





A Proposal For

EDUCATION AND OUTREACH SERVICES 2020-2022

Prepared for the Lower Minnesota River Watershed District Submitted by Young Environmental Consulting Group, LLC June 5, 2020



June 5, 2020

Lower Minnesota River Watershed District Attention: Linda Loomis 112 East Fifth Street, Suite 102 Chaska, Minnesota 55318

RE: Proposal for Education and Outreach Services

Dear Ms. Loomis:

Thank you for the opportunity to submit our proposal to provide education and outreach services to the Lower Minnesota River Watershed District (District or LMRWD).

The LMRWD is unique among watershed organizations in many ways; one such way is the historic role the District has played in the management of dredged material to ensure uninterrupted navigation along the Minnesota River's 9-foot channel used to transport agricultural products and commercial materials destined for United States and international markets. Despite this important role and function of the District, it is unclear whether residents of the District and the state of Minnesota understand the significance and importance of these activities.

Another unique characteristic of the District is the diversity of lands contained within its boundaries. Most watershed organizations' jurisdictional areas are typically urban or agricultural; the Lower Minnesota River Watershed District has a rich landscape composed of urban areas, scientific and natural areas, fish and wildlife federal land, trout streams and lakes, calcareous fens, and beautiful bluff lands overlooking the Minnesota River. The District historically has been modest in singing its praises; as such, we do not know how many have learned about its uniqueness and the treasures contained within the District.

Our team, consisting of Young Environmental (prime) and Barr Engineering Company (subconsultant), will help educate Minnesotans about the District's role in commercial navigation and engage them in activities that bring awareness to the uniqueness of District resources and will to help them responsibly coexist with, as well as preserve and protect, valued water and natural resources.

Our team will be led by me and Marcy Bean serving as principal consultant and education and outreach manager, respectively. As a hydrologist and credentialed facilitation professional, I will use my knowledge of the issues and opportunities facing the District along with over 20 years of professional experience to assist the board of managers and the administrator to create public and private partnership through education and outreach. As the education and outreach manager, Marcy will draw on her 17 years of experience in landscape architecture with an emphasis on educating and engaging stakeholders, innovative stormwater management, native landscaping and maintenance, and green infrastructure design in urban environments and lead Barr's unmatched depth and breadth of staff to provide the District with comprehensive water-resources management education services. A presentation of our team's qualifications, experience, and rate schedule is attached.

Thank you again for the opportunity to submit our proposal to continue the work we started with the District. If you have any questions regarding our composition or qualifications, please contact me at (651) 249-6974 or <u>della@youngecg.com</u>.

Sincerely,

Della Schall Young, PMP, CPESC. Principal/Owner

2 – Company Profiles, Approach to Service and Rates

Our team's company profiles are presented below.

YOUNG ENVIRONMENTAL CONSULTING GROUP, LLC



Group, LLC

Established in 2016, Young Environmental Consulting Group, LLC (Young Environmental) is a small, woman-owned, minority-owned (S/W/MBE) consulting firm that specializes in project management,

water and natural resources management and planning, hydrology and hydraulic modeling, stormwater and environmental compliance and permitting, and stakeholder engagement.

Since Young Environmental's formation in 2016, we have served as the technical consultant for the Lower Minnesota River Watershed District (District), where we are responsible for developing the District's 10-year watershed management plan and rules, stormwater management ordinance and plan reviews, floodplain hydrology and hydraulics model reviews, stakeholder engagement, and other activities as needed. We have also been retained by the City of Minneapolis to lead design and facilitated stakeholder engagement activities associated with the updates to their Stormwater Management Ordinance; the City of Saint Louis Park to lead public and stakeholder outreach for the Stormwater Management Plan Project; and the Vadnais Lake Area Water Management Organization (VLAWMO) to develop and coordinate a stakeholder engagement process to help the public, regulatory agencies, and VLAWMO staff understand user perceptions to identify and vet management solutions for East Goose Lake, West Goose Lake, and Wilkinson Lake, among others. Young Environmental brings commitment, unwavering integrity, and professionalism to all projects and partnerships.

BARR ENGINEERING COMPANY



Incorporated as an employee-owned firm in 1966, Barr provides engineering and environmental services to public and private clients. Our areas of expertise include water resources and natural resources design and management; civil, structural, and geotechnical design; environmental management and compliance assistance; and pediation of contaminated sites

assessment and remediation of contaminated sites.

Of our 900 engineers, scientists, and support specialists, more than 100 Bloomington-based employees, including seven certified floodplain managers, are engaged in water resources engineering and design, floodplain and stormwater management, wetlands, limnology, landscape ecology, hydrogeology, and geographic information systems. We have worked with more than 20 watershed management organizations and have served several of them continuously for more than 40 years, giving us insight to the challenges that watershed organizations face.

APPROACH TO SERVICE

Contract Administration

Critical elements to successful management and execution of the District's Education and Outreach Services are experienced project management, a willingness to listen and ask clarifying questions, and quick client response to requests. In her role as the client manager, Della will be responsible for negotiating contract terms, task orders, and other administrative activities as required between our team and the District. This structure provides the District a single responsible and accountable point of contact.

Project Controls: Scope, Schedule, and Budget

After the contract has been successfully negotiated, Della and Marcy will work with the District's Administrator to develop a comprehensive education and outreach work plan for the District. We plan to maintain schedule and budget controls through weekly meetings. During weekly meetings, Della will communicate the progress on the workplan.

Quality Assurance/Quality Control (QA/QC)

Our team will implement a comprehensive QA/QC process to make certain our team delivers high-quality work products. Della will identify reviewers and coordinate completion of QA/QC reviews. All reports and work products will be thoroughly reviewed by our editors and an internal expert, who is not related to the project, to ensure clarity and completeness before reports are submitted to the District.

Conflict of Interest Policy Statement

Our team understands that real and perceived conflicts of interest may arise on projects for cities within the District or with its partners. We will proactively review opportunities, and upon discovery of anything that might affect our performance on the project, we would immediately notify the Lower Minnesota River Watershed District administrator and take steps to resolve the conflict.

2 – Company Profiles, Approach to Service and Rates

Rate Schedule

The Young Environmental team fee schedule summarizes the range of billing rates for each staffing category. In many cases, these billing rates represent a wide range, based on varying levels of experience and expertise of staff within these categories. When building a team, appropriate staff are selected with consideration for both applicable experience and staff billing rates to make sure you receive high-value services for a reasonable cost.

Billing rates for 2021 and 2022 will be established at the end of the previous year. While we do not anticipate significant changes to these rates, we will be happy to provide 2021 and 2022 billing rates near the first of each respective year.

Staff Classification	2020 Rate+ (US dollars)
Principal	\$125-295
Advisor/Associates/Senior Engineer	\$125-250
Engineer/Scientist/Specialist III	\$125-175
Engineer/Scientist/Specialist II*	\$95-120
Engineer/Scientist/Specialist I*	\$65-90
Technician III*	\$125-150
Technician II*	\$95–120
Technician I*	\$50-90
Support Personnel II*	\$95–150
Support Personnel I*	\$50-90

+Rates do not include sales tax on services that may be required in some jurisdictions.

Notes:

- 1. Rates for litigation support services or other support requiring corporate officers will include a 30% surcharge.
- 2. For any nonexempt personnel in positions marked with an asterisk (*), overtime will be billed at 1.5 times the hourly labor billing rates.
- 3. A 10% markup will be added to subcontracts for professional support and construction services to cover overhead and insurance surcharge expenses.
- 4. Invoices are payable within 30 days from the date of the invoice. Any amount not paid within 30 days shall bear interest from the date 10 days after the date of the invoice at a rate equal to the lesser of 18% per annum or the highest rate allowed by applicable law.
- 5. Reimbursable expenses including, but not limited to, the actual and reasonable costs of transportation, meals, lodging, parking costs, postage, and shipping charges will be billed at actual cost.
- 6. Materials and supplies charges, printing charges, and equipment rental charges will be billed in accordance with a standard rate schedule.
- 7. Mileage will be billed at the IRS-allowable rate.

Advisory Committees Engagement and Outreach Plan

Our team understands successful development and implementation of an integrated, user-friendly engagement and outreach plan must have an intentional focus on authentic stakeholder engagement. Educational opportunities and emerging issues facing the District arise almost daily. Our team plans to work with the administrator to develop stakeholder engagement and outreach strategies that incorporates the technology of participation's (ToP®) participatory process. Key points of the process are highlighted in the graphic, and benefits of the using the ToP method are noted below.

The process, based on internationally applied ToP® facilitation methods, is designed from start to finish to build the commitment, engagement, and full participation of all stakeholders involved. It becomes a plan that people actually enjoy working on because buy-in is created during the collective collaboration and participatory dialogue embedded in these processes.

This process provides the opportunity to think creatively and collectively about issues to be addressed within the watershed, to get at the heart of some long-standing concerns, and identify targeted, catalytic actions that will help address them.

PROJECT EXAMPLE:

Feasibility Study for Lake Nutrient Reduction in Goose Lake and Wilkinson Lake

In 2017, Young Environmental assisted in the completion of a project on behalf of the Vadnais Lakes Area Watershed Management Organization (VLAWMO) to revisit whether current water-quality standards for East Goose Lake, West Goose Lake, and Wilkinson Lake are realistic and attainable. Our team conducted a feasibility study to determine the best options for achieving significant nutrient reductions in all three lake basins, with a priority on working toward delisting the impaired waters within the next five years.

Young Environmental, using the ToP process, developed, and coordinated stakeholder engagement that helped the public, regulatory agencies, and VLAWMO staff understand user perceptions and identified and vetted management solutions for each lake, with consensus around implementation.

Key Points of Emphasis in the ToP® Participatory Process

Participatory: Those involved in and affected by the implementation of the plan are in the best position to create the plan. They have, or have access to, all the wisdom, commitment, passion, and information they need to be successful in their efforts, as opposed to the plan being created by outside experts or upper-level managers and being given to someone else to implement. Success requires the appropriate active involvement of individuals at every level.

Comprehensive/Systems Thinking Approach: This approach utilizes the whole range of experiences and knowledge of the people around the table and includes as much information as possible in the thinking process, as opposed to narrowing the information base to that which is related to a single objective.

Futuristic: This process assumes that new creativity is called for in creating a tomorrow that is different from today vs. a conscious or unconscious continuation of ways we are operating currently. This is not to say that there are not valuable lessons to be brought forward from the past, but the emphasis is on our intuition about the future and what it needs.

Intentional: This process is biased in the direction of asking people what they really intend to do beyond having expert opinions on the topic. In the process of discovering all the possibilities, all the problems, or all the wishes, we ask what the narrow path of real intention is—the real decision with which we can align ourselves and encourage others.

Action Oriented: The success of a plan is not in the thickness of the document but in the actions people take that move the plan into action and reality. Once action starts, the pace of learning accelerates.

Implementation Is a Journey: Successful implementation of a plan involves the following:

- Successful creation and launching of the plan
- Sustaining momentum
- Re-maneuvering and redirecting as the unexpected happens (or does not happen)
- Documenting, celebrating, evaluating, and moving on

The implementation journey requires guides who have the facilitation skills and sensitivity to keep the focus of the ever-changing implementation group on the critical planned and unplanned priorities as they emerge in the light of our strategies.

Meetings, Workshops, and Trainings Facilitations

Our community-based approach of participation is inclusive, transparent, and open, providing everyone an opportunity to listen, learn, and participate. We understand that the best solutions often come from stakeholders. This also leads to greater acceptance and buy-in from stakeholders of selected solutions. We use many techniques in the public participation process, but we tailor them to the needs of our clients and their constituents. Our public participation methods and techniques include the following:

- Focus group meetings
- Workshops
- Public presentations and open houses
- Interactive worksheets

- Priority-ranking exercises
- Community walkabouts
- Web-based communications and reporting
- Trainings

PROJECT EXAMPLE:

Building Community Resilience to Climate Change Through a Public Planning Process

Barr recently worked with Riley-Purgatory-Bluff Creek Watershed District and the Nine Mile Creek Watershed District to implement a public planning process that educates and engages communities on the importance of climate change, current and anticipated impacts, and the need to build community resilience through planning. The project consisted of facilitating a series of workshops designed to identify local impacts, assess vulnerability, and identify specific strategies to increase community resilience. These strategies can then be used to influence local comprehensive plans. Barr assisted with planning and facilitating the workshop series and created the final report. Our first task involved conducting research that framed resilience issues for the cities within the watershed districts and presented the data at a day-long educational workshop. This information helped the stakeholders identify primary issues through facilitated discussions for them to identify issues, trends, and risk factors pertinent to their communities. The next workshop involved facilitated sessions to identify resiliency actions and projects to mitigate risks within the communities. Budgets are a limiting factor in all communities, so focus was paid to sorting out the most effective solutions that can be implemented with the least budget. The final workshop involved identifying and prioritizing longterm actions that can be incorporated into the cities' comprehensive plans. Barr used the similar approach with the South Washington Watershed District and its stakeholders in building support for resilience to climate change. To view the report of the effort, follow this link:https://www.swwdmn.org/wp-content/uploads/2018/03/FINAL SWWD-Climate-Resiliency-Plan-3 26 2018.pdf



3 – Proposed Service Areas and Project Examples

Graphic Design, Animation, and Infographics

Our team produces clear and compelling communications that illustrate environmental problems and solutions that inspire stewardship. Presentation graphics combine illustrative renderings, images, and text to communicate environmental design projects to clients and stakeholders. Our team works seamlessly between manual, hand-drawn illustrations, and digital rendering tools to create graphic products that are engaging and informative. We often supplement empirical data and reporting with two- and three-dimensional illustrations that help explain complex environmental issues and design concepts to nontechnical audiences. Our work includes interpretive signs and pamphlets, environmental identity systems, and interactive digital tools and features that engage the public.

Infographics have also become a standard tool to condense and relate complex processes and data to nontechnical audiences. Our team of designers specializes in producing infographics that are approachable, engaging, and specific to the content being conveyed.

East Chaska Creek Channel Stabilization Project, Chaska, MN

The District identified East Chaska Creek as a source of sediment entering the Minnesota River. In 2012, the District completed Strategic а Resources Evaluation, in which several streams, including East Chaska Creek, were assessed for current and ongoing erosion and maintenance issues. The project is located on a portion of East Chaska Creek in the City of Chaska, starting at Crosstown Boulevard, and extending approximately 1,500-feet downstream. The project



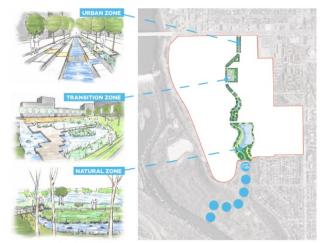
implements erosion control measures and debris removal; constructs grade control structures; and incorporates root wads, riprap armoring, and cross vanes to armor and protect the banks of the stream. We have completed the design, permitting, construction bid documents, and bidding process for the East Chaska Creek Stream Stabilization Project. Young Environmental developed an easy-to-understand project information sheet for the City of Chaska to provide to adjacent property owners and advise them of the project and tentative construction schedule.

Ford Assembly Plant Public Space and Stormwater Sustainability Assessment, St. Paul, MN

The Capitol Region Watershed District, working with the City of Saint Paul, hired Barr to help develop master plan concepts for managing stormwater and use of public space for the site. We gathered input and developed a district

stormwater management concept that links to stakeholder goals related to daylighting Hidden Falls Creek, restoring naturalized stream flows, placemaking, and sustainability. To help stakeholders understand and compare the relative value of the alternatives, Barr developed a customized decision-support approach.

Benefits and functions were compared to costs and impacts using traditional methods such as cost estimates and innovative analytical sustainability tools such as life cycle assessments and sustainable return on investment. The analysis and highly visual report provide decision-making support for selecting and articulating the value of resilient stormwater-management alternatives to the community and a potential developer.



3 – Proposed Service Areas and Project Examples

Interpretive Signage

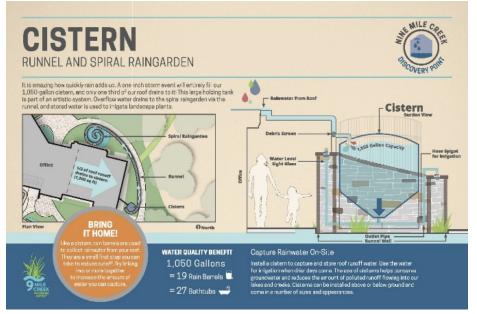
We believe in the old adage that a picture is worth a thousand words. We use illustrations and easily understood text to create educational materials and interpretive signage that make complex topics comprehensible and interesting. Our signage is designed to target a wide range of audiences, from school children to mall shoppers to pedestrians to motorists viewing signage from their cars.

PROJECT EXAMPLES:

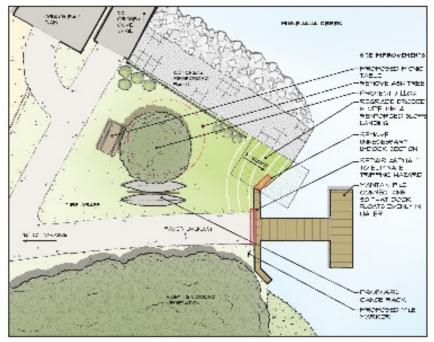
Discovery Point Interpretive Signs for Nine Mile Creek Watershed District, Eden Prairie, MN

Barr worked closely with the District to develop public art and educational components that explain the function of the stormwater treatment features present at the Nine Mile Creek Watershed District's new facility in Eden Prairie. The site serves as both office building and community outreach center for the NMCWD. Innovative stormwater treatment features and landscape restoration techniques present on site were illustrated through a suite of informative and colorful signs.

Signs integrated into the landscape draw attention to urban water and natural resource issues and support the clients' public outreach goals. Through



careful consideration of sign placement, as well as sign and support form and fabrication materials, the subsequent addition of the signs will become a coherent part of the full site design, rather than an afterthought.



Canoe Landings and Signage Master Plan, Minnetonka, MN

In 2014, Barr created graphics for the Minnehaha Creek Canoe Landings and Signage Master Plan on behalf of the Minnehaha Creek Watershed District in Hennepin County, Minnesota.

Services included comprehensive redesign of all canoe access points and development of a signage system along the entire creek corridor.

The goal of this project was to highlight the recreational canoe water trail that runs across the District for a total of 12 miles.

3 – Proposed Service Areas and Project Examples

Story Maps

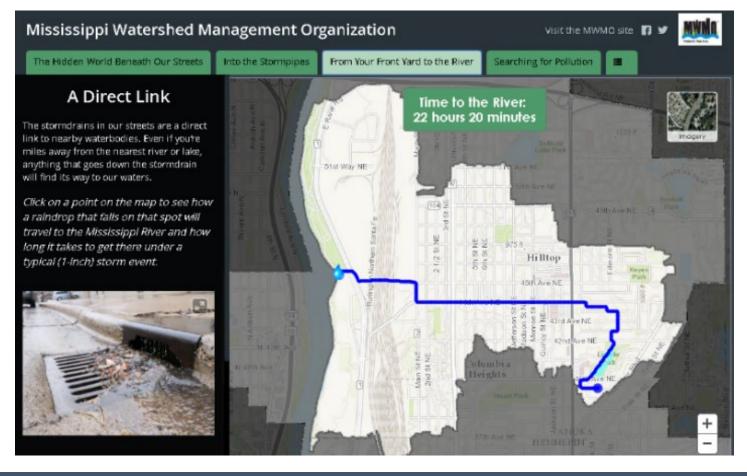
Geographic information systems (GIS) have long been used as a tool by watershed organizations for planning and communications purposes, from the days of hand-drawn maps on Mylar to advanced webmapping technology. Whether maps were placed in hard copy format in flood-control feasibility studies or embedded on a watershed's website to show water resources of concern, the integration of GIS and the narrative often resulted in a static and awkward product. To provide a more seamless storytelling experience better suited to communicating with the public, ESRI recently introduced the Story Map concept, which allows interactive maps to be combined with narrative text, images, and multimedia content in a highly mobile-enabled platform. Our GIS experts have created Story Maps for clients as well as for internal use to tell stories more graphically.

PROJECT EXAMPLE:

11CHF Urban Watershed Story Map, Mississippi Watershed Management Organization

The Mississippi Watershed Management Organization and Barr collaborated to build an ESRI story map to tell the story of one watershed—a 2,100-acre urban watershed that includes Fridley, Columbia Heights, and Hilltop. The client was looking for a range of alternatives to sharing the details of this project with the public in a digestible and engaging format. The story map helps the public connect themselves and their neighborhood with their water resource (the Mississippi River) and stormwater infrastructure (much of it buried). It includes multimedia, a story tour, and a geoprocessing tool created by Barr to dynamically trace the route of a drop of water from the watershed to the Mississippi River over streets and through storm sewers.

Mississippi Watershed Management Organization outreach staff members are using this tool and narrative in the organization's stormwater park and learning center and at neighborhood events to educate their residents about the importance of clean water. complete with а call to action. View the story map at https://www.barr.com/maps/mwmostorymap/index.html.



YOUNG ENVIRONMENTAL CONSULTING GROUP, LLC | 915 MAINSTREET, SUITE 4000, HOPKINS, MN, 55343



role: Principal Consultant/Client Mgr. 2020 billing rate: \$130/hr

Della Schall Young, PMP, CPESC, CTF



Principal Scientist/Planner BS, MS Water Resources Science and Water Quality

Della is a practicing hydrologist with over 20 years of stormwater management, watershed planning, and water quality modeling project experience. She is a skilled certified facilitator who generates consensus in both agreeable and disagreeable settings. As an accomplished speaker, she can convey the most complex engineering concepts to both technical and lay audiences.

Marcy Bean, PLA

Senior Landscape Architect Bachelor of Architecture BARR



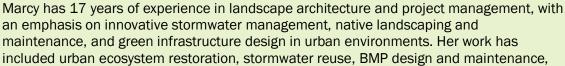
role: Education and Outreach Manager 2020 billing rate: \$125/hr



role: District Engineer/ GIS Manager 2020 billing rate: \$138/hr



role: Landscape Architect and GIS 2020 billing rate: \$100/hr



maintenance, and green infrastructure design in urban environments. Her work has included urban ecosystem restoration, stormwater reuse, BMP design and maintenance, and stakeholder facilitation. Prior to Barr, Marcy managed capital projects and communitybased grants to improve water quality in the Mississippi Watershed Management Organization. In that role, she facilitated the Citizen Advisory Committee to support grant awards, verifying that grants were aligned with the MWMO's watershed management plan and as directed by the board of commissioners. In partnership with MWMO outreach staff, Marcy supported education and outreach efforts, assisted with tours of watershed projects and community events, and helped develop a network of community organizations that supported the mission of the MWMO.

Katy Thompson, PE, CFM

Senior Associate Water Resources Engineer BS, Civil Engineering and BA Environmental Engineering



Katy is a water resources engineer with 17 years of experience in water resources design across the US. Her unique education background, heavy on studio and language arts at Macalester College and engineering principles from the University of Minnesota, helps her explain complicated technical concepts to a nontechnical audience. She has worked successfully with municipal partners and private residents by leading community floodplain workshops, technical trainings, and public outreach efforts to better educate the public on the National Flood Insurance Program and its implications for the community and individual landowners. She has also facilitated collaborative meetings and workshops to gain support and refine the goals of public infrastructure projects and plans and is comfortable presenting to councils, commissions, and boards.

Brendan Dougherty, PLA

Senior Landscape Architect MLA, Landscape Architecture



Brendan has 10 years of experience in sustainable landscape design, ecological planning, native plant community restoration, alternative stormwater management, and environmental site restoration. He develops construction plans for stabilizing and revegetating bank erosion sites along urban creeks and develops infographics, diagrams, and visualizations for permitting, public meetings, and internal marketing.

Personnel Roles

Using the primary duties, our team develop of matrix with the key personnel provided above added a very capable bench of professionals that ready to assist the District, as needed. Resumes for key personnel are attached and available upon request for team members.

EXPERIENCE WITH LMRWD-OUTLINED PRIMARY DUTIES

	Della Schall Young*	Marcy Bean*	Katy Thompson*	Brendan Dougherty*	Steve Woods	John Hanson	Jen Koehler	Matt Kumka	Greg Fransen	Nathan Campeau	Annie Breitenbucher	Josh Phillips	Kevin Menken
Organize and manage a Citizen Advisory Committee	*	*			*	*	*	*	*	*			
Prepare and implement an education and outreach plan aligned with WMP goals	*	*		*	*	*	*	*	*	*			
Manage cost share incentive and water quality rehabilitation grant program	*	*				*	*			*			
Prepare articles for publication on website, newsletter, and local newspapers	*	*	*	*	*	*	*	*			*		
Develop handouts and activities to use at community events	*	*	*	*	*	*	*	*	*	*	*		
Coordinate volunteer activities	*	*	*		*			*					*
Work with partners to develop a network of individuals and organizations to promote water and natural resources	*				*								
Assist preparation of annual report, project reports, public communications, etc.	*	*	*		*	*	*			*	*	*	*
Assist with organizing events such as river tours, community events, etc.	*	*	*		*		*			*	*		

* Indicates proposed key personnel



Appendix - Resumes





- Service Areas: Program Management
- Watershed Planning

Stormwater Compliance

Facilitation

Hydrology, Hydraulics, and Water Quality Modeling

Certifications:

Certified Professional in Erosion and Sediment Control (CPESC)

Certified Technology of Participation Facilitator (CTF)

Project Management Professional (PMP)

Education:

Master of Science, Water Resources Science, University of Minnesota, 2008

Bachelor of Science, Natural Resources and Environmental Studies, University of Minnesota, 1997

*Projects completed prior to Young Environmental Consulting Group, LLC

Della Schall Young, CPESC, PMP, CTF

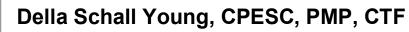
Della is a practicing hydrologist with over 20 years of stormwater management, watershed planning, and water quality modeling project experience. She is a certified professional in erosion and sediment control (CPESC) and a professional project manager (PMP) who uses her expertise to manage and coordinate efforts for Municipal Separate Storm Sewer System (MS4) stormwater management programs and Construction Erosion, Sediment and Stormwater Management Compliance and Inspections, Army Corps of Engineers feasibility studies, and Watershed Districts/WMOs. She is a skilled certified facilitator who generates consensus in both agreeable and disagreeable settings. As an accomplished speaker, she can convey the most complex engineering concepts to both technical and lay audiences. Her computer skills include the following applications: hydrologic/hydraulic (conveyance) models—XPSWMM, HydroCAD, Geopak Drainage; water quality models—P8, Pondnet, SWAT, and Minimal Impact Design Standards calculator.

Key Project Experience

Technical Consultant | Chaska, MN. *Client*: Lower Minnesota River Watershed District (LMRWD) *Role*: Since 2016, Young Environmental has provided technical consulting services to the LMRWD in the areas of watershed planning, engineering and project reviews, stream restorations studies, feasibility studies and design. Young Environmental has also represented the District at meetings with residents, local partners, state agencies and members of the Minnesota State legislature. The partnership with the District allows them to respond to challenges and opportunities that require technical presence and/or expertise that the District does not maintain in-house. Della serves as the contract manager, principal hydrologist and watershed management plan writer.

LMRWD Dredge Site Probable Cost Analysis | Savage, MN. *Client*: LMRWD. *Role:* The District serves as the local sponsor, responsible for providing placement site(s) for the U.S. Army Corps of Engineers (COE) to place dredge material from the Minnesota River to maintain a 9-foot-deep river channel. The purpose of the cost analysis was to develop budgetary estimates for potential capital improvement projects at the Site and for the operation and management (O&M) of the Site over a 10-year period and a 25-year period. Using the information generated, the District was successful in securing \$240,000 in both 2017 and in 2018 from the State of Minnesota. Della was the lead regulatory specialist responsible for identifying and summarizing federal, state and local requirements.

Stormwater Ordinance Update Project | City of Minneapolis, MN. *Client*: City of Minneapolis. Role: The City of Minneapolis recently finalized its SWMP. A condition of approval by the four affected WMOs—the Mississippi Watershed Management Organization, Bassett Creek Watershed Management Commission, Minnehaha Creek Watershed District, and Shingle Creek Watershed Management Commission—was that the city would update official controls, specifically City Code Chapter 54, Storm Water Management. To comply with the WMOs' imposed condition, the city retained Young Environmental to assist in managing updates to Chapter 54, its companion stormwater utility credits program, and stakeholder engagement. Young Environmental developed an adaptive stakeholder engagement plan and facilitated an interdepartmental partners' meeting as well as a community and technical advisory partners'





meeting. Young Environmental's project management services include participating in a qualifications review and selecting a national consultant to complete a national benchmarking study; coordinating the selected consultant's scope, schedule, and budget; and managing the project tasks and schedule. Della's role project manager, and developer and facilitator of the stakeholder engagement process

SLP Surface Water Management Plan | St. Louis Park, MN. *Client*: RESPEC and St. Louis Park. Role: Young Environmental is working with the City of St. Louis Park to develop its surface water management plan and municipal SWPPP. As a part of the project, Young Environmental has reviewed the City's SWPPP, supporting ordinance, standard operating procedures and emergency response protocols. Young Environmental completed the review, conversation with municipal staff and facilitated stakeholder meetings. Young Environmental has also developed the resulting Draft SWPPP which is being prepared for regulatory review. Della's role is project manager, lead author and stakeholder facilitator.

Illicit Discharge Detection and Elimination Plan | St. Paul, MN. *Client*: Capitol Region Watershed District. Role: Young Environmental was retained to develop the District's IDDE plan component of its SWPPP. Young Environmental research two local and two national IDDE plans, reviewing the current District IDDE program information (standard operating procedure, IDDE manual, and the District's MS4 Stormwater Pollution Prevention Plan), and gathered data from the MPCA) MS4 Digital Document Library. This collected will be used to develop an internal and stakeholder response process flowchart, discharge sampling protocol and program/division procedural recommendations. Della's role is project management and lead plan author.

Goldline Bus Rapid Transit | St. Paul, MN. *Client*: HNTB and Metropolitan Transit. *Role*: The planned nine-mile dedicated bus rapid transit line will connect St. Paul, Maplewood, Landfall, Oakdale, and Woodbury generally along Interstate 94, connecting people across the region to job centers, housing options, transit stations and key destinations in the I-94 corridor. Young Environmental Consulting Group, LLC (Young Environmental) provides environmental permitting research, assessment, and stormwater compliance services to the project management team. Della serves as the project manager and stakeholder coordinator.

Hiawatha Golf Course Assessment of Pumping Groundwater and Stormwater Project | Minneapolis, MN. *Client*: Minneapolis Park and Recreation Board (MPRB). *Role*: MPRB and the City of Minneapolis (City) needed surface, storm, and groundwater management issues related to the Hiawatha Golf Course area modeled and evaluated to protect neighboring homes and the existing recreational facility. Della serves as the project manager for the MPRB. Her role included managing tasks of the MPRB's consultant and staff, reviewing hydrology, hydraulic and water quality memos, assisting with the organization and facilitation of public meetings to meet schedule and budgetary goals.

Underground Stormwater Infrastructure Cost Research Project | Saint Paul, MN. *Client*: City of Saint Paul. Role: Della is collecting underground stormwater management facility design and installation cost data. Upon completion of data collection, she will analyze the data and present the results in a technical memorandum.



Experience Marcy Bean recently joined Barr with more than 16 years of experience in landscape architecture and project management, with an emphasis on innovative stormwater management, native landscaping and maintenance, and green infrastructure design in urban environments. Her work has included urban ecosystem restoration, stormwater reuse, best management practice (BMP) design and maintenance, and stakeholder facilitation.

Prior to Barr, Marcy managed capital projects and supported community-based efforts to manage stormwater at the Mississippi Watershed Management Organization (MWMO). Specifically, her role included:

- Managing budgets and contracts for more than \$1 million in annual grant awards for large-scale capital projects and community-based projects.
- Managing complex projects involving multiple partners, including public agencies, private developers, community groups, and individual landowners.
- Serving as the multi-partner capital project lead on the Northern Columbia Golf Course stormwater BMPs project, a joint effort between the MWMO, Minneapolis Park and Recreation Board, and City of Minneapolis to improve stormwater quality, mitigate flooding, improve ecological systems, and enhance recreational opportunities in Northeast Minneapolis.
- Designing a variety of stormwater BMPs and providing reuse and education services on the multi-phase project to transform Thomas Edison High School in Northeast Minneapolis into a model "green campus."
- Supporting community engagement and concept design to create a new vision for the Lincoln Playground in North Minneapolis, with a focus on improving stormwater treatment for the large site.
- Assisting with stormwater reuse at Westminster Presbyterian Church in downtown Minneapolis. The system uses recycled stormwater for flushing toilets, irrigating onsite vegetation, and feeding a decorative fountain along Nicollet Mall.
- Providing grant support and facilitation for a project to transform Masjid An-Nur in North Minneapolis into an "eco-mosque" focused on sustainability and environmental justice, including the design and construction of rain gardens to help solve persistent drainage issues.

At a landscape architecture firm in the Twin Cities area, Marcy's work involved:

- Managing landscape planning and design projects emphasizing stormwater management and sustainability.
- Coordinating consultants, supervising staff, and assessing budgets to enable timely project completion.
- Completing consulting tasks for a national product line for urban tree growth and stormwater management, including product development and marketing as well as technical review for quality assurance.



- Designing a sustainable landscape for the University of Minnesota's 17th Avenue Residence Hall in Minneapolis.
- Providing urban design and stormwater management for the 2nd Avenue streetscape redevelopment project for the City of Calgary.
- Developing plans and specifications for native habitat restoration as part of Metropolitan Council Environmental Services' Hopkins force main construction project.
- Education Bachelor of Architecture, Iowa State University College of Design, 2003
- **Registration** Professional Landscape Architect: Minnesota
- **Certification** Certified Arborist, International Society of Arboriculture Stormwater Best Management Practice Maintenance, University of Minnesota
- Software AutoCAD Civil 3D, Illustrator, InDesign, Photoshop
- **Presentations** Environmental and Water Resources Institute Operations and Maintenance Conference, Lessons Learned from the Towerside District Stormwater System, July 2019

Iowa Stormwater Conference, Towerside District Stormwater System, March 2019

Water Environment Federation's Technical Exhibition and Conference, New Orleans, *Towerside District Stormwater System*, October 2018

Resilient Cities, 4th Street Landscape Plan for Habitat, October 2018

Technical presentation for Contech Engineering Solutions, *St. Anthony Regional Treatment Facility Operations and Maintenance*, November 2017

Minnesota Pollution Control Agency webinar, Tree-based Bioretention, May 2017





Service Areas:

- -Water Resources Design
- Public Infrastructure Design and Construction
- Hydrologic and Hydraulic Modeling
- -Watershed Planning
- Project Permitting

Certifications:

Professional Engineer in California, Colorado, Minnesota, Montana, and Texas

Education:

Bachelor of Science in Civil Engineering, University of Minnesota, 2003

Bachelor of Arts in Environmental Engineering, Macalester College, 2003

*Projects completed prior to Young Environmental Consulting Group, LLC

Katy Thompson, PE, CFM

Katy Thompson is a water resources engineer with 17 years of experience in water resources design across the US. She applies her engineering background to support work in public infrastructure, stormwater, and drainage design and construction related to rivers and streams. She has worked on and managed projects ranging from large-scale, federal flood-control projects to small-scale best management practices (BMPs) for private property owners.

Katy's background includes extensive hydrologic and hydraulic modeling of river and urban storm drainage systems using various software platforms. As a Certified Floodplain Manager, she has extensive experience working with permitting agencies to ensure that proposed projects meet all federal, state, and local criteria for floodplain impacts, fish passage, and scour potential. She has also worked successfully with many communities and private residents by leading community workshops, trainings, and outreach efforts to educate the public on the National Flood Insurance Program and its requirements.

Key Project Experience

On-Call Engineering Services | Lower Minnesota River Watershed District. Since joining Young Environmental, Katy has been the primary lead for project reviews and funding requests for the Lower Minnesota River Watershed District. She coordinates with District staff to review permit applications and provide feedback to the Board on how to proceed and any actions that need to be taken.

Fen Sustainability Gaps Analysis | Lower Minnesota River Watershed District. Katy provided quality control reviews and managed the final coordination of the LMRWD Fens Sustainability Gaps Analysis, including managing the development and review of the District's climate assessment, monitoring recommendations, and responses to agency comments.

East Chaska Creek Bank Stabilization | Chaska, MN. Katy provided quality control reviews for the final construction plans and documents for the LMRWD East Chaska Creek Restoration Project. She worked with partners to apply for and ultimately obtain a no-rise certification and public waters permit from the Minnesota Department of Natural Resources.

Area 3 Slope Stabilization Project | Eden Prairie, MN. In concert with the District and City of Eden Prairie staff, Katy attended a site visit of the Area 3 bluff erosion and is currently working on developing a comprehensive desