



I. INTRODUCTION

Stormwater Solutions Engineering, LLC (SSE) is pleased to provide the City of Mequon with this proposal for the evaluation of existing drainage elements and the conceptual design of alternatives to improve drainage within the Prairie View Lane drainage area.

SSE's Mission

*Improving the built and natural environments
within communities through sustainable
engineering and design.*

We care about your water quality concerns, as well as the environment. We will listen closely as you describe your goals, treating your project as we would our own, and we will work with you to develop sound and achievable solutions to your water quality challenges.

II. OVERALL QUALIFICATIONS OF FIRM

Stormwater Solutions Engineering, LLC (SSE) is a civil engineering design firm **specializing in managing the treatment, storage, and safe passage of stormwater**. Since 2002, we've focused on flood management, water quality, drainage design, and integrated site design. And we've developed an expertise in those areas that is second to none.

As leaders in the field of stormwater engineering, our plans incorporate innovative techniques that imitate natural water management processes to reduce flooding and improve water quality. Using cost-effective approaches, we design low-maintenance systems that meet our clients' needs and protect our waterways. We serve municipalities, watercourse districts, transportation agencies, and commercial and residential property owners, working closely with our clients to help them find *their* ideal solutions.

Stormwater Solutions Engineering is unique in several ways that benefit our clients. We're **the only stormwater-focused engineering firm in Wisconsin**. Because of our focus and expertise, we have a **broad toolbox to draw on to address water-based regulations**. And we strive to **assist clients in finding *their* solutions** to stormwater issues, instead of just offering a "cookie-cutter" approach.



III. Scope of Services

General

SSE proposes several key elements for the evaluation and analysis of the Prairie View Lane and Lake Shore Drive drainage improvements. With our project partners, we will thoroughly investigate the existing drainage system and its impact to flooding within the Prairie View Lane drainage area. We will update the hydrology and hydraulic analysis completed in 1999 using current hydrologic methodologies and use that updated model to evaluate the recommendations from the 1999 Stormwater Management report as well as provide our own drainage improvement recommendations that can be implemented in the near-term to bring some flood relief to the Prairie View Lane area. Our deliverables to the City will include one (1) draft report, one (1) final draft report, (2) meetings, and one (1) final report if requested.

Task 0: Project Management

Carrie Bristoll-Groll at Stormwater Solutions Engineering, LLC (SSE) will inform and coordinate transfer of information between SSE and the City. Carrie also serves as quality control, thoroughly reviewing analysis, calculations, and solutions, ensuring the best results for the City.

Task 1: Survey

Publicly available Ozaukee County topographic data from 2015 along with City of Mequon GIS data and structure data collected as part of the 1999 stormwater management report will be used to define the key drainage features within the study area. Our fee includes an allowance for any additional surveying to confirm pipe inverts, culvert inverts, inlet rims, and ditch cross sections as needed for the accurate hydraulic analysis and conceptual design of the drainage improvements.

SSE will walk the Prairie View Lane drainage area and the tributary to the Milwaukee River. We will obtain necessary field measurements and provide direction to the land surveyor.

Task 2: Televising Drain Tile

There are a number of variables that are considered when estimating the cost and the effort of televising storm sewer. Because of these variables, the cost described in our estimated fee depends on a number of assumptions. The first is the pipe size. We are assuming that the drain tile is a minimum of 8-inches in diameter. If the drain tile is 6-inches in diameter, it can be very difficult to access with a camera and sections of drain tile that are 6-inches may not be possible to televise.

The second variable is access. We understand that existing manhole access exists at Pinehurst Circle and a second manhole is at Shorecliff Lane. These existing locations would provide the minimum access required to televise a clean pipe, however, it is also our understanding that the existing drain tile is broken in at least two places. In addition to drilling new access points due to breaks or clogs, additional access points also need to be drilled at any turning points. At minimum, there are two 90-degree bends in the drain tile between Shorecliff and Pinehurst which would need access shafts. We currently assume that there would need to be a minimum of two access shafts drilled in order to access the drain tile located between 10 and 15 feet below the ground surface.

