

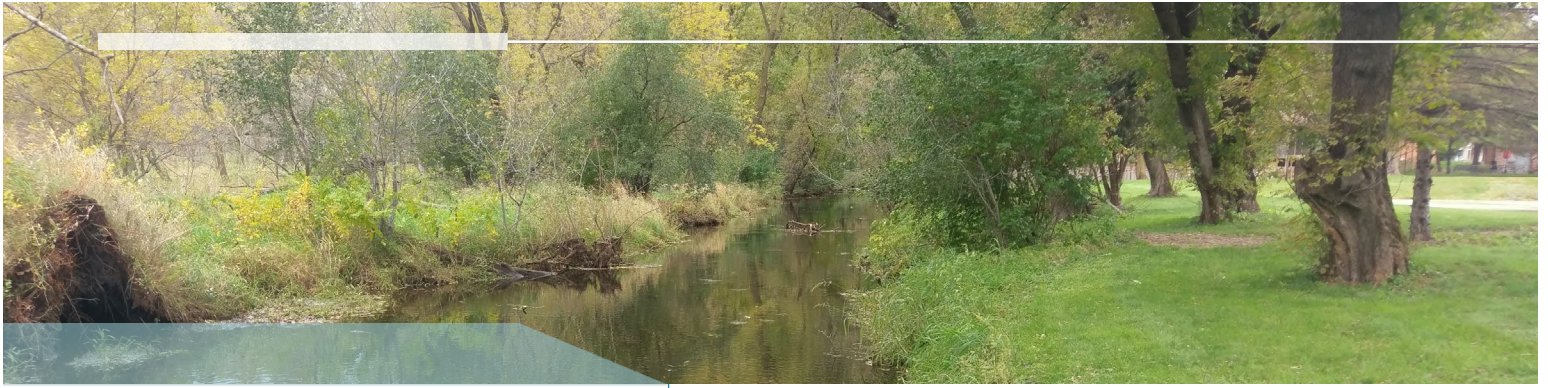


Proposal for

# PROFESSIONAL ENGINEERING SERVICES FOR 2021-2022

*An Experienced Team to Meet Your Communities' Needs*





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VIA Email: phil.belfiori@vlawmo.org

January 22, 2021

Phil Belfiori, VLAWMO Administrator  
Vadnais Lake Area Water Management Organization  
800 County Road E East  
Vadnais Heights, MN 55127

**Subject: An Experienced Team to Meet Your Communities' Needs**

Dear Phil:

We at Houston Engineering, Inc. (HEI) are eager to serve the Vadnais Lake Area Water Management Organization (VLAWMO) with reliable professional engineering services. As a trusted consultant who does not serve your member cities as a municipal engineer, we can maintain objectivity while providing cost-effective yet reliable solutions. This will ensure that our recommendations serve the goals and objectives of VLAWMO as a whole.

**Why choose HEI? Consider these benefits to VLAWMO:**



**Specialists with unique expertise:** Our team has experts in disciplines that VLAWMO will find very useful in the next couple of years. Emmy Baskerville not only has extensive experience advising Wetland Conservation Act (WCA) technical evaluation panels, but she also serves on the Minnesota Wetland Delineators Association Board. This experience will ensure you have sound advice for your WCA administration. Moriya Rufer is a statewide lake expert who will work with your staff to manage, protect, and improve your lakes. She also routinely facilitates meetings and public engagement efforts for watershed plan development. Having led countless water resource projects, we have had the opportunity to lead public meetings to educate landowners and Board members while listening to their needs, which enabled us to achieve consensus on these projects. Our combined experience will ensure your project stakeholders feel valued and are engaged for the entire project life cycle.



**We focus on your goals during project development:** At HEI, we focus on our clients' needs above all else. We are not looking to pad our bottom line by building out your projects to be more than they need to be. Our project development focuses solely on benefiting your community and recommending solutions that achieve VLAWMO's goals.



