

SCOTT COUNTY ENGINEER'S OFFICE

950 E. Blackhawk Trail
Eldridge, Iowa 52748

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ANGELA K. KERSTEN, P.E.
County Engineer

ELLIOTT R. PENNOCK, E.I.T.
Assistant County Engineer

TARA YOUNGERS
Senior Administrative Assistant

MEMO

TO: Mahesh Sharma
County Administrator

FROM: Angie Kersten, P.E.
County Engineer

SUBJ: Professional Design Services for Stormwater Analysis in Unincorporated Mt. Joy

DATE: March 4, 2022

Our department has determined that road and drainage improvements in the unincorporated Mt. Joy light industrial area are warranted. A majority of the existing roads and drainage system were designed and built by developers and dedicated to our department. In addition, one of the roads is an old state highway that was transferred to our department in the 1980s. As surrounding land use developed and the road system aged, it has become evident that the existing drainage system is no longer functioning and is accelerating road damages.

We solicited proposals from twelve qualified civil engineering firms to provide professional design services for a stormwater analysis in unincorporated Mt. Joy. The intent of this project is to determine the layout and condition of the existing storm sewers, the existing capacity, the recommended drainage system based on current and future conditions, and incorporate the information into our existing GIS database. We received proposals from the following civil engineering firms:

- IMEG Corporation – Rock Island, IL
- MSA Professional Services, Inc. – Bettendorf, IA
- Veenstra & Kimm, Inc. – Rock Island, IL

The proposals were evaluated and ranked based upon selection criteria detailed in the request for proposals. The criteria included staff qualifications and experience with stormwater analysis projects, example deliverable documents, responsiveness and ability to explain a thorough understanding of all required work, and project delivery schedule. The top two firms were then interviewed.

Based on their experience and expertise with similar projects, the experience of their proposed project team and key members, the overall quality of their deliverable documents, and their ability to perform work within the given time-frame, MSA Professional Services out of Bettendorf, was selected.

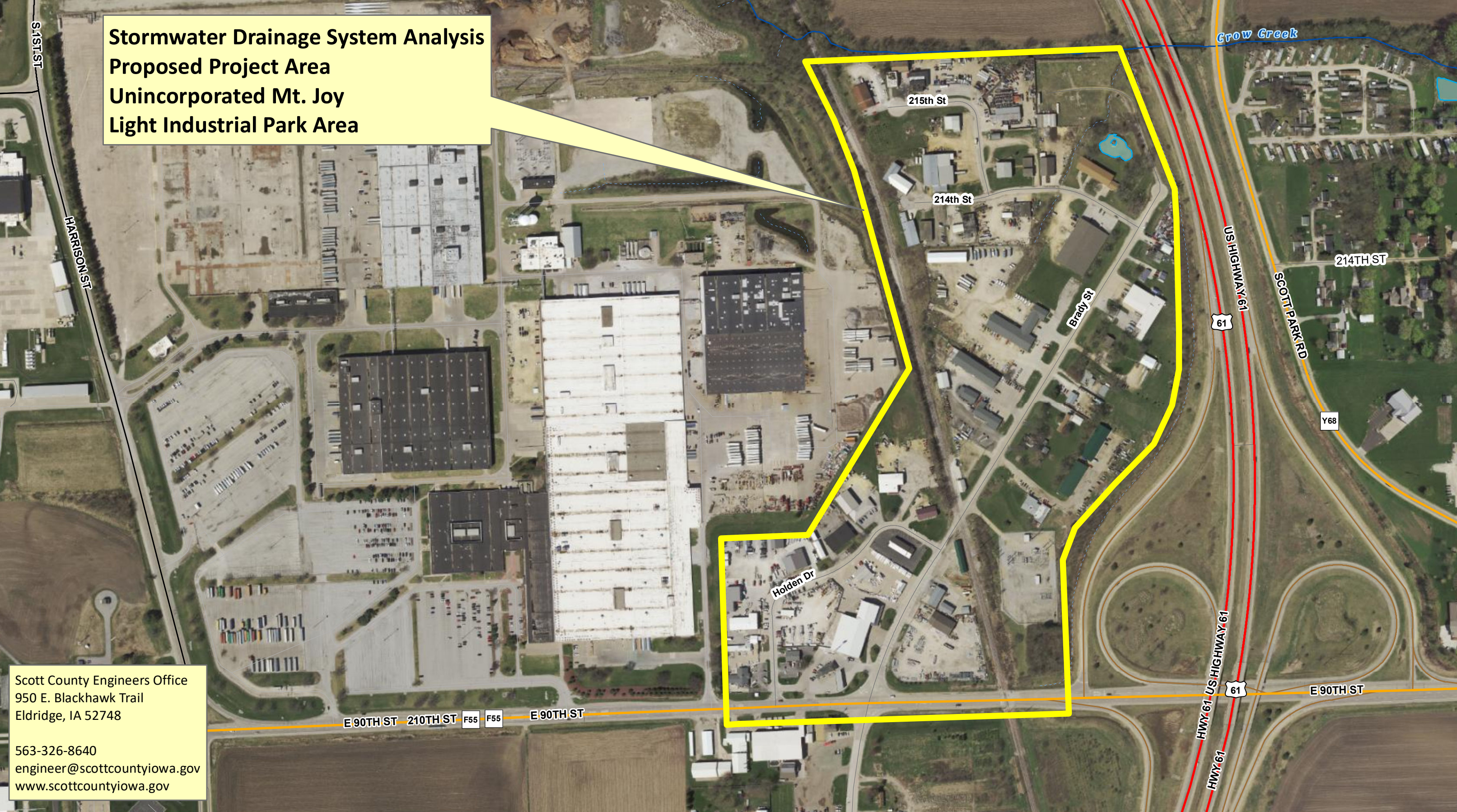
We then met with MSA to further define the scope of work for the project and negotiate a fee for their services. The contract estimate is \$42,500 for the stormwater analysis. The scope of work includes:

- Performing a topographic survey of storm sewer outlet flow line elevation, storm structure rim elevation, storm sewer pipe elevation inside structures, cross sections of existing drainage ditches and swales at key locations and known problem flooding areas. Combining information with provided Scott County GIS data and creating a comprehensive storm sewer map.
- Creating a hydraulic model of the existing pipe network including proposed improvements. Identifying areas of flooding concern and determining if pipes are undersized.
- Reviewing pipe condition assessment ratings. Prioritizing pipes for repair or replacement based on the condition of the pipes, impact of flooding, proximity to other failing pipes, location within the drainage basin, consequences of failure, and proximity to upcoming road work.
- The scope of work does not include pipe televising. During contract negotiations we determined that based on the level of work needed to improve road and drainage systems, the existing storm sewer would be replaced as a part of any project and that MSA surveyors would be able to obtain enough information to build the hydraulic model. If after MSA's survey of the existing stormwater system, it is determined that televising is necessary for this project, we will request an amendment to the contract to incorporate televising.

Upon completion of the analysis, we will review the proposed alternative solutions and determine if improvements can be made in compliance with American Rescue Plan Act requirements. After this review, we may negotiate a contract with MSA for professional road and drainage system design of the proposed alternatives. This contract would be brought to the Board of Supervisors for approval at that time.

The fee to perform this work is included in our amended FY2022 and FY2023 budgets. I recommend that Scott County enter into an agreement with MSA Professional Services, Inc., to perform this work. The total cost for this analysis is estimated to be \$42,500. Included with this memo is the contract with MSA and a location map.

**Stormwater Drainage System Analysis
Proposed Project Area
Unincorporated Mt. Joy
Light Industrial Park Area**



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E 90TH ST 210TH ST F55 F55 E 90TH ST

US HIGHWAY 61
HWY 61 US HIGHWAY 61
HWY 61

SCOTT PARK RD

Y68

E 90TH ST

214TH ST

215th St

214th St

Brady St

Holden Dr

S 1ST ST

HARRISON ST

Crow Creek



Professional Services Agreement

MSA Project Number: 13759005

This AGREEMENT (Agreement) is made today March 17, 2022 by and between SCOTT COUNTY, IA (OWNER) and MSA PROFESSIONAL SERVICES, INC. (MSA), which agree as follows:

Project Name: Scott County Stormwater Drainage System Analysis in Unincorporated Mt. Joy

The scope of the work authorized is: See Attachment A

The schedule to perform the work is: Approximate Start Date: March 17, 2022
Approximate Completion Date: August 17, 2022

The lump sum fee for the work is: \$42,500

The retainer amount required is: NA

NOTE: The retainer will be applied toward the final invoice on this project.


All services shall be performed in accordance with the General Terms and Conditions of MSA, which is attached and made part of this Agreement. Any attachments or exhibits referenced in this Agreement are made part of this Agreement. Payment for these services will be on a lump sum basis.


Approval: Authorization to proceed is acknowledged by signatures of the parties to this Agreement.

SCOTT COUNTY, IA

MSA PROFESSIONAL SERVICES, INC.

Angela Kersten
Scott County Engineer
Date: _____


Jason Miller
Service Line Leader - VP
Date: March 17, 2022


Amber Converse
Project Manager
Date: March 3, 2022

950 E. Blackhawk Trail
Eldridge, IA 52748
Phone: (563) 326-8640
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1555 SE Delaware Ave
Suite F
Ankeny, IA 50021
Phone: (515) 635-3402
Fax: (515) 608-4571

RATE SCHEDULE

<u>CLASSIFICATION</u>	<u>LABOR RATE</u>
Administrative	\$ 80 – \$140/hr.
Architects	\$ 65 – \$190/hr.
Community Development Specialists	\$125 – \$150/hr.
Digital Design.....	\$150 – \$170/hr.
Environmental Scientists/Hydrogeologists.....	\$100 – \$150/hr.
Geographic Information Systems (GIS).....	\$ 80 – \$170/hr.
Housing Administration	\$ 80 – \$140/hr.
Inspectors/Zoning Administrators	\$ 95 – \$120/hr.
IT Support.....	\$150 – \$170/hr.
Land Surveying	\$ 85 – \$170/hr.
Landscape Designers & Architects.....	\$ 85 – \$190/hr.
Municipal Advisor.....	\$150 – \$190/hr.
Planners.....	\$ 90 – \$150/hr.
Principals	\$170 – \$300/hr.
Professional Engineers/Designers of Engineering Systems	\$130 – \$170/hr.
Project Managers.....	\$135 – \$230/hr.
Real Estate Professionals	\$120 – \$130/hr.
Staff Engineers	\$ 65 – \$120/hr.
Technicians.....	\$ 85 – \$130/hr.
Wastewater Treatment Plant Operator	\$ 75 – \$ 90/hr.

REIMBURSABLE EXPENSES

Copies/Prints	Rate based on volume
Specs/Reports.....	\$10
Copies.....	\$0.20/page
Plots	\$0.015/sq.in.
Flash Drive	\$10
GPS Equipment	\$30/hour
Laser Level	\$10/per day
Mailing/UPS	At cost
Mileage – Reimbursement	IRS Rate – IRS Rate + \$5/day
Mileage – MSA Vehicle	\$0.70 mile
Nuclear Density Testing	\$25.00/day + \$10/test
Organic Vapor Field Meter	\$100/day
PC/CADD Machine	Included in labor rates
Robotic Survey Equipment.....	\$40/hour
Stakes/Lath/Rods.....	At cost
Travel Expenses, Lodging, & Meals.....	At cost
Traffic Counting Equipment & Data Processing.....	At cost
Geodimeter	\$30/hour
Drone Flight	\$390/flight

Labor rates represent an average or range for a particular job classification. These rates are in effect until December 31, 2022.

MSA PROFESSIONAL SERVICES, INC. (MSA)
GENERAL TERMS AND CONDITIONS OF SERVICES (PUBLIC)

1. **Scope and Fee.** The quoted fees and scope of services constitute the best estimate of the fees and tasks required to perform the services as defined. This agreement upon execution by both parties hereto, can be amended only by written instrument signed by both parties. For those projects involving conceptual or process development service, activities often cannot be fully defined during initial planning. As the project progresses, facts uncovered may reveal a change in direction which may alter the scope. MSA will promptly inform the OWNER in writing of such situations so that changes in this agreement can be made as required. The OWNER agrees to clarify and define project requirements and to provide such legal, accounting and insurance counseling services as may be required for the project

2. **Billing.** MSA will bill the OWNER monthly with net payment due upon receipt. Past due balances shall be subject to an interest charge at a rate of 12% per year from said thirtieth day. In addition, MSA may, after giving seven days written notice, suspend service under any agreement until the OWNER has paid in full all amounts due for services rendered and expenses incurred, including the interest charge on past due invoices.

3. **Costs and Schedules.** Costs and schedule commitments shall be subject to change for delays caused by the OWNER's failure to provide specified facilities or information or for delays caused by unpredictable occurrences including, without limitation, fires, floods, riots, strikes, unavailability of labor or materials, delays or defaults, by suppliers of materials or services, process shutdowns, acts of God or the public enemy, or acts of regulations of any governmental agency. Temporary delays of services caused by any of the above which result in additional costs beyond those outlined may require renegotiation of this agreement.

4. **Access to Site.** Owner shall furnish right-of-entry on the project site for MSA and, if the site is not owned by Owner, warrants that permission has been granted to make planned explorations pursuant to the scope of services. MSA will take reasonable precautions to minimize damage to the site from use of equipment, but has not included costs for restoration of damage that may result and shall not be responsible for such costs.

5. **Location of Utilities.** Consultant shall use reasonable means to identify the location of buried utilities in the areas of subsurface exploration and shall take reasonable precautions to avoid any damage to the utilities noted. However, Owner agrees to indemnify and defend Consultant in the event of damage or injury arising from damage to or interference with subsurface structures or utilities which result from inaccuracies in information of instructions which have been furnished to Consultant by others.

6. **Professional Representative.** MSA intends to serve as the OWNER's professional representative for those services as defined in this agreement, and to provide advice and consultation to the OWNER as a professional. Any opinions of probable project costs, reviews and observations, and other decisions made by MSA for the OWNER are rendered on the basis of experience and qualifications and represents the professional judgment of MSA. However, MSA cannot and does not guarantee that proposals, bid or actual project or construction costs will not vary from the opinion of probable cost prepared by it.

7. **Construction.** This agreement shall not be construed as giving MSA, the responsibility or authority to direct or supervise construction means, methods, techniques, sequence, or procedures of construction selected by the contractors or subcontractors or the safety precautions and programs incident to the work of the contractors or subcontractors.

8. **Standard of Care.** In conducting the services, MSA will apply present professional, engineering and/or scientific judgment, and use a level of effort consistent with current professional standards in the same or similar locality under similar circumstances in performing the Services. The OWNER acknowledges that "current professional standards" shall mean the standard for professional services, measured as of the time those services are rendered, and not according to later standards, if such later standards purport to impose a higher degree of care upon MSA.

MSA does not make any warranty or guarantee, expressed or implied, nor have any agreement or contract for services subject to the provisions of any uniform commercial code. Similarly, MSA will not accept those terms and conditions offered by the OWNER in its purchase order, requisition, or notice of authorization to proceed, except as set forth herein or expressly agreed to in writing. Written acknowledgement of receipt, or the actual performance of services subsequent to receipt of such purchase order, requisition, or notice of authorization to proceed is specifically deemed not to constitute acceptance of any terms or conditions contrary to those set forth herein.

9. **Construction Site Visits.** MSA shall make visits to the site at intervals appropriate to the various stages of construction as MSA deems necessary in order to observe, as an experienced and qualified design professional, the progress and quality of the various aspects of Contractor's work.

The purpose of MSA's visits to, and representation at the site, will be to enable MSA to better carry out the duties and responsibilities assigned to and undertaken by MSA during the Construction Phase, and in addition, by the exercise of MSA's efforts as an experienced and qualified design professional, to provide for OWNER a greater degree of confidence that the completed work of Contractor will conform in general to the Contract Documents and that the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents has been implemented and preserved by Contractor. On the other hand, MSA shall not, during such visits or as a result of such observations of Contractor's work in progress, supervise, direct or have control over Contractor's work nor shall MSA have authority over or responsibility for the means, methods, techniques, sequences or procedures of construction selected by Contractor, for safety precautions and programs incident to the work of Contractor or for any failure of Contractor to comply with laws, rules, regulations, ordinances, codes or orders applicable to Contractor's furnishing and performing the work. Accordingly, MSA neither guarantees the performance of any Contractor nor assumes responsibility for any Contractor's failure to furnish and perform its work in accordance with the Contract Documents.

10. **Termination.** This Agreement shall commence upon execution and shall remain in effect until terminated by either party, at such party's discretion, on not less than thirty (30) days' advance written notice. The effective date of the termination is the thirtieth day after the non-terminating party's receipt of the notice of termination. If MSA terminates the Agreement, the OWNER may, at its option, extend the terms of this Agreement to the extent necessary for MSA to complete any services that were ordered prior to the effective date of termination. If OWNER terminates this Agreement, OWNER shall pay MSA for all services performed prior to MSA's receipt of the notice of termination and for all work performed and/or expenses incurred by MSA in terminating Services begun after MSA's receipt of the termination notice. Termination hereunder shall operate to discharge only those obligations which are executory by either party on and after the effective date of termination. These General Terms and Conditions shall survive the completion of the services performed hereunder or the Termination of this Agreement for any cause.

This agreement cannot be changed or terminated orally. No waiver of compliance with any provision or condition hereof should be effective unless agreed in writing and duly executed by the parties hereto.

11. **Betterment.** If, due to MSA's error, any required or necessary item or component of the project is omitted from the construction documents, MSA's liability shall be limited to the reasonable costs of correction of the construction, less what OWNER'S cost of including the omitted item or component in the original construction would have been had the item or component not been omitted. It is intended by this provision that MSA will not be responsible for any cost or expense that provides betterment, upgrade, or enhancement of the project.

12. **Hazardous Substances.** OWNER acknowledges and agrees that MSA has had no role in generating, treating, storing, or disposing of hazardous substances or materials which may be present at the project site, and MSA has not benefited from the processes that produced such hazardous substances or materials. Any hazardous substances or materials encountered by or associated with Services provided by MSA on the project shall at no time be or become the property of MSA. MSA shall not be deemed to possess or control any hazardous substance or material at any time; arrangements for the treatment, storage, transport, or disposal of any hazardous substances or materials, which shall be made by MSA, are made solely and exclusively on OWNER's behalf for OWNER's benefit and at OWNER's direction. Nothing contained within this Agreement shall be construed or interpreted as requiring MSA to assume the status of a generator, storer, treater, or disposal facility as defined in any federal, state, or local statute, regulation, or rule governing treatment, storage, transport, and/or disposal of hazardous substances or materials.

All samples of hazardous substances, materials or contaminants are the property and responsibility of OWNER and shall be returned to OWNER at the end of a project for proper disposal. Alternate arrangements to ship such samples directly to a licensed disposal facility may be made at OWNER's request and expense and subject to this subparagraph.

13. **Insurance.** MSA will maintain insurance coverage for: Worker's Compensation, General Liability, and Professional Liability. MSA will provide information as to specific limits upon written request. If the OWNER requires coverages or limits in addition to those in effect as of the date of the agreement, premiums for additional insurance shall be paid by the OWNER. The liability of MSA to the OWNER for any indemnity commitments, or for any damages arising in any way out of performance of this contract is limited to such insurance coverages and amount which MSA has in effect.

14. **Reuse of Documents.** Reuse of any documents and/or services pertaining to this project by the OWNER or extensions of this project or on any other project shall be at the OWNER's sole risk. The OWNER agrees to defend, indemnify, and hold harmless MSA for all claims, damages, and expenses including attorneys' fees and costs arising out of such reuse of the documents and/or services by the OWNER or by others acting through the OWNER.

15. **Indemnification.** To the fullest extent permitted by law, MSA shall indemnify and hold harmless, OWNER, and OWNER's officers, directors, members, partners, agents, consultants, and employees (hereinafter "OWNER") from reasonable claims, costs, losses, and damages arising out of or relating to the PROJECT, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of MSA or MSA's officers, directors, members, partners, agents, employees, or Consultants (hereinafter "MSA"). In no event shall this indemnity agreement apply to claims between the OWNER and MSA. This indemnity agreement applies solely to claims of third parties. Furthermore, in no event shall this indemnity agreement apply to claims that MSA is responsible for attorneys' fees. This agreement does not give rise to any duty on the part of MSA to defend the OWNER on any claim arising under this agreement.

To the fullest extent permitted by law, OWNER shall indemnify and hold harmless, MSA, and MSA's officers, directors, members, partners, agents, consultants, and employees (hereinafter "MSA") from reasonable claims, costs, losses, and damages arising out of or relating to the PROJECT, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself) including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of the OWNER or the OWNER's officers, directors, members, partners, agents, employees, or Consultants (hereinafter "OWNER"). In no event shall this indemnity agreement apply to claims between MSA and the OWNER. This indemnity agreement applies solely to claims of third parties. Furthermore, in no event shall this indemnity agreement apply to claims that the OWNER is responsible for attorneys' fees. This agreement does not give rise to any duty on the part of the OWNER to defend MSA on any claim arising under this agreement.

To the fullest extent permitted by law, MSA's total liability to OWNER and anyone claiming by, through, or under OWNER for any cost, loss or damages caused in part or by the negligence of MSA and in part by the negligence of OWNER or any other negligent entity or individual, shall not exceed the percentage share that MSA's negligence bears to the total negligence of OWNER, MSA, and all other negligent entities and individuals.

16. **Dispute Resolution.** OWNER and MSA desire to resolve any disputes or areas of disagreement involving the subject matter of this Agreement by a mechanism that facilitates resolution of disputes by negotiation rather than by litigation. OWNER and MSA also acknowledge that issues and problems may arise after execution of this Agreement which were not anticipated or are not resolved by specific provisions in this Agreement. Accordingly, both OWNER and MSA will endeavor to settle all controversies, claims, counterclaims, disputes, and other matters in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect, unless OWNER and MSA mutually agree otherwise. Demand for mediation shall be filed in writing with the other party to this Agreement. A demand for mediation shall be made within a reasonable time after the claim, dispute or other matter in question has arisen. In no event shall the demand for mediation be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations. Neither demand for mediation nor any term of this Dispute Resolution clause shall prevent the filing of a legal action where failing to do so may bar the action because of the applicable statute of limitations. If despite the good faith efforts of OWNER and MSA any controversy, claim, counterclaim, dispute, or other matter is not resolved through negotiation or mediation, OWNER and MSA agree and consent that such matter may be resolved through legal action in any state or federal court having jurisdiction.

17. **Exclusion of Special, Indirect, Consequential and Liquidated Damages.** Consultant shall not be liable, in contract or tort or otherwise, for any special, indirect, consequential, or liquidated damages including specifically, but without limitation, loss of profit or revenue, loss of capital, delay damages, loss of goodwill, claim of third parties, or similar damages arising out of or connected in any way to the project or this contract.

18. **State Law.** This agreement shall be construed and interpreted in accordance with the laws of the State of Iowa.

19. **Jurisdiction.** OWNER hereby irrevocably submits to the jurisdiction of the state courts of the State of Iowa for the purpose of any suit, action or other proceeding arising out of or based upon this Agreement. OWNER further consents that the venue for any legal proceedings related to this Agreement shall be, at MSA's option, Sauk County, Wisconsin, or any county in which MSA has an office.

20. **Understanding.** This agreement contains the entire understanding between the parties on the subject matter hereof and no representations, inducements, promises or agreements not embodied herein (unless agreed in writing duly executed) shall be of any force or effect, and this agreement supersedes any other prior understanding entered into between the parties on the subject matter hereto.

PHASE 1 – PROJECT ADMINISTRATION

TASK 1 – PROJECT MANAGEMENT

MSA will manage the established scope of services and budget throughout the project. Monthly invoices will be submitted to the County Engineer for review, approval and payment. Project Updates will be prepared and submitted to the County Engineer and accompany monthly invoices.

The project manager will ensure the project team is on schedule and allocate resources accordingly to meet established milestones and schedule.

MSA will perform QA/QC reviews on all deliverables prior to submitting to the County Engineer.

NOTE: For purposes of this project, the study area is defined as the roughly the area bounded by E 90th Street on the south, Highway 61 to the east, Crow Creek to the north, the railroad tracks to the west, and including all of the properties along Holden Drive and Brady Street. In total, this area includes approximately 75 acres. The MSA Survey team will confirm if the adjacent properties to the west or to the south contain stormwater infrastructure that would result in larger watershed delineation that includes regions outside of this described study area.

TASK 2 – MEETINGS

It has been stated that any meetings with the County Supervisors, Mt. Joy and its residents will be conducted by the County Engineer without any direct involvement from MSA and so attendance or preparation for these meetings are not included in this scope of work or budget.

It is assumed all meetings involving MSA staff will be conducted via Zoom or other conference-style online platform that allows for screen sharing. We anticipate three (3) meetings lasting no more than 1-hour throughout the duration of this project. One meeting will include County GIS staff to review data schema. Up to three (3) MSA staff will attend each meeting depending on agenda topics.

PHASE 2 – SYSTEM SURVEY AND GIS DATABASE DEVELOPMENT

TASK 1 – FIELD SURVEY OF EXISTING STORM SEWER SYSTEM

MSA will complete a field survey of existing storm sewer manholes, catch basins, inlets and outfalls within the Mt. Joy storm sewer system. Additionally, MSA will survey culvert crossings within Mt. Joy (culverts being defined as a straight storm drainage pipe passing under a road which is open on both ends and which has no branch lines). For culverts and storm sewer structures, MSA will survey the horizontal location and surface elevation of the casting for manholes, inlets, catch basins, and outfalls and invert elevations for pipes. MSA will also document the size (diameter) and construction material of pipes. MSA will shoot cross-sections at any known flooding areas. MSA will use a Trimble S6 Total Station for this survey. The horizontal and vertical datum for this project is the Scott County, Iowa Survey Control Network.

For storm sewer system survey, the anticipated field workflow process is to:

1. Open each structure (remove the casting)
2. Measure the horizontal cross-sectional dimensions of the structure
3. Measure down from the rim down to the structure bottom and to the invert (flowline) of each pipe flowing in and out of the structure.
4. Measure the vertical cross-sectional dimensions of each pipe
5. Document the pipe material (rcp, cmp, etc.)
6. Take a photograph of observed abnormal conditions (as determined in the field by the consultant)
7. Make a qualitative assessment of the physical condition of the structure
8. Tabulate collected data – either on hardcopy structure log or in digital data dictionary.

For culvert surveys, MSA's surveyors will collect photos of the inlet and outlet of each culvert crossing for purposes of identifying the hydraulic inlet condition as well as to provide a general assessment of the physical condition of the culvert. MSA surveyors will also make commentary on the general condition of the barrel of culvert as best can be observed without actually entering the culvert itself.

MSA's cost estimate is based on information provided in the RFP, which indicated that there was minimal information of the existing storm sewer system and no structures have been mapped. It is likely that private landowners have built stormwater structures and/or filled in waterways design to facilitate stormwater drainage. For the purposes of this scope and associated labor effort, MSA will assume there will be less than 25 structures. Should additional structures be identified, MSA will contact the County Engineer to amend this contract to include the additional storm structures.

MSA will attempt to determine the elevation of reported high water marks, if provided by the County or by property owners who approach MSA surveyors while conducted field activities. MSA surveyors will reserve the right to refuse surveys of private properties based on their judgment of their personal safety.

MSA will survey stormwater structures serving the north bound lane of Hwy 61 and areas to the west and north of E 90th Street.

Responsibility of County: It is assumed that the County will provide MSA's field crews with written documentation providing the authority to enter public easements and private property as necessary to reach storm sewer structures to be surveyed.

Assumptions:

- It is assumed that MSA will not require special permissions from property owners to access sites where survey needs to be conducted
- It is assumed that confined space entry will not be required to conduct surveys
- It is assumed that all structures are readily identifiable and accessible, i.e. not buried, bolted or welded shut.

Deliverables: One (1) electronic copy in PDF format of survey notes.

TASK 3 – COMPILE SURVEY DATA IN GIS FORMAT

MSA will reduce the field survey data collected in Task 2 into a GIS database format. MSA will develop and present the County with a draft data schema as part of the GIS deliverable. Photos and dip sheets from the site survey will be named to match the associated structure ID to facilitate easy attachment within the County's GIS system. Data collected in the field survey will be included in the GIS database. MSA will provide alignments (connectivity), length, and dimensions for storm sewer pipes connecting the individual elements included in the storm sewer system map.

PHASE 3 – STORMWATER SYSTEM MODELING

TASK 1 – CONSTRUCT WATERSHED COMPUTER MODEL

MSA will construct an XP-SWMM watershed model of the drainage system within the study area.