The third variable is cleanliness. A pipe's opening must be large enough to fit a camera through it. Any debris that would impede camera access needs to be cleared out of the pipe. Heavy cleaning with a



vacuum will increase the amount of effort that would go into the televising and drive up the cost. In addition to the increased effort and additional time, heavy cleaning of the draintile will also result in dump fees which would be added into the total cost. Our fee considered heavy cleaning of the pipe, however, if televising is considered on a time and materials basis, the fee can be considerably less as described in the fee section of our proposal.

The last variable is the time that it will take to televise approximately 3,000 feet of draintile as shown on the location map included as an attachment to the RFP. If the pipe is clean, it will take approximately 40 hours for a crew to televise the pipe. If the pipe needs a substantial amount of cleaning, it can take up to 80 hours to televise the entire pipe since it will need to be cleaned out along the way. The televising sub-contractors that we have worked with in the past would not be able to fit this amount of work into their schedule until early fall.

SSE understands that time is of the essence in developing flood relief solutions that can be presented to the community in the near term. We will review the 1999 Stormwater Management Report as well as other background information and compile a preliminary hydrologic and hydraulic model to begin developing flood improvement alternatives prior to reviewing the results of the televised sewer and draintile. We will proceed with assumptions on the existing draintile capacity and rely on preliminary investigations from the televising contractor until we are able to review the results of the televising. Once we receive a copy of the report from the televising subcontractor, we will revise our models and alternatives accordingly. We will be able to produce a draft stormwater report within four weeks of receiving the televised sewer results from the televising sub-contractor.

Task 3: Review of the 1999 Stormwater Management Report

The 1999 Stormwater Management Report recommends channel improvements to the tributary to the Milwaukee River in the Prairie View Lane drainage area. The 1999 report defines this area as "MQ-2". SSE will review the conclusions of the 1999 Stormwater Management Report for the MQ-2 area and compare the results to our field observations, survey data, and updated hydrologic and hydraulic analysis.

The 1999 report utilized the EPA SWMM software. SSE proposes to develop a comparison hydrologic and hydraulic model of the Prairie View Lane drainage area using the PCSWMM software which runs on the EPA SWMM engine, but contains an enhanced user interface, supports GIS tools, and integrates 1-dimensional and 2-dimensional modeling.

Our revised model will utilize the latest SEWRPC 2006 rainfall distribution and NOAA Atlas 14 rainfall for a more accurate prediction of significant rainfall events within our hydrologic and hydraulic model. The updated survey and televising information collected as part of Tasks 1 and 2 will also be incorporated into our PCSWMM model. Downstream of I-43 the tributary is a mapped floodplain. Our model will rely on the effective FEMA model to establish a downstream boundary conditions for the reach. The entire Prairie View Lane drainage area will be considered in our analysis including key storm sewer and overland flow paths.

SSE will incorporate the drainage improvements recommended for the MQ-2 area from the 1999 report into our revised and updated PCSWMM model. We will then evaluate the performance of each recommendation within the updated model and compare it to the stated performance in the 1999



report. Finally, we will recommend any changes to the proposed channel geometries or other drainage elements that would enhance the performance of the drainage improvements considered in 1999.

Task 4: Prepare Draft Report

SSE will use the hydrologic and hydraulic model developed under Task 3 to recommend at least three (3) short-term or long-term alternatives to reduce flooding at Prairie View Lane and Lake Shore Drive. These alternatives will be developed in addition to and would work in conjunction with the recommendations presented in the 1999 Stormwater Management Report.

A cost estimate will be provided for each alternative using the best available construction costs that SSE has compiled over the last year from similar projects in the Milwaukee area. We will also use our knowledge of the current construction climate to anticipate the design and construction schedule for each alternative. SSE will compile a list of any permits that would be required for each alternative along with an estimate of any permit fees. SSE will also evaluate the proposed alternatives for grant opportunities and provide the City with a list of grants that may fund a portion of each alternative. SSE has won over \$2.5 Million in grants for clients in the past 5 years, including \$965,000 for the County's War Memorial Center Green Parking Lot Project currently under construction.

SSE will produce a draft report summarizing the work completed under this contract. At minimum, the report will include a draft of the following elements:

- A summary of the results of the televising
- A description of the survey data collected and how it compares to the data collected as part of the 1999 Stormwater Management Report.
- The results of the revised hydrologic and hydraulic modeling and how it compares to the results of the SWMM modeling done in 1999 for the Prairie View Lane and Lake Shore Drive area.
- An evaluation of the continued feasibility of the 1999 Stormwater Management Report alternatives for the MQ-2 area.
- A discussion of at least three (3) alternatives that provide either short-term or long-term relief to stormwater flooding in the Prairie View Lane and Lake Shore Drive area including anticipated cost and schedule.

Task 5: Final Draft Report and Presentation

SSE will prepare a final draft of the report prepared under Task 4. We will attend one meeting with the City of Mequon to discuss the report's conclusions highlighting our recommended drainage improvement alternatives. We will also be available to present to the Public Works Committee and will provide visual aids such as a powerpoint presentation and full-size copies of our recommended alternatives.

Task 6: Address Final Comments

SSE will be available to address any comments that come up as a result of the presentation meetings under Task 5. If requested by the City of Mequon, SSE will incorporate comment responses into a final



version of the report. If no comment responses will be needed, then the final draft of the report will be considered the final version and the remainder of Task 6 will not be used.

Additional Services, if requested:

- Final design and permitting of stormwater improvements.
- Grant writing for any proposed stormwater improvement alternatives that qualify.
- Update the 1999 hydraulic model beyond the Prairie View Lane drainage area using current rainfall data and advanced modeling software to enhance the Village's ability to predict future flooding hot spots.
- Use WinSLAMM to evaluate the effectiveness of drainage improvement alternatives to contribute to the City's TSS reduction goals in the Milwaukee River watershed.

IV. PROJECT STAFF QUALIFICATIONS



CARRIE BRISTOLL-GROLL, PE, CFM - Stormwater Solutions Engineering, LLC
Professional Engineer, Wisconsin, Wisconsin #33316, Granted 1999
B.S., Civil Engineering, University of Wisconsin - Milwaukee, 1994
Project Role: Project Manager, Quality Control, Expert Witness

Carrie is Stormwater Solutions Engineering's Principal Civil Engineer and owner. She has been serving Wisconsin's waterways and stakeholders with stormwater and waterway related engineering for the past 25 years, beginning at the City of Milwaukee's Stormwater Unit where she worked to maintain the City's stormwater permit, reviewed development plans, assisted with stormwater information and education activities, and conducted outfall monitoring. In 1999, she became the first Stormwater Engineer at the City of Brookfield, designing and managing stormwater quality and flood solutions from concept through construction and working with property owners to manage their drainage and stormwater issues.

Carrie founded Stormwater Solutions Engineering, LLC in 2002. Since that time, she has built a team of seven professionals to meet the needs of municipalities, watercourse districts, transportation agencies and private property owners. Carrie manages design needs from project scoping through project delivery and is our team's drainage expert. Carrie is also the designer of the patent-pending product StormGUARDen™, an attractive, low cost, and low maintenance rainfall integration solution that manages roof runoff at the downspout.

Carrie's recent project management, watershed analysis, and expert witness roles include:

- **Sewerage District:** Performed lead role in development of the Kinnickinnic River Watershed Green Infrastructure Plan, to provide flood risk reduction, improved water quality, public engagement and other benefits through strategic placement of stormwater green infrastructure features.
- **Glen Oaks Cemetery:** Project Manager for team of engineers to evaluate increases in flooding and water quality (sedimentation) across private cemetery. Prepared drainage evaluation with proposed alternatives including potential for legal action with an adjoining property.
- **Fountain Lake:** Led staff in design of mitigation plan for hydraulic removal of phosphorus laden sediment from large lake system in Minnesota, to improve habitat, decrease algae blooms and encourage lake restoration
- **Eglite Property, Delavan, WI. Drainage Evaluation and Expert Witness:** Performed drainage analysis and investigation of responsibility for drainage issues experienced at private property, resulting in structural damages to residence. Provided expert witness in jury trial, with successful outcome for client.
- **WisDOT:**
 - I-94 N/S Racine Co. Plans off Shelf, 2017-2020, Lead Drainage Engineer for mainline and frontage road work along Foxconn project limits.
 - US-41, Memorial to Lineville, Lead Drainage Engineer. Carrie lead a drainage team to perform stormwater pond analysis and design, water quality and TSS calculations, aquatic organism

passage design, preliminary and final drainage design and special hydraulic/hydrologic reports on areas of high tailwater and floodplain conditions.