**Strong relationship with VLAWMO staff:** HEI has enjoyed working with VLAWMO staff over the years, from supporting your GIS mapping application to assisting with repairs for County Ditch 14/Lambert Creek with Brian and Tyler. We have developed an appreciation of VLAWMO's work style and strive to act as an extension of your staff. Also, we have had the pleasure of working extensively with you, Phil, while you served as the Rice Creek Watershed District (RCWD) Administrator. Our ongoing trust and strong relationship with VLAWMO staff will prove very useful when we begin project development.

As you lead VLAWMO to future successful endeavors, we hope you consider the HEI team to provide engineering services. We have strived to deliver quality products and you can expect nothing less in 2021-2022.

Sincerely,  
HOUSTON ENGINEERING, INC.



Christopher Otterness, PE  
Project Manager  
Cell: 763.913.2340  
cotterness@houstoneng.com



David Johnson  
Senior Advisor and Grant Specialist  
Cell: 612.239.3234  
djohnson@houstoneng.com

## COMPANY CONTACT

### Primary Contact



As Project Manager, Chris Otterness will be your main point of contact while serving VLAWMO. Chris has extensive experience serving similar organizations throughout the Midwest. He is eager to serve as your Project Manager to achieve VLAWMO's watershed goals.

Email: [cotterness@houstoneng.com](mailto:cotterness@houstoneng.com) | Phone: 763.913.2340



### ABOUT HOUSTON ENGINEERING, INC.

HEI is a community-focused engineering firm serving Minnesota with a variety of technical services that are key to natural resources management.

Conveniently located with eight offices across the Upper Midwest, we are committed to projects that can lead to visible improvements in the intersection of water quality and land stewardship. Our team includes engineers, scientists, and analysts, all seasoned in watershed management services.

### QUICK FACTS:

**Website:** [houstoneng.com](http://houstoneng.com)

**Local Office:** Maple Grove, MN

**Number of Employees Companywide:**

225 professionals

**Year Founded:** 1968



HEI WILL HELP YOU REACH YOUR WATERSHED GOALS THROUGH PROJECTS, STUDIES, AND PLANNING

### ABILITY TO COMPLETE PROJECTS IN A TIMELY/EFFECTIVE MANNER

We have a deep bench of team members committed to your projects. This will ensure we successfully complete our services within a solid timeframe. Once a project is identified under this contract, HEI will develop a customized schedule for the work. Projects are kept on budget using strict accounting methods and detailed project management. Our office in Maple Grove is a short half-hour drive from your offices, meaning we can easily stop by for projects meetings and presentations.



You can trust our team will deliver your scope of services in a timely and effective manner.

## PROJECT TEAM

### Organizational Chart

We have hand-picked a team that will work day-to-day with VLAWMO staff. Below, we introduce discipline leads, each of whom will be supported by project teams formed specifically from our local office of more than 50 staff members. Our Maple Grove office is supported by a wider growing company of more than 225 professionals. We can engage broader companywide support should specialty projects or workload make this a necessity.



**Chris Otterness, PE**  
Project Manager



**Dave Johnson, MS, ENV SP**  
Senior Advisor and Grant Specialist



**Alex Schmidt, MS, PE**  
Water Resources Lead



**Moriya Rufer, MS, CLM**  
Lake Management Lead



**Emmy Baskerville, CMWP**  
Wetland Conservation Lead



**Brian Fischer, MS**  
GIS Lead



**Greg Bowles, PE**  
Stormwater Management Review



**Lisa Odens, PE, CFM**  
Water Resources Engineer



**Drew Kessler, PhD**  
Water Quality Lead



**Jerry Neu**  
Survey Lead

## Key Personnel Bios



**CHRIS OTTERNESS, PE, PROJECT MANAGER**, specializes in water resource projects, watershed management, and public outreach and engagement. Chris played a key role in a statewide drainage initiative

to educate water resource decision-makers by leading public forums and stakeholder discussions.



