITY and signed by the ENGINEER.
11. Succession: This Agreement shall ensure to the benefit of the parties hereto, their heirs, successors and assigns.

IN WITNESS WHEREOF, we have hereunto signed our names the day and year first above written.

CITY OF ST. CHARLES

ENGINEERING ENTERPRISES, INC.:

\_\_\_\_\_  
Mayor

  
\_\_\_\_\_  
Vice President

ATTEST:

ATTEST:

\_\_\_\_\_  
Title: \_\_\_\_\_

  
\_\_\_\_\_  
Administrative Assistant



## **ATTACHMENT A – SCOPE OF SERVICES BASIN SC02 SSES**

City of St. Charles, Kane and DuPage Cos., IL

### **Introduction**

In 2016, the City of St. Charles embarked on the 15-year Inflow and Infiltration Reduction Program (IIRP) as defined in the City's February 2016 CMOM plan. Basin SC02 was determined to be the first basin to initiate the three phase IIRP process. Phase 1 Flow Monitoring was completed in the SC02 basin (see attached exhibit depicting the location and subbasins within SC02) during the autumn of 2016 and the spring/early summer of 2017. The flow monitoring outlined various inflow and infiltration issues within Basin SC02. Subbasins SC02-A, SC02-B, SC02-C, SC02-D, and SC02-F exhibit signs of excessive rainfall derived infiltration and inflow (RDII) and Subbasins SC02-B, SC02-D, SC02-E, and SC02-F exhibit signs of excessive constant infiltration.

After determining the subbasins with excessive I/I during the Phase 1 Flow Monitoring process, the Phase 2 Sewer System Evaluation Survey (SSES) is conducted within those basins to locate the defects. The scope and cost of the Basin SC02 SSES work includes dual blower smoke testing and level-2 manhole inspections for an estimated 70,098 LF of mains and an estimated 339 manholes in Subbasins SC02-A, SC02-B, SC02-C, SC02-D, and SC02-F. The smoke testing and manhole inspections will be conducted to locate sources of RDII. The SSES work also includes a review of the existing televising data for subbasins SC02-B, SC02-D, SC02-E, and SC02-F. The review of televising data will be to identify and document sources of infiltration which can be used to prioritize rehabilitation efforts.

Prior to smoke testing, it is recommended the City alert those who will be affected by the activities of the upcoming work. Those who will be affected by smoke testing include residents and business owners in the study area, the police and fire department, schools, and any others who will be in, or around, the smoke testing area. EEI will work with City Staff to make any modifications to the City's SSES Communication Plan the City sees fit. EEI's SSES subcontractor, Midwest Water Group, will be responsible for placing door hangers prior to smoke testing, removing door hangers after smoke testing, and coordinating the setup and removal of road signs during smoke testing. The subcontractor will also have a call center available to answer residential questions. The City will be responsible for sending out mailers, providing any printed media (excluding the door hangers), updating the City's website, updating social media, and answering any questions from the residents that cannot be answered by the subcontractor.

All cost and schedule decisions are based on EEI's best knowledge of the study area to-date. A project initiation meeting will be conducted prior to the beginning of the SSES work to outline all necessary efforts and discuss anticipated challenges and solutions. This initiation meeting will include representatives from the City, as well as any other entities, such as the police and fire department, that the City designates as prudent to invite.

A financial analysis of the cost projected to fix the defects found during the SSES work will also be provided for the City. The financial analysis, along with a complete list of defects found during the SSES work, will be reviewed with the City during a progress review meeting. A summary SSES Report will be provided for the City and will contain an outline of all defects and findings along with the corresponding financial analysis for the defects. A GIS file containing the



location of the defects, as well as the video documentation footage, will also be made available to the City.

The proposed work items for this project are as follows:

**PROJECT FACILITATION & MEETINGS:**

- 0.1 Project Administration
- 0.2 Project Initiation and Progress Meeting (2 Total Meetings)

**FLOW MONITORING:**

- 1.1 SSES Advance Communication With Subbasin Residents & Online
- 1.2 Conduct Smoke Testing Within Subbasins A, B, C, D & F
- 1.3 Conduct Level 2 Manhole Inspections Within Subbasins A, B, C, D & F
- 1.4 Review Existing Televising Videos Within Subbasins B, D, E & F
- 1.5 Analyze Smoke Testing, Manhole Inspection, and Televising Results
- 1.6 Conduct Financial Analysis For Sewer Rehabilitation

**REPORT:**

- 2.1 Prepare SSES Summary Report
- 2.2 City Draft Report Review
- 2.3 Finalize Report

**Additional Services**

The above scope summarizes the work items that will be completed for this contract. Additional work items, including additional meetings beyond the project initiation meeting defined in the above scope, shall be considered outside the scope of the base contract and will be billed in accordance with the Standard Schedule of Charges.







Attachment B:  
ESTIMATE OF LEVEL OF EFFORT AND ASSOCIATED COST FOR PROFESSIONAL ENGINEERING SERVICES  
BASIN SC02 PHASE 2 (SEWER SYSTEM EVALUATION SURVEY - SSES) ANALYSIS  
INFLOW AND INFILTRATION REDUCTION PROGRAM  
CITY OF ST. CHARLES, KANE AND DUPAGE COS., IL

WORK ITEM NO.	WORK ITEM	ENTITY:	EEI										SUB- CONSULTANT	WORK ITEM HOUR SUMM.	COST PER ITEM
		PROJECT ROLE:	PRINCIPAL	SENIOR PROJECT MANAGER	PROJECT ENGINEER	SENIOR PROJECT TECHN. I	PROJECT TECHN.	SURVEYING MANAGER	SENIOR PROJECT SURVEYOR II	SENIOR PROJECT SURVEYOR II*	SURVEYING INTERN*	ADMIN.			
		HOURLY RATE:													
			\$191	\$185	\$133	\$133	\$121	\$168	\$155	\$196	\$82	\$80			
PROJECT FACILITATION & MEETINGS															
0.1	Project Administration		1	4										5	\$931
0.2	Project Initiation & Progress Meeting (2 Meetings Total)		6	10	8							1		25	\$4,140
Project Facilitation Subtotal:			7	14	8	-	-	-	-	-	-	1	-	30	\$5,071
SEWER SYSTEM EVALUATION SURVEY (SSES) FIELD WORK AND ANALYSIS															
1.1	SSES Advance Communication With Subbasin Residents & Online		1	4	12									17	\$2,527
1.2	Conduct Smoke Testing Within Subbasins A, B, C, D & F		1	1	16							\$40,000		18	\$42,504
1.3	Conduct Level 2 Manhole Inspections Within Subbasins A, B, C, D & F		1	1	2							\$35,595		4	\$36,237
1.4	Review Existing Televising Videos Within Subbasins B, D, E & F		4	6	30									40	\$5,864
1.5	Analyze Smoke Testing, Manhole Inspection, and Televising Results		4	6	24									34	\$5,066
1.6	Conduct Financial Analysis For Sewer Rehabilitation		2	6	24									32	\$4,684
SSES Field Work and Analysis Subtotal:			13	24	108	-	-	-	-	-	-	-	\$75,595	145	\$96,882
REPORT															
2.1	Prepare SSES Summary Report		2	8	60	16						2		88	\$12,132
2.2	City Draft Report Review		1	2										3	\$561
2.3	Finalize Report		2	4	8							2		16	\$2,346
Report Subtotal:			5	14	68	16	-	-	-	-	-	4	-	107	\$15,039
PROJECT TOTAL:			25	52	184	16	-	-	-	-	-	5	\$75,595	282	\$116,992

Notes:  
Assumes 1 Man Field Crew with RTS or GPS

DIRECT EXPENSES	
Mileage =	\$50
Printing =	\$100
<b>DIRECT EXPENSES =</b>	<b>\$150</b>

LABOR EXPENSES	
Engineering Expenses =	\$38,867
Drafting Expenses =	\$2,128
Surveying Expenses =	\$0
Administrative Expenses =	\$400
Subconsultant Expenses =	\$75,595
<b>TOTAL LABOR EXPENSES =</b>	<b>\$116,990</b>

**TOTAL CONTRACT COSTS = \$117,140**








Attachment C:  
SCHEDULE

**BASIN SC02 PHASE 2 (SEWER SYSTEM EVALUATION SURVEY - SSES) ANALYSIS**  
**INFLOW AND INFILTRATION REDUCTION PROGRAM**  
CITY OF ST. CHARLES, KANE AND DUPAGE COS., IL

WORK ITEM NO.	WORK ITEM	Year:		2017																								2018											
		Month:	July					August				September				October				November				December				January					February						
		Week Starting:	3	10	17	24	31	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26		
PROJECT FACILITATION & MEETINGS																																							
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G:\Public\St. Charles\2017\SR1702 SC02 Phase 2 SSES\PSA\SR1702 Attachment C - Schedule.xlsx\All 2017 Work Items

Legend	
	Project Administration Work Item(s)
	Meeting(s) & Field Visits
	Field & Analysis Work
	Report Development
	City Review





## Standard Schedule of Charges

January 1, 2017

EMPLOYEE DESIGNATION	CLASSIFICATION	HOURLY RATE
Senior Principal	E-4	\$196.00
Principal	E-3	\$191.00
Senior Project Manager	E-2	\$185.00
Project Manager	E-1	\$168.00
Senior Project Engineer/Planner/Surveyor II	P-6	\$155.00
Senior Project Engineer/Planner/Surveyor I	P-5	\$145.00
Project Engineer/Planner/Surveyor	P-4	\$133.00
Senior Engineer/Planner/Surveyor	P-3	\$121.00
Engineer/Planner/Surveyor	P-2	\$111.00
Associate Engineer/Planner/Surveyor	P-1	\$100.00
Senior Project Technician II	T-6	\$145.00
Senior Project Technician I	T-5	\$133.00
Project Technician	T-4	\$121.00
Senior Technician	T-3	\$111.00
Technician	T-2	\$100.00
Associate Technician	T-1	\$ 87.00
Engineering/Land Surveying Intern	I-1	\$ 82.00
GIS Technician	G-1	\$ 67.00
Administrative Assistant	A-3	\$ 80.00

### CREW RATES, VEHICLES AND REPROGRAPHICS

1 Man Field Crew with Standard Survey Equipment	\$158.00
2 Man Field Crew with Standard Survey Equipment	\$247.00
1 Man Field Crew with RTS or GPS *	\$196.00
2 Man Field Crew with RTS or GPS *	\$284.00
Vehicle for Construction Observation	\$15.00
In-House Scanning and Reproduction	\$0.25/Sq. Ft. (Black & White) \$1.00/Sq. Ft. (Color)
Reimbursable Direct Costs & Services by Others	Cost + 10%

\*RTS = Robotic Total Station / GPS = Global Positioning System