Agenda Item Executive Summary

Item Name	Engineering Services Agreement with Engineering Enterprises, Inc. for Basin M-1 - M-7 Flow Monitoring Study	Committee or Board	Board

BUDGET IMPACT			
Amount:	$89,327	*Budgeted*	$800,000
List what fund	Sewer Fund		

EXECUTIVE SUMMARY

This contract is for flow monitoring of Basins M 1-7 which is the area contributary to the MWRD lift station at Devon & Berteau. This is the expanded area requested by Trustee Hopkins to review. Flow monitoring is Phase 1 of I/I reduction. Flow monitoring of this area will allow us to see what improvements we have made to reducing I/I where we lined the sewers and manholes and which areas we need to focus our attention on for future projects. We have been working with Engineering Enterprises, Inc. (EEI) on our sanitary sewer system rehabilitation and the MWRD issues so they are most familiar with this area.

ATTACHMENTS (PLEASE LIST)

Memo, Resolution, Agreement w/Attachments

ACTION REQUESTED

- ☐ For Discussion Only
- ☒ Resolution
- ☐ Ordinance
- ☒ Motion:

MOTION: I move the Village Board approve Resolution 2020 - _____, a Resolution Approving of the Agreement for Professional Engineering Services Between the Village of Bartlett and Engineering Enterprises, Inc.

Staff: Dan Dinges, Director of Public Works Date: 5/7/20

PUBLIC WORKS MEMORANDUM

DATE: May 7, 2020

TO: Paula Schumacher
Village Administrator

FROM: Dan Dinges, PE
Director of Public Works

SUBJECT: Engineering Enterprises Inc. Engineering Service Agreements:
Basins M1-M7 Phase 1 Flow Monitoring Study
Basins N-2, E2 & E3 Phase 1 Flow Monitoring Study
Basin N-1, E-1 & M-4 Phase 2 Sewer System Evaluation Survey Analysis

We have been working on improving the sanitary sewers throughout the Village for a few years now and I wanted to provide our approach relative to Infiltration and Inflow (I/I) reduction. Our approach to I/I reduction is typically through a three phase approach. In Phase 1, basins are broken into subbasins with a target sanitary sewer total length of 10,000 – 12,000 LF. It doesn't always work out to fit into that window, but we try to get as close to it as possible. Flow and rainfall monitoring are conducted in the subbasins. The flow and rainfall data is analyzed to determine which basins have excessive infiltration, inflow or both. Those subbasins that do not have either excessive infiltration or inflow do not require any additional study. Those basins that have high infiltration, inflow or both move on to Phase 2.

In the Phase 2 Sewer System Evaluation Study (SSES) field work is conducted to identify the sources of I/I. Smoke testing and manhole inspections are conducted to identify inflow sources. In some cases dye water flooding would be a follow up work item to pin down defects found during smoke testing. Infiltration sources can also be identified during manhole testing, but the main field work item utilized to identify infiltration sources is televising. Flow isolation studies also can help identify infiltration sources. Once the defects are located, a plan is developed to rehabilitate the sewer system network within the basin. The last phase of I/I reduction, Phase 3, is simply completing the rehabilitation of the defects found within Phase 2.

We have skipped Phase 1 in areas where we have clay pipe because we have already televised these areas and determined they are in need of sewer lining. In these areas, we have been lining the clay pipes and then going to Phase 2 to smoke test, manhole inspections, etc.

Based on the described approach, we recommend flow monitoring the Cook County basins as the first step. We have divided the "Northern Basins" into subbasins and have devised a flow monitoring plan for them. Please find attached the recommended flow monitoring plan for Basins M1 – M-7. We included the subbasins that have already made it through Phase 3 where the sewers and manholes are lined to determine what improvements have been made. If they still exhibit a decent amount of infiltration, then it seems like we could point to the services as being the remaining issue.

The second contract is for Phase 1 Flow Monitoring of Basins N-2, E-2 & E-3. An exhibit is attached that shows the area but it is generally located south of the ComEd ROW between Prospect Ave. and County Farm Rd. When we were investigating the options to bring the excess flow from the MWRD area to the Bittersweet WWTP we looked at utilizing the sanitary sewers in this area. We found that this area appears to have excessive I/I and did not have available capacity.

The third contract is for Phase 2 Sewer System Evaluation Survey Analysis for areas that we have already performed flow monitoring and/or lined the sewers. Basins N-1, E-1 & M-4 are shown in the attached exhibit. Basin M-4 is the area west of Oak Ave. & north of the railroad tracks. Basins N-1 & E-1 are located south of Devon and north of the Com Ed ROW. Once the Phase 2 analysis is completed we would plan to put together a Phase 3 – Rehabilitation program together based on the results of the Phase 2 report.

Our overall goal is to always have at least one of each Phase being worked on during a budget year. Each year we will determine where to start a new Phase 1 and then move to Phase 2 from the previous year's Phase 1, and move to Phase 3 from the previous year's Phase 2. The goal of the phased approach is to limit the amount of money spent during Phase 2 and Phase 3. If subbasins do not have excessive I/I, then why conduct smoke testing, manhole inspections and/or televising within them. This should allow us to reduce our costs while reducing I/I issues and sewer backups.

We recommend that the Village Board approve the three agreements with EEI.

MOTION: I move the Village Board approve Resolution 2020 - _____, a Resolution Approving of the Agreement for Professional Engineering Services Between the Village of Bartlett and Engineering Enterprises, Inc.

RESOLUTION 2020 - _____

A RESOLUTION APPROVING OF THE AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES BETWEEN THE VILLAGE OF BARTLETT AND ENGINEERING ENTERPRISES, INC. [BASINS M-1 – M-7]

BE IT RESOLVED by the President and Board of Trustees of the Village of Bartlett, Cook, DuPage and Kane Counties, Illinois, as follows:

SECTION ONE: The Agreement for Professional Engineering Services between the Village of Bartlett and Engineering Enterprises, Inc. dated May 19, 2020, (the "Agreement"), a copy of which is appended hereto and expressly incorporated herein by this reference, is hereby approved.

SECTION TWO: That the Village President and the Village Clerk are hereby authorized and directed to sign and attest, respectively, the Agreement on behalf of the Village of Bartlett.

SECTION THREE: **SEVERABILITY.** The various provisions of this Resolution are to be considered as severable, and of any part or portion of this Resolution shall be held invalid by any Court of competent jurisdiction, such decision shall not affect the validity of the remaining provisions of this Resolution.

SECTION FOUR: **REPEAL OF PRIOR RESOLUTIONS.** All prior Ordinances and Resolutions in conflict or inconsistent herewith are hereby expressly repealed only to the extent of such conflict or inconsistency.

SECTION FIVE: **EFFECTIVE DATE.** This Resolution shall be in full force and effect upon passage and approval.

ROLL CALL VOTE:

AYES:

NAYS:

ABSENT:

PASSED:

APPROVED:

_____
Kevin Wallace, Village President

ATTEST:

_____
Lorna Giless, Village Clerk

CERTIFICATION

I, the undersigned, do hereby certify that I am the Village Clerk of the Village of Bartlett, Cook, DuPage and Kane Counties, Illinois, and that the foregoing is a true, complete and exact copy of Resolution 2020 - _____ enacted on May 19, 2020, and approved on May 19, 2020, as the same appears from the official records of the Village of Bartlett.

_____
Lorna Giless, Village Clerk

Engineering Enterprises, Inc.