**DAVE JOHNSON, MS, ENV SP, SENIOR ADVISOR AND GRANT SPECIALIST**, has more than 29 years of experience in the areas of water resources, stormwater management, watershed planning,

and sustainable development. His experience includes grants, permitting, environmental review, drainage plan development, stormwater manuals and ordinance, and more.



**ALEX SCHMIDT, MS, PE, WATER RESOURCES LEAD**, provides expertise in designing stormwater best management practices (BMPs) as well as completing BMP feasibility studies, water quality

modeling, hydrologic and hydraulic modeling, erosion restoration, stormwater development review, and more. **Recently, Alex helped solve tough stormwater management challenges by working with VLAWMO staff on the Lambert Creek project through modeling, analysis, and design.**



**MORIYA RUFER, MS, CLM, LAKE MANAGEMENT LEAD**, has more than 17 years of experience serving the water resources community, specifically working with lakes, water quality, aquatic invasive

species, and protection in central and northern Minnesota. She is also a skilled facilitator having completed specific training and dozens of meetings relating to comprehensive watershed management plans.



**EMMY BASKERVILLE, CMWP, WETLAND CONSERVATION LEAD**, is a Certified Minnesota Wetland Professional (CMWP) and a Minnesota Wetland Professionals Association Board Member. She

can assist you in implementing the state WCA and provide wetland delineation, water resources permitting, and environmental review services.



**GREG BOWLES, PE, STORMWATER MANAGEMENT REVIEW**, leads multiple watershed permitting programs and urban stormwater projects. Greg brings a common-sense approach to

permitting while still ensuring permits meet your watershed goals. He also manages many urban stormwater projects prioritizing cost-effective locations to treat stormwater, such as rain gardens, bioretention basins, underground stormwater storage systems, iron-enhanced sand filters (IESFs), reuse systems, and automated valving.



**DREW KESSLER, PHD, WATER QUALITY LEAD**, specializes in the areas of water quality, water resources management, wildlife ecology in aquatic systems, sediment source assessment, and

the total maximum daily load process. Drew leads water quality services for HEI companywide.



**LISA ODENS, PE, CFM, WATER RESOURCES ENGINEER**, performs duties as a Civil Engineer and Hydrologist. She is proficient in hydrologic and hydraulic modeling programs. Lisa's extensive

background includes stream restoration and a variety of both urban and rural modeling.



**BRIAN FISCHER, MS, GIS LEAD**, has been working with watershed districts for 19 years in the areas of GIS implementation services and software development for web and mobile applications. His history

working with VLAWMO has given him a strong understanding of your needs.



**JERRY NEU, SURVEY LEAD**, is a Survey Project Manager with HEI and coordinates all surveying efforts for HEI's Maple Grove office. With more than 24 years in the field, he brings unique experience with

surveying and engineering design.



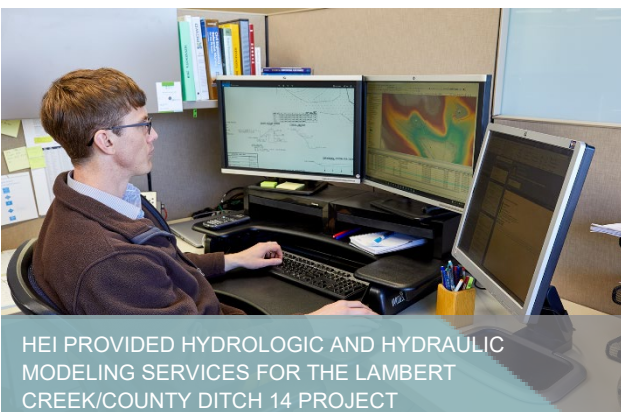
## SCOPE OF SERVICES

HEI has served 26 water management organizations and watershed districts as well as more than 30 counties throughout Minnesota, providing water management assistance in various forms. This work has been an incredibly rewarding experience. The following service areas identify the needs of VLAWMO, followed by a discussion of how HEI's approach to these services provides your organization with a sustainable solution.

### Stormwater Management

As a local water management agency, you must understand and manage the flow of water throughout your natural and man-made waterways. To fully understand how these complex systems interact and function, engineering studies involving modeling and analysis are implemented to analyze the hydrologic, hydraulic, and water quality properties of the system.

Hydrologic and hydraulic studies typically examine and quantify peak flow rates and velocities, volumes, and flood elevations. Due to our broad experience with hydraulic and hydrologic models, we can use virtually any model that best meets your needs. Our team has developed tools that derive model inputs through GIS. This greatly increases our accuracy and efficiency in model construction. These tools save you money, enabling us to spend less time entering data and more time analyzing solutions. Efficient model use also benefits you during time-critical events, such as pre-flood planning and flood event response services both during, and in the wake of, major flood occurrences.



HEI PROVIDED HYDROLOGIC AND HYDRAULIC MODELING SERVICES FOR THE LAMBERT CREEK/COUNTY DITCH 14 PROJECT

### Feasibility Studies

A local water management agency sometimes receives a recommendation in a feasibility report

that is neither practical nor constructible. Many times, even seemingly feasible projects fail because design and construction inspection duties are provided by an inexperienced engineer or technician. These potential pitfalls can be avoided by selecting a firm experienced in the construction of civil works projects. We pride ourselves in knowing how to turn feasibility studies into constructed projects.

**Other times, a municipal engineer provides recommendations from feasibility studies that favor their client over the other cities in an area. By serving as a third-party engineer with no loyalties to your member cities, we will avoid partiality to ensure our recommendations serve all of VLAWMO.**

### Design Assistance

Once the feasibility study has been completed, HEI can assist VLAWMO with design services. From conceptual to final construction plans, we can work with you for approvals every step of the way. Our team of skilled engineers will not only present designs that can be constructed and are sustainable, but ensure they meet your goals. A major part of design is working to meet stakeholder goals and address multiple needs. HEI has completed many large-scale projects for Twin Cities metro clients, turning concepts into reality.

### Grant Applications

HEI has assisted many successful grant applicants. Whether helping to identify the outcomes, developing your project approach, estimating budgets, or identifying the necessary local resources, we are happy to provide information you need for your application.

Grants provide an excellent opportunity for you to:

- accelerate project implementation,
- fund construction of specific projects,
- work cooperatively with your partners, and
- develop and implement innovative projects.

### VLAWMO Stormwater Policy

Serving watershed management agencies is our passion. We work to understand the unique qualities of each WMO we serve as well as the priorities of the management team, staff, and their constituents. Your watershed plan is the single most important guiding document for your local

water management agency. All operations, projects, and services of your local water management agency are directed by the plan in some way, shape, or form. Your funding and needs are continually changing, so your plan must be treated as a living document to be updated and amended as new information and resources become available.

The basis of watershed planning and stormwater policy is to create a clear vision for your watershed. Your vision should consider the unique characteristics of your watershed's physical, political, and social make-up and identify sustainable solutions to solve practical problems. Careful consideration of information from previous watershed projects and stakeholder interests are critical to our approach. The history of your watershed is important to us because it provides insight into the long-term results of prior management strategies and land use practices. For example, would protecting a water resource be more cost-effective to achieve your water resource goal rather than restoring it? **We respect the experience, opinions, and wishes of your staff and constituents, and we listen carefully to the views of those who have a vested interest in the mission and future direction of your watershed.**

### Meetings/Presentations

Effective communication and facilitation are essential to develop a durable project that is both technically sound and supported by all stakeholders. HEI regularly guides technical discussions related to project components, facilitating meetings in a way that ensures productive discussions. Our facilitation leaders have the professional experience to understand both the technical details of a project as well as the social and political implications, allowing us to frame a successful discussion that addresses each of these mutually important factors.

We understand VLAWMO will always appreciate support in presenting project information in a meeting or more formalized presentation. Confidently presenting technical results in an understandable way is a major benefit your engineering consultant can provide.

**At HEI, the diverse range of topics we present on is only topped by the diverse audiences we present to.** From leading public informational meetings to public hearings, we bring a bevy of local experience with communication recommendations and results. We know how to adjust language to the audience and have an in-house team of communications staff who can provide input on messaging, graphics, and presentation.



CHRIS AND MORIYA WILL PULL FROM PREVIOUS PROJECT EXPERIENCE TO LEAD STAKEHOLDER AND PUBLIC MEETINGS FOR YOUR PROJECTS

### Stormwater Management Review

Rules and standards are key elements in the management activities of most WMOs. They can ensure that water resource issues resulting from construction and development are addressed before they become a problem. Standards can also serve as design criteria for capital improvement projects (CIPs). Quality communication between the project proposer and the reviewer is critical to ensuring that standards are well-understood and adhered to. HEI brings diligence in rewriting rules and standards that may be poorly written or outdated, leading to frustration among the regulated community.

You will save time and energy, reduce frustration, and potentially save your constituents fiscal resources with our approach to development review programs. Our approach is cooperative rather than confrontational. We work with project proposers early in the process to clearly communicate the necessary steps to comply with standards while achieving project goals. Project proposers are treated with fairness, consistency, and respect. We help WMOs create and improve rules and development criteria, offering suggestions that can ultimately reduce your staff's workload.



## ADDITIONAL SERVICES

### Drainage Systems

Drainage system management (i.e., stormwater and ditch systems) follows a consistent life cycle for virtually any system. Following the steps will foster good decision-making and decrease the likelihood of delays, cost overruns, and legal challenges.

HEI assists drainage authorities, landowners, and other stakeholders with all aspects of the drainage system life cycle.



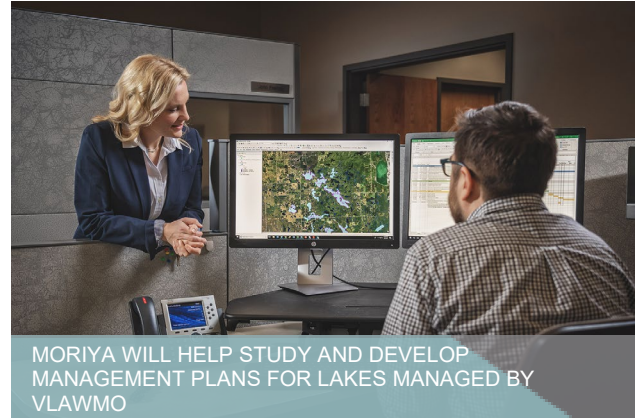
HEI has served the neighboring Rice Creek Watershed District (RCWD) and Phil Belfiori for more than 12 years, managing dozens of ditch systems in urbanizing areas and finding creative solutions to complicated drainage challenges. Our first project with VLAWMO was Lambert Creek/County Ditch 14, which is continuing to be implemented. As with any other drainage project, our recommendations for Lambert Creek struck a balance of preserving ecological resources while maintaining necessary conveyance for this important community stormwater outlet.

### Lake Management

VLAWMO manages several beautiful lakes, enjoyed by your community for recreation and natural function. **As Lake Management Lead, Moriya Rufer will provide her extensive lake management experience. She has served dozens of lake agencies and WMOs with lake analyses, studies, management projects, watershed planning, and more.**

We have also studied lakes for ecological restoration, bringing wild rice production back to

Lake Ogechie in central Minnesota through adjustments to the lake levels at Buckmore Dam. HEI has produced similar ecological benefits on Lake Christina after designing a pump system to adjust lake levels for waterfowl habitat.



### GIS and Technology

With a unique team of in-house programmers, HEI can develop and implement custom technology needed to solve a variety of watershed issues. One example is the GIS Viewer that we helped create for VLAWMO. Our team assisted your staff with setting up the GIS Viewer with GeoMoose, and recently converted it to an Esri ArcGIS Online Viewer to improve performance.

We have also serviced local watershed partners with:

- Permit management software (MS4Front) that was uniquely designed for cities and WMOs to organize their permit-related information,
- interactive maps,
- customized StoryMaps that can tell a project story through the context of geospatial information, and
- drainage management software (DrainageDB) designed to house and organize relevant records.

Whatever your technology need, our talented team can help you assess your options and develop web or mobile application technology.

### Survey

HEI has a full-service survey crew operating daily from our Maple Grove office. Using the latest technology and techniques, we can responsively help you obtain data needed for project development. Winter or summer, our team is at your service!

In addition to traditional field surveys, our team also uses tools such as aerial drones and RCV boats to capture field data in increasingly safe and effective ways.

## QUALIFICATIONS AND REFERENCES

### Related Project Examples

#### VLAWMO

##### Lamber Creek/County Ditch 14 Engineering Services

As with many public drainage systems across Minnesota, County Ditch 14 was constructed by straightening Lambert Creek nearly a century ago. As an aging system in an urban environment, its capacity has diminished while the flow and volume it is required to convey has increased due to drastic changes in land use.

In 2017, HEI began a project with VLAWMO to identify the historic condition of the ditch as it relates to modern usage and management as well as recommend repairs to the system. HEI is excited to see the study implemented through upcoming maintenance activities.



HEI'S SURVEY CREW ASSESSING A PORTION OF LAMBERT CREEK WITHIN THE VLAWMO

#### GIS/Technology Services

In 2011, we assisted VLAWMO's GIS staff by getting your GIS Viewer up and running with GeoMoose. Just last year, we again assisted your staff by converting the GIS Viewer to an Esri ArcGIS Online Viewer. Though your staff is more than capable of handling VLAWMO's day-to-day GIS projects, we have enjoyed providing these services to your team.

#### CITY OF MINNEAPOLIS

##### Flood Modeling Throughout Minneapolis

HEI has created nine detailed XPSWMM hydrology and hydraulic models, covering approximately 34% of Minneapolis. Through this

process, HEI developed the GIS modeling data management structure the City uses for their projects. This gives us the firsthand knowledge needed to investigate flood reduction practices such as CIPs, regulated stormwater infrastructure, grant considerations, and even hydraulically complex BMPs within much of the Mississippi Watershed Management Organization's (MWMO) watershed. **Learn more about our surface water modeling services: <https://bit.ly/362ZDhA>.**

#### MISSISSIPPI WATERSHED MANAGEMENT ORGANIZATION

##### East Region Minneapolis and St. Mary's Tunnel Watershed P8 Modeling

The MWMO hired HEI to complete a P8 water quality model of the eastern region of Minneapolis and St. Mary's Tunnel watershed. The model will improve the understanding of the area's stormwater quantity and quality and will be used to evaluate the effectiveness of current and proposed water quality projects for reducing pollutant transport to the Mississippi River.

#### RICE CREEK WATERSHED DISTRICT

##### Ramsey County Ditch 4 Stormwater Feasibility

The RCWD and City of Roseville hired HEI to complete a stormwater feasibility study along Ramsey County Ditch (RCD) 4. Due to development, the City wishes to replace the RCD 4 open channel ditch with storm sewer pipe to reduce maintenance issues, reduce downstream sediment loading, and make the area more conducive to redevelopment plans. The feasibility study also investigated adding temporary water quality and flood storage to provide stormwater treatment and attenuation of peak flows. In subsequent project phases, HEI developed project plans, prepared cost allocations based on benefit, and developed materials for proceedings required under Statute 103B.

#### CAPITOL REGION WATERSHED DISTRICT

##### Como Golf Course BMP Feasibility Study and Design

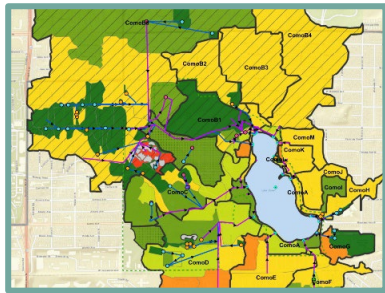
In 2016, the Capitol Region Watershed District and its project partners hired HEI to complete a BMP feasibility study for six potential BMPs in Como Park. From this study, the project partners chose to build the Northwest Golf Pond IESF bench along hole 3 and the Zoo Infiltration Basin and underground infiltration system along hole 7.

To construct these BMPs, HEI was asked to complete final designs. HEI performed extensive surveys, a wetland delineation, and additional ecological analysis of the site to understand its complex makeup. The IESF benches were retrofitted into existing ponds in a treatment train to ensure the highest possible water quality improvements while maintaining playable area on the golf course. Construction on hole 7 was completed in 2020 and construction on hole 3 is underway and is anticipated to be completed in summer 2021. [Learn more about this project and watch a video on our website: https://bit.ly/2Q6MNG2](https://bit.ly/2Q6MNG2)

## References

HEI has been providing these services to Minnesotan water resource managers for decades. Please feel free to contact the references below for more information.

### Hydrologic and Hydraulic Modeling



#### CITY OF MINNEAPOLIS

Paul Hudalla, PE

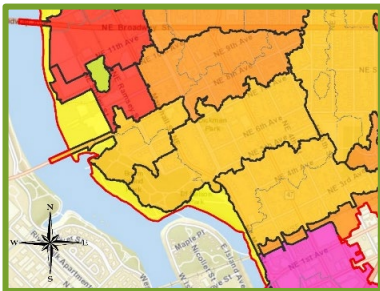
Phone: 612.673.3602

Email: Paul.hudalla@minneapolismn.gov

#### Reference Project:

- Flood Modeling Throughout Minneapolis

### Stormwater Management



#### MISSISSIPPI WATERSHED MANAGEMENT ORGANIZATION

Nancy Stowe, PE, Projects and Outreach Director

Phone: 612.746.4978

Email: nstowe@mwm.org

#### Reference Project:

- East Region Minneapolis and St. Mary's Tunnel Watershed P8 Modeling

### Feasibility and Design



#### CAPITOL REGION WATERSHED DISTRICT

Nate Zwonitzer, Water Resource Project Manager

Phone: 651.644.8888

Email: nzwonitzer@capitolregionwd.org

#### Reference Project:

- Como Zoo and Golf Course BMP Feasibility Study and Design

### Project Planning and Financing



#### RICE CREEK WATERSHED DISTRICT

Nick Tomczik

Phone: 763.398.3079

Email: ntomczik@ricecreek.org

#### Reference Project:

- RCD 4 Stormwater Feasibility



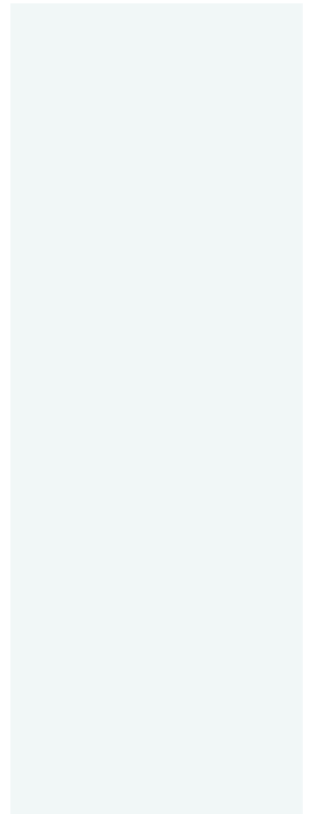
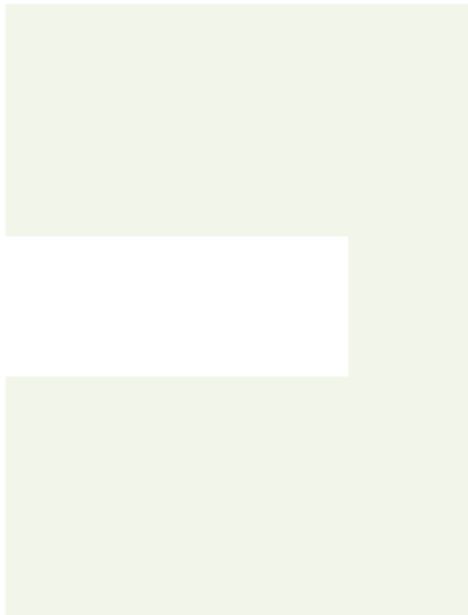
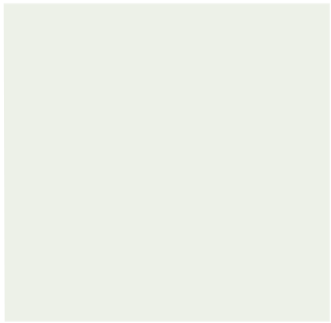
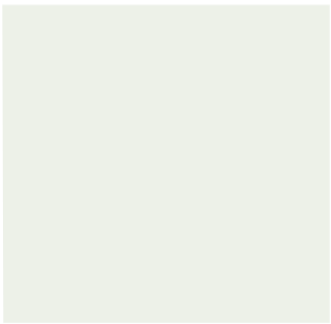
## 2021 FEE SCHEDULE