- I-94 Corridor Management Team - Drainage Design Engineer.
- Lead drainage engineer on all the I-94 segments (between interchanges) in Racine County.
- Final design of storm sewer and drainage systems on 3 interchanges in Kenosha County and STH 20/I-94 interchange. Performed final design and prepared PS&E packages on 12 Stormwater Detention/Retention Ponds along I-94 in the Racine, Kenosha and Milwaukee County Segments.



SARAH PASQUESI, PE, CFM - Stormwater Solutions Engineering, LLC
Professional Engineer, Illinois, No. 062068251, Granted 2016
Professional Engineer, Wisconsin, No. E-47285, Granted 2019
M.S. Civil Engineering, University of Illinois at Chicago, 2012
Project Role: Senior Project Engineer

Sarah has 8 years professional experience in watershed analysis, hydrologic and hydraulic modeling, and site design. She has performed many successful watershed modeling studies for public and private clients. Sarah also has extensive experience with regulatory permitting and construction oversight.

Sarah has been instrumental in the following projects with additional project experience available upon request:

- MMSD: Project engineer responsible for the hydraulic analysis using the XPSWMM software and concept design of an extension to the District's near surface collector in Edgewood Avenue to relieve flooding in Shorewood, WI.
- Village of Glenview: Project engineer and deputy project manager responsible for modeling flood control alternatives using the XPSWMM software for seven subdivisions in Glenview, Illinois previously identified in the Village's Flood Risk Reduction Program. Sarah worked closely with the Village Engineer to develop feasible and cost-effective alternatives.
- Village of Lincolnshire: Sarah served as the project engineer responsible for the implementation of a portion of the watershed master plan developed for the Lincolnshire Creek watershed in Lincolnshire, Illinois. She performed the hydrologic and hydraulic modeling for the Creek using the HEC-RAS software and designed creek stabilization using gabions and geogrid lifts. She also coordinated permits, applied for grants and performed construction oversight on the project.
- Franklin Estates Bridge Replacement: Project manager and project engineer responsible for updating the existing FEMA Effective HEC-RAS model to analyze the impacts of reconstructing an existing failed bridge in Franklin, WI. Sarah also prepared and coordinated permit documents for the project with the City and WDNR.
- Chicago Park District: Project engineer responsible for the river flood conveyance modeling, bank restoration design and permit applications as part of four rowing venue boat house launch systems located on the north branch and the south branch of the Chicago River in Chicago, IL.
- WisDOT: Project Engineer responsible for hydraulic calculations to determine inlet capacity, pipe sizing, culvert capacity and infield sizing for the 90% and final interchange design at I-39/I-90 and I-43. As part of this project Sarah also performed hydraulic calculations using HEC-RAS for a



bridge replacement associated with the interchange improvements and established new floodplain boundaries upstream of the project area.

V. RELEVANT RECENT PROJECT EXPERIENCE

The following project profiles demonstrate capabilities and experiences relevant to hydrology and hydraulic modeling:

Project: Milwaukee Metropolitan Sewerage District – Conveyance System Evaluation and Modelign Software Improvements

The project team developed a number of recommended strategies for the District’s Conveyance System Model (CSM). Recommendations included an analysis of how effectively each software strategy would meet the District’s goals, cost estimates for obtaining software and recurring costs for maintaining software licenses. As a result of the team’s recommendations, the District decided to move forward with the development of the CSM using the PCSWMM software.

The CSM was converted to the PCSWMM software. During this process, the model needed to be updated and calibrated to current conditions. Before the model calibration could begin, SSE was essential in using GIS to delineate sewershed boundaries and divide the MMSD’s complex combined sewer system into individual submodels. Each individual submodel was then assigned to team members for further analysis

Existing flow, velocity, and level meter data provided by the District was plotted over the CSM model results at each meter location. SSE calibrated select submodels by manipulating hydrologic and hydraulic parameters. SSE worked closely with team members assigned to adjoining submodels understanding that any changes to a particular submodel has a ripple effect throughout the CSM.

A separate task associated with the Conveyance System Evaluation included a detailed analysis of the near surface collector (NSC) extension in Edgewood Avenue to relieve flooding in Shorewood, WI. SSE was instrumental to this task as the primary modeler for the hydraulic analysis and conceptual design of the proposed drainage improvements.

Project Client:

Cari Roper, P.E., Senior Project Manager
Milwaukee Metropolitan Sewerage District
260 West Seeboth Street, Milwaukee, WI
(414) 221-6815, croper@mmsd.com

SSE Key Staff:

Carrie Bristoll-Groll, PE, CFM – Project Manager
Sarah Pasquesi, PE, CFM - Senior Engineer
Cassandra Bence – Project Engineer

Project: Village of Fox Point – Goodrich Lane and Stormwater Design

SSE led a roadway and stormwater design project at the Village of Fox Point for the repaving of Goodrich Lane to incorporate stormwater management in the roadside, with grass-lined bioswales (seen below) and Regenerative Stormwater Conveyance in steep slopes to reduce erosion to ravines.

Project Client:

Scott Brandmeier, P.E.
Fox Point Director of Public Works
414-351-8900
sbrandmeier@villageoffoxpoint.com

SSE Key Staff:

Carrie Bristoll-Groll, PE, CFM – Project Manager
Adrienne Cizek, PhD, PE - Senior Engineer



Project: Milwaukee County – War Memorial Center, Milwaukee, Wisconsin

SSE worked together with the Sigma Group to design safe roadway improvement on Lincoln Memorial Drive, and parking lot improvements at the War Memorial Center to incorporate water quality and green infrastructure to the parking lot design, along with ADA/pedestrian safety, vehicular access and emphasis on the memorial aspects of the Veteran’s Park.

Project Client:

Project Reference:
Julie Bastin, Project Manager
Milwaukee County
Architecture & Engineering Division
julie.bastin@milwaukeecountywi.gov
(414) 278-3948

SSE Key Staff:

Carrie Bristoll-Groll, PE, CFM – Project Manager
Adrienne Cizek, PhD, PE - Senior Engineer

Project: Milwaukee County – South Shore Park, Milwaukee, Wisconsin

The South Shore Park project focused on improving (1) the traffic and bike flow, (2) water quality of the parking lot, dock and boat launch area, and (3) site aesthetics.

SSE led the planning and design of the storm sewer and green infrastructure best management practices for improving water quality and quantity of parking lot stormwater run-off. Biofiltration cells were strategically placed to help orient vehicle, bike and pedestrian traffic while intercepting runoff from the parking lot. The focus was to create an integrated storm sewer and green infrastructure design that did more than meet local regulations and permits.

The project features over 8,000 square-feet of biofiltration and infiltration cells, treating over 100,000 gallons of stormwater run-off. The biofiltration cells include native plantings and a fungus-laden woodchip (myco-filtration) to increase bacterial removal from the 60% that is typical for bioswales to a 90% reduction. The fungi species used are native to Wisconsin and natural predators of bacteria such as fecal coliform.

Stakeholder participation by neighbors, park users, boaters, the South Shore Yacht Club, and the biking community were key to establishing concepts and for communicating project design and construction aspects. The project was partially funded by environmental grants. Construction was complete in the fall of 2017 and has been noted as a success by Milwaukee County, the neighborhood, and yacht club community.

The plan presented much needed realignment for South Shore Parks traffic flow, way finding, safer integration of the multi-purpose biking/pedestrian Oak Leaf Trail and leverage the maritime atmosphere. Construction was completed the Spring 2018 with a construction cost of \$3 million.

Project Client:

David Gulowski, PE
Project Manager
Milwaukee County
(414) 278-4942

SSE Key Staff:

Carrie Bristoll-Groll, PE, CFM – Project Manager
Adrienne Cizek, PhD, PE - Senior Engineer



Project: Milwaukee Metropolitan Sewerage District – Private Property Inflow/Infiltration Task Order 14: Rain Garden Guidance Document for Sump Pump Discharge

Foundation drains connected to the sanitary sewer on private properties deliver excess groundwater into the system that can result in overflows or basement backups. Discharging sump flows to the yard have caused nuisance problems such as freezing on sidewalks or ponding in the yard for residents.

To assist homeowners interested in managing their discharge through a rain garden, SSE was tasked with developing of a guidance document to size a rain garden appropriately for their discharge. The guidance document along with a calculator were developed based on sump pump discharge monitoring data and lessons learned from previous projects. Although sump pump discharge can be measured, it is not as easy to quantify as typical stormwater runoff. Sump pump discharge is triggered by soil moisture, rain intensity, foundation drain condition, elevation, and other factors. The result can be no discharge from small rain events, leading to a relatively dry rain garden, or discharge long after a rain event, creating a wetter rain garden for longer periods of time. Despite these challenges, managing the discharge through a rain garden designed for the homeowner’s unique property is rain garden is a sound I/I solution in many cases.

Project Client:

Jerome Fogel, P.E., Senior Project Manager
Milwaukee Metropolitan Sewerage District
260 West Seeboth Street, Milwaukee, WI
53204
(414) 225-2161, jflogel@mmsd.com

SSE Key Staff:

Carrie Bristoll-Groll, PE, CFM – Project Manager
Kara Koch, PE - Senior Engineer

Project: STH 89, Columbia County, Wisconsin (ID 3670-01-01)

SSE Performed hydrologic and hydraulic analysis for a highway crossing at 2nd Ward Creek. In addition, SSE reviewed existing HEC-HMS hydrologic model for flood events (100- and 500-yr) and updated the model to include small events (2- and 5-yr). SSE used HEC-RAS to update the existing floodplain model for 2nd Ward Creek based on survey and proposed roadway modifications. SSE worked directly with roadway designers and WisDOT to determined best design for culvert crossing to safely convey flood events, while protecting neighboring properties, remaining cost effective, and allowing for critter-friendly velocities and water depth during the 2-year storm. Note that this project did not include a survey within SSE scope.

Project Client:

Steve Porter, PE
WisDOT
608.243.3366

SSE Key Staff:

Carrie Bristoll-Groll, PE, CFM – Project Manager
Adrienne Cizek, PhD, PE - Senior Engineer



Project: Scotch Creek Floodplain Boundary Determination

SSE performed hydrologic and hydraulic analysis for Scotch Creek in Edgar, WI.

SSE used two approved methods to determine runoff flows to Scotch Creek upstream of 3rd Street in Edgar, WI. Flows were determined for the 2-, 5-, and 100-year storm events as input for hydraulic modeling. SSE used HEC-RAS to build a model to determine extents of floodplain and water surface for the previously unmodeled, but regulated, Scotch Creek, to determine the impact of a proposed cellular tower. WDNR approved the model in July 2019. Note that this project did not include a survey within SSE scope.

Project Client:

Andrew Porn, Project Manager
Edge Consulting Engineers, Inc
608-644-1449

SSE Key Staff:

Carrie Bristoll-Groll, PE, CFM – Project Manager
Adrienne Cizek, PhD, PE - Senior Engineer

Project: Milwaukee Metropolitan Sewerage District – Kinnickinnic River Reach 2, Phase 1, Contract W40002D05

SSE performed engineering services as a subconsultant and partner to GRAEF on the regions first full watershed green infrastructure plan to meet 15 factors from water quality to educational opportunity. SSE performed water quality and flood risk reduction calculations to be incorporated into GIS analysis. Project had a strong focus on stakeholder engagement and public outreach. The result is a GIS based plan showing areas best suited for GI based upon soils, ownership, future development, pollutant loading, etc. Project promotes catalytic projects placed strategically for ease of installation, efficient pollutant removal and multiple benefits.

SSE’s role in the Project also included:

- Perform flood risk reduction modeling to include a green infrastructure alternative for the full watershed using HSPF software.
- Develop flood storage concept plans for Milwaukee County Parks and assist with stakeholder engagement and public outreach
- Permitting documents (FEMA, WDNR, City)
- Preliminary and final design of green infrastructure for Pulaski Park, which included the first Regenerative Stormwater Conveyance (RSC) system along the KK River (pictured during construction in fall 2019).

Project Client:

Patrick Elliot, PE, Project Manager
MMSD
414-225-2168

SSE Key Staff:

Carrie Bristoll-Groll, PE, CFM – Project Manager
Adrienne Cizek, PhD, PE - Senior Engineer



VI. PROPOSED FEE

The pipe televising services make up a majority of the fees associated with this project. The variables associated with the cost of pipe televising are discussed in detail under Task 2 of the Project Scope. The cost of sewer televising for the approximately 3,000 linear feet of draintile associated with this project can be anywhere from \$15,000 for a clean, unbroken, relatively straight pipe to \$50,000 for a pipe that needs to be heavily vacuumed. Our fee on the attached Level of Effort attempts to break down the cost of sewer televising and provide the City with an understanding of the potential costs that could occur on the more labor-intensive end of this range. The total cost of televising would be considered on a time and materials basis and the City would only pay for the actual cost likely falling somewhere between the two cost extremes.

SSE proposes to complete all of the engineering services described in the scope of work on a time and materials basis at our current hourly rates at a fee not to exceed \$24,514.00 as described on the attached Level of Effort. An allowance for the surveyor is included in the amount of \$3,000.00. The total cost of the combined services is a fee not to exceed **\$77,514.00**.

VII. PROPOSED SCHEDULE

The SSE Team proposes the following:

Task	Date Completed By/Duration
Notice to Proceed	July 14, 2020
Preliminary Analysis	August 14, 2020
Results of Sewer Televising*	September 15, 2020
Draft Report	October 12, 2020
Final Draft Report	October 30, 2020
Presentation to Public Works Commission	November 2, 2020
Final Report and Response to Comments	November 16, 2020

*The sewer televising will be scheduled upon receiving notice to proceed and completion date of that task is subject to change based on contractor availability.

Project Name: **City of Mequon Drainage Capitol Improvement Stormwater Study**

Task	Description	Hours			Total
		Carrie Bristol-Groll Principal Engineer	Sarah Pasquesi Senior Engineer	Cassandra Bence Project Engineer	
	Billing Rates	\$198.00	\$141.00	\$109.00	
Task 0:	Project Management				
0.1	Project Management	4			\$792.00
0	Subtotal	4	0	0	\$792.00
Task 1:	Survey				
1.1	Coordinate with subcontractor	1	2		\$480.00
1.2	Engineering Field Visit		8		\$1,128.00
1	Subtotal	1	10	0	\$1,608.00
Task 2:	Televisе Draintile				
2.1	Coordinate with subcontractor	1	2		\$480.00
2	Subtotal	1	2	0	\$480.00
Task 3:	Review 1999 Stormwater Management Report				
3.1	Review Background Information		8	4	\$1,564.00
3.2	SWMM Modeling of drainage area		24		\$3,384.00
3.3	Evaluate 1999 recommendations for MQ-2 Area		4		\$564.00
D	Subtotal	0	36	4	\$5,512.00
Task 4:	Prepare Draft Report				
4.1	Develop Drainage Improvement Alternatives		16	12	\$3,564.00
4.2	Prepare Draft Report	2	24		\$3,780.00
4	Subtotal	2	40	12	\$7,344.00
Task 5:	Final Draft Report and Meetings				
5.1	Finalize Report developed in Task 4	2	20	6	\$3,870.00
5.2	Present Report to Mequon Staff		4		\$564.00
5.3	Present Report to Public Works Committee Meeting		8		\$1,128.00
5	Subtotal	2	32	6	\$5,562.00
Task 6:	Final Report				
6.1	Respond to Comments		12		\$1,692.00
6.2	Prepare Final Report	2	8		\$1,524.00
6	Subtotal	2	20	0	\$3,216.00
Total of SSE Hours		12	140	22	\$24,514.00
Subconsultants					
1	Land Surveying (Horizon Land Services)	\$3,000.00			\$3,000.00
2.1	Sewer Televising - Base Price	\$15,000.00			\$15,000.00
2.2	Sewer Televising - Access Shafts (two additional)	\$3,000.00			\$3,000.00
2.3	Sewer Televising - Cleaning (1 pass with jet)	\$24,000.00			\$24,000.00
2.4	Sewer Televising - Extra Cleaning (heavy vacuume and disposal)	\$8,000.00			\$8,000.00
	Subtotal				\$53,000.00
Total Proposed Contract Amount					\$77,514.00