April 27, 2020

Mr. Daniel Dinges, P.E.
Director of Public Works
Village of Bartlett
228 South Main Street
Bartlett, IL 60103

Re: Basins M1 – M7 Phase 1 Flow Monitoring Study
Village of Bartlett, Cook, DuPage, & Kane Cos., IL

Dear Dan:

In accordance with your request, enclosed for your review and consideration are two copies of our proposed agreement for the Basins M1 – M7 Phase 1 Flow Monitoring Study within the Village's sanitary sewer network. Flow monitoring of the Basins M1 – M7 is part of the Village's overall Inflow and Infiltration Reduction Program. Inflow & Infiltration (I/I) investigations are meant to delineate problematic areas of the system that are prime candidates for further sewer system evaluation work and appropriate rehabilitation.

The attached agreement includes a detailed scope of services, estimate of level of effort and associated cost, and schedule for the project. We are proposing to provide our professional engineering services for a fixed fee cost of $89,327. Our proposed schedule is to conduct flow monitoring from mid-May through early July. We will complete the data analysis through the end of summer and complete the report in the fall.

We look forward to continuing our outstanding partnership with the Village 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

Jeffrey W. Freeman, P.E. CFM, LEED AP
Chief Executive Officer

JWF/anu

Enclosures

pc: STD, CRW, ANU, DMT, ARS, DRA – EEI (Via E-mail)

52 Wheeler Road, Sugar Grove, IL 60554 ~ (630) 466-6700 tel ~ (630) 466-6701 fax ~ www.eeiweb.com

AGREEMENT FOR CONSULTING ENGINEERING SERVICES FOR BASINS M-1 – M-7 PHASE 1 FLOW MONITORING STUDY – 2020

This Agreement made this _____ day of _____, 2020 by and between the Village of Bartlett, Cook, DuPage, and Kane Counties, Illinois, a municipal corporation of the State of Illinois (hereinafter referred to as the "VILLAGE") 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 VILLAGE and the ENGINEER agree, covenant and bind themselves as follows:

1. Services: ENGINEER agrees to perform for the VILLAGE the Services defined within Attachment A.

2. Direction: The Director of Public Works, or his written designee, shall act as the VILLAGE'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 VILLAGE agrees to pay the ENGINEER for providing the Services set forth herein a fixed fee amount of $89,327.

4. Term: The term of this Agreement shall be active through November 30, 2020 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 VILLAGE on a monthly basis for Services performed and any costs and expenses incurred during the previous thirty (30) day period. The VILLAGE 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 VILLAGE 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 VILLAGE:

Village of Bartlett
228 South Main Street
Bartlett, IL 60103
Attn: Daniel Dinges, P.E.
Director of Public Works

The ENGINEER:

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

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 VILLAGE 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.

VILLAGE OF BARTLETT

_____

Title: _____

ATTEST:

_____

Title: _____

ENGINEERING ENTERPRISES, INC.:

Jeffrey W. Freeman
Chief Executive Officer

ATTEST:

Angie Smith
Administrative Assistant

ATTACHMENT A – SCOPE OF SERVICES

BASIN M1 – M7 PHASE 1 FLOW MONITORING STUDY – 2020
Village of Bartlett, Cook, DuPage & Kane Co., IL

The Sanitary Sewer Basins M1 – M7 Flow Monitoring Study will help delineate inflow and infiltration severity throughout each subbasin. The Basins M1 - M7 are located in Cook County potion of the Village of Bartlett. The majority of the study area is located east of IL Route 59 and south of E. Lake Street. The location of the Basins is depicted on the attached Exhibit. The flow monitoring phase will help delineate inflow and infiltration (I/I) severity throughout the Basins M1 – M7. The I/I Investigation of the Basins M1 - M7 is part of a multiphase plan to reduce I/I within the Village of Bartlett sanitary sewer system. The scope and cost of the Basins M1 – M7 flow monitoring phase only covers the first portion/phase of the I/I investigation and does not include Phase 2 (Sanitary Sewer Evaluation Survey) or Phase 3 (Rehabilitation).

As part of the flow monitoring phase (this contract), the Basins M1 - M7 will be divided into eleven (11) Subbasins, such that the sanitary sewer flows and the correlating I/I can be further defined within the Basins. The proposal includes flow monitoring at eleven (11) locations for eight (8) weeks. The attached Exhibit shows the eleven (11) proposed flow monitoring locations and provides additional details for all locations. All cost and schedule decisions were based on EEI's best knowledge of the Basins M1 - M7 to date. The proposed flow monitoring locations will be reviewed with Village Staff to ensure accessibility to all flow monitor manholes, as well as the appropriate placement of each flow monitor.

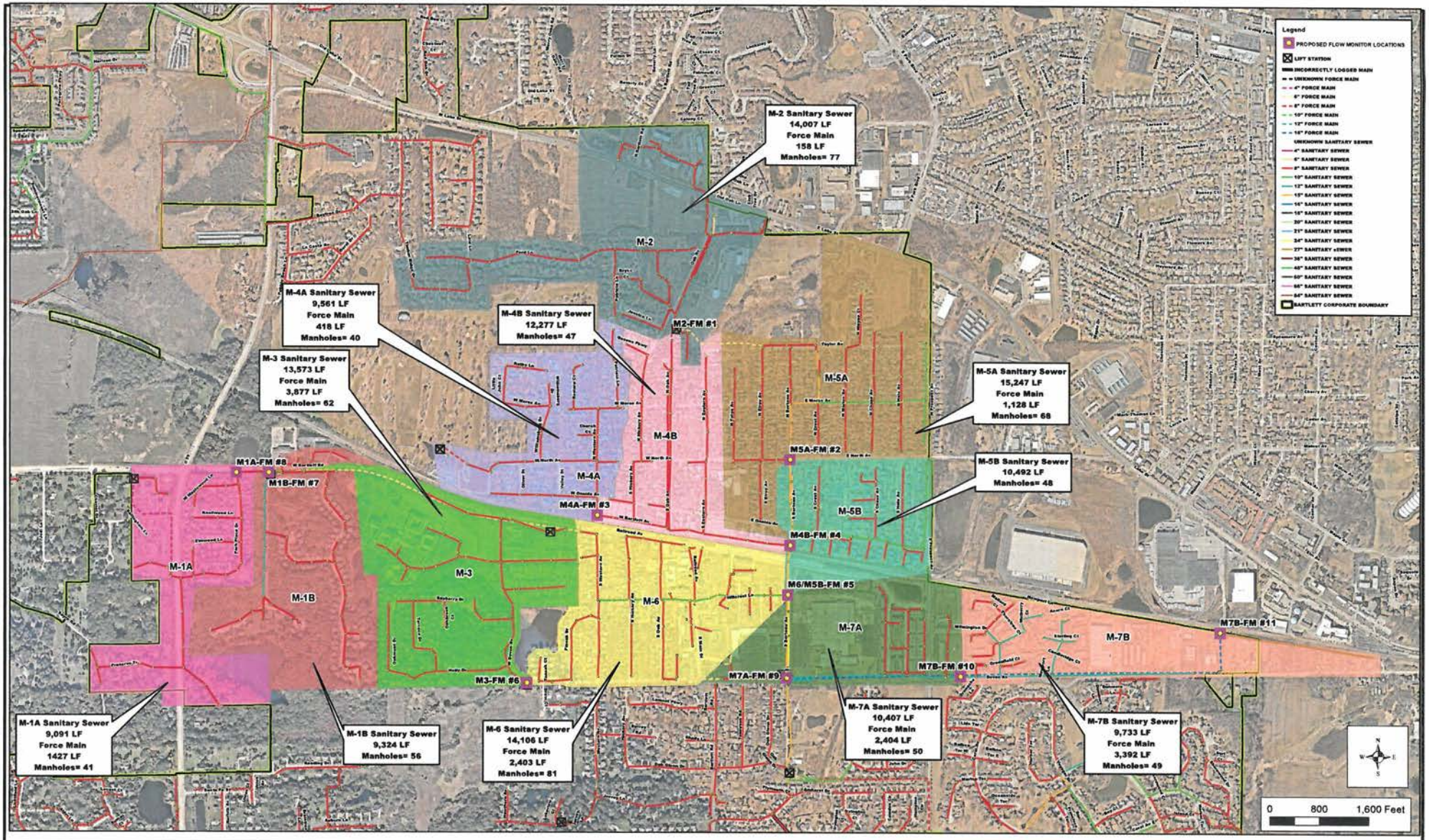
The base proposal also includes the installation of two (2) recording rain gauges in secure locations to measure rainfall during the monitoring period. The quality of the flow monitoring results will be increased with an increased number of precipitation events. A minimum of two 1.0-inch or greater rain events, each over a 24-hour period, is needed to make reasonable conclusions. The Village will have the opportunity to increase the flow monitoring period at the end of the eight-week period, should a sufficient rain event not occur or if they would wish to obtain additional data. Once sufficient flow monitoring data is obtained, the data will be analyzed, and the analysis details and conclusions will be provided to the Village for review. The flow monitoring process, analysis and conclusions will be summarized in a report.

The proposed work items for this project are as follows:

PHASE 1 – FLOW MONITORING

1.1 Project Administration
1.2 Kick-Off & Progress Review Meeting (2 Meetings Total)
1.3 Divide Basins M1 – M7 into Subbasins
1.4 Coordinate Flow Monitoring (Assumes Eleven (11) Locations) For 8 Weeks
1.5 Coordinate Rainfall Monitoring (Assumes Two (2) Locations) For 8 Weeks
1.6 Analyze Flows & Determine I&I Severity by Subbasin
1.7 Prepare Flow Monitoring Report

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.



Engineering Enterprises, Inc.
CONSULTING ENGINEERS
52 Wheeler Road
Sugar Grove, Illinois 60554
(630) 466-6700 / www.eeiweb.con

Village of Bartlett
228 S. Main Street
Bartlett, IL 60103

NO.	DATE	REVISIONS

DATE	MARCH 2020
PROJECT NO.	BL2003
PATH	H:\GIS\PUBLIC\BARTLETT\2020\BL2002
FILE	BL2003_EXHIBIT M1-7_FLOW MONITORS.MXD

VILLAGE OF BARTLETT
INFILTRATION & INFLOW
INVESTIGATION - 2020
BARTLETT, ILLINOIS

BASIN M1-7
FLOW MONITORING PLAN

DATE:	4/27/2020
ENTERED BY:	AM/JWF

ATTACHMENT B:
ESTIMATE OF LEVEL OF EFFORT AND ASSOCIATED COST
PROFESSIONAL ENGINEERING SERVICES
Basins M-1 - M-7 Phase 1 Flow Monitoring Study
Village of Bartlett, Cook, DuPage, & Kane Counties, IL

WORK ITEM NO.	WORK ITEM	ENTITY:	EEI					LAND SURVEYING			WORK ITEM HOUR SUMM.	COST PER ITEM
		PROJECT ROLE:	PRINCIPAL IN CHARGE	SENIOR PROJECT MANAGER	SENIOR PROJECT ENGINEER	PROJECT ENGINEER	GIS / CAD TECH.	SURVEY PROJECT MANAGER	SENIOR TECH W/ EQUIP.	ADMIN.		
		HOURLY RATE:	$214	$203	$172	$145	$145	$183	$158	$70		
PHASE 1 - FLOW MONITORING												
1.1	Project Administration		2	8							10	$ 2,052
1.2	Kick-Off & Progress Review Meeting (2 Meetings Total)		8	12	8						28	$ 5,524
1.3	Divide Basins M-1 - M-7 Into Subbasins			1	1	12	16				30	$ 4,435
1.4	Coordinate Flow Monitoring (Assumes 11 Locations) Within Basins For 8 Weeks			1	2	6					9	$ 1,417
1.5	Coordinate Rainfall Monitoring (Assumes 2 Locations) For 8 Weeks			1	1	2					4	$ 665
1.6	Analyze Flows & Determine I&I Severity By Subbasin		1	6	12	30	20				69	$ 10,746
1.7	Prepare Flow Monitoring Report		2	6	20	32	20			2	82	$ 12,766
											-	$ -
		PROJECT TOTAL:	13	35	44	82	56	-	-	2	232	37,605

DIRECT EXPENSES	
Printing =	$ 300
Supplies & Mileage =	$ 150
Flow & Rainfall Monitoring Sub-Consultant (ADS) - 8 weeks =	$ 51,272
DIRECT EXPENSES =	$ 51,722

LABOR EXPENSES	
Engineering Expenses =	$ 29,345
Drafting & GIS Technician Expenses =	$ 8,120
Land Surveying Expenses =	$ -
Administrative Expenses =	$ 140
TOTAL LABOR EXPENSES =	$ 37,605

TOTAL COSTS =	$ 89,327

ATTACHMENT C - SCHEDULE

4/27/2020

Basins M1 - M7 Phase 1 Flow Monitoring

Village of Bartlett, Cook, DuPage Kane Counties, Illinois

WORK ITEM NO.	WORK ITEM	Year:	2020																																				
		Month:	March				April					May				June				July					August				September					October				
		Week Starting:	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	2	9	16	23	30	5	12	19	26
PHASE 1 - FLOW MONITORING																																							
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1.2	Kick-Off & Progress Review Meeting (2 Meetings Total)																																						
1.3	Divide Basins M1- M7 Into Subbasins																																						
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1.5	Coordinate Rainfall Monitoring (Assumes 2 Locations) For 8 Weeks																																						
1.6	Analyze Flows & Determine I&I Severity By Subbasin																																						
1.7	Prepare Flow Monitoring Report																																						

G:\Public\Bartlett\2020\BL2003 North Basins Phase 1 Flow Monitoring\Project Management\PSA\M1-M7 Flow Monitoring (Attachment C - Schedule-Basins M1-M7.xlsx)Proposal-PSA

Legend	
Project Administration Work Item(s)	Report Development
Meeting(s) & Field Visits	
Planning Document Work Item	

Standard Schedule of Charges

January 1, 2020

EMPLOYEE DESIGNATION	CLASSIFICATION	HOURLY RATE
Senior Principal	E-4	$214.00
Principal	E-3	$209.00
Senior Project Manager	E-2	$203.00
Project Manager	E-1	$183.00
Senior Project Engineer/Planner/Surveyor II	P-6	$172.00
Senior Project Engineer/Planner/Surveyor I	P-5	$160.00
Project Engineer/Planner/Surveyor	P-4	$145.00
Senior Engineer/Planner/Surveyor	P-3	$133.00
Engineer/Planner/Surveyor	P-2	$121.00
Associate Engineer/Planner/Surveyor	P-1	$109.00
Senior Project Technician II	T-6	$158.00
Senior Project Technician I	T-5	$145.00
Project Technician	T-4	$133.00
Senior Technician	T-3	$121.00
Technician	T-2	$109.00
Associate Technician	T-1	$ 96.00
GIS Technician	G-1	$ 90.00
Engineering/Land Surveying Intern	I-1	$ 79.00
Administrative Assistant	A-3	$ 70.00

VEHICLES. REPROGRAPHICS, DIRECT COSTS, DRONE AND EXPERT TESTIMONY

Vehicle for Construction Observation		$ 15.00
In-House Scanning and Reproduction	$0.25/Sq. Ft. (Black & White) $1.00/Sq. Ft. (Color)	
Reimbursable Expenses (Direct Costs)	Cost	
Services by Others (Direct Costs)	Cost + 10%	
Unmanned Aircraft System / Unmanned Aerial Vehicle / Drone		$ 200.00
Expert Testimony		$ 250.00

52 Wheeler Road, Sugar Grove, IL 60554 ~ (630) 466-6700 tel ~ (630) 466-6701 fax ~ www.eeiweb.com