1. Develop hydrologic model input data
 - a. Delineate drainage areas
 - b. Develop relationships between actual measured impervious area and land uses within the study area to develop accurate runoff coefficients (Runoff Curve Numbers)
 - c. Determine land cover and underlying soil data for pervious areas.
 - d. Determine overland flow characteristics (times-of-concentration for RCN method)
2. Develop hydraulic model input data
 - a. Complete 1-D model data entry. MSA will electronically populate the model elements for nodes (generally speaking, manholes) and links (generally speaking, storm sewer pipes) using GIS and/or survey data describing the drainage system network.
 - b. Test of the 1-D model for system connectivity and continuity.
3. Debug Model. MSA will solve the model (integrated hydrologic and hydraulic models) and adjust as necessary to account for observed issues with instability or continuity losses.

TASK 2 – SOLVE WATERSHED MODEL AND COMPILE EXISTING CONDITIONS ASSESSMENT

MSA will solve the XP-SWMM model to determine runoff hydrographs which will be routed through each element of the modeled portion of the stormwater management system for the 5-yr, 25-yr, and 100-yr 24-hr rainfall events. MSA will reserve capacities within the storm sewer system for sump pumps based on the soil types in the area. MSA will prepare event-based flood inundation maps to determine the existing system's ability to convey/contain design even flows and runoff volumes. Upon completion of existing condition assessments, MSA will conduct a meeting (one of the meetings described in Phase 1, Task 2) to present the results of the modeling and

significant findings and to discuss how the findings may be used to direct efforts related to the design of solutions to flooding.

TASK 3 – ALTERNATIVES SOLUTION EVALUATION

1. MSA will identify culverts and trunk storm sewer systems that are unable to either convey 5-yr peak flows within the storm sewer pipe (some minor surface flows may be allowed) or 100-yr peak flows within public rights-of-way. Where capacity limitations are observed, MSA will prepare conceptual solutions where additional pipe capacity (upsizing existing pipes) are required and/or where additional stormwater detention may be provided to reduce peak flows.
2. MSA will consider water quality in the alternatives solution evaluation, to best align with the eligibility requirements for American Rescue Plan Act (ARPA) and the Environmental Protection Agency (EPA) Clean Water State Revolving Fund.
3. MSA will resolve the computer model to determine each alternative's ability to achieve design performance goals.

PHASE 4 – FINAL REPORT

MSA will prepare a final watershed plan report that includes an existing conditions assessment, and recommendations for proposed capacity improvements to achieve system capacity goals. These recommendations will be prioritized based on need and impact to the overall system.

Deliverables:

- Two (2) color hardcopies and one (1) PDF copy and one (1) MSWord copy of a final project report.
- Original electronic files for GIS data generated in support of modeling and mapping products developed in this phase of the project.

Exclusions. The preceding scope of work documents activities necessary to complete a study and report to identify potential drainage infrastructure capacity limitations.

The following items are not included in this scope of services:

- Soil borings
- NEPA coordination
- IDNR permits
- Conceptual Plans, Construction Plans, Details, Specifications, or Cost Estimates
- Public Hearings or Public Information Meetings
- Utility coordination, ONE Call
- Solicitation for Televising of Sewer Pipes*

*Note that this scope of work does not include a draft solicitation for review by the County Engineer, or review of the results of televising of the storm sewer pipes. If after MSA's survey of the existing stormwater system, it is determined that televising is necessary for this project, the County can request an amendment to this project for solicitation of Televising Sewer Pipes, review of the televising results, and integrating the televising into Phase 3 of this scope of work.

THE COUNTY AUDITOR'S SIGNATURE CERTIFIES THAT
THIS RESOLUTION HAS BEEN FORMALLY APPROVED BY
THE BOARD OF SUPERVISORS ON _____
DATE

SCOTT COUNTY AUDITOR

R E S O L U T I O N

SCOTT COUNTY BOARD OF SUPERVISORS

March 17, 2022

APPROVAL OF THE CONTRACT TO PERFORM PROFESSIONAL DESIGN SERVICES FOR
STORMWATER ANALYSIS IN UNINCORPORATED MT. JOY

BE IT RESOLVED by the Scott County Board of Supervisors as follows:

Section 1. That Scott County enters into a contract with
MSA Professional Services, Inc., to perform
professional design services for storm water analysis
in unincorporated Mt. Joy.

Section 2. That the County Engineer be authorized to sign
the contract document on behalf of the Board.

Section 3. That this resolution shall take effect immediately.