The following is a schedule of hourly rates and charges for engineering and surveying services offered by Houston Engineering, Inc. These rates are subject to a modest increase on January 1st of each year (typically no more than 5%).

Category	2021 Rates
Engineer I	\$129
Engineer II	142
Engineer III	161
Project Engineer	179
Project Manager	196
Sr Project Manager	215
Scientist I	\$129
Scientist II	142
Scientist III	162
Project Mgr – Environmental	190
Sr Project Mgr – Environmental	215
Hydrogeologist I	\$129
Hydrogeologist II	143
Hydrogeologist III	162
Sr Hydrogeologist	202
Construction Engineer	\$148
Sr Construction Engineer	175
Land Surveyor I	\$129
Land Surveyor II	148
Land Surveyor III	163
Project Mgr – Land Surveying	175
Sr Project Manager – Land Surveying	196
Survey Crews:	
1-Person Crew (+ equipment)	\$157
2-Person Crew (+ equipment)	191
3-Person Crew (+ equipment)	237
4-Person Crew (+ equipment)	265
Landscape Architect	\$137
CAD Technician I	\$88
CAD Technician II	101
CAD Supervisor	116
Designer I	\$135
Designer II	145
Sr Designer	156
Engineering Specialist	165
Technician Intern (all areas)	\$88
Technician I	\$101
Technician II	116
Sr Technician	129

Category	2021 Rates
Right-of-Way Technician	\$118
Right-of-Way Specialist	196
GIS Analyst I	\$96
GIS Analyst II	112
GIS Analyst III	129
Sr GIS Analyst	148
Project Manager – GIS	163
Sr Project Manager – GIS	190
Software Engineer I	\$112
Software Engineer II	129
Software Engineer III	148
Sr Software Engineer	162
Computer Technician	\$156
Communications Specialist	\$88
Sr Communications Specialist	98
Administrative Assistant	\$83
Sr Administrative Assistant	88
Planner	\$142
Senior Planner	196
Legislative/Grant Specialist	\$182
Expert Witness	236
Drone Pilot	\$137
Drone Visual Observer	54

Chargeable Expenses	Rate
Subsistence	Actual Cost
Mileage-Vehicles:	
2-Wheel Drive	IRS Standard Rate
4-Wheel Drive	IRS Standard Rate + \$0.20/Mile
GPS Equipment	\$25/hour/unit
Robotic Total Station	\$40/hour
ATV/Snowmobile/Boat	\$15/hour
ATV with Tracks	\$30/hour
Hydrone RCV	\$50/hour
Small UAS/Large UAS	\$25/hour / \$50/hour
Delivery, Postage, Printing	Actual Cost
Surveying Materials, Special Equipment, and other Materials required	Actual Cost
Subconsultants	Actual Cost + 10%



Houston Engineering, Inc. • 7550 Meridian Circle North, Suite 120 • Maple Grove, MN 55369 • 763.493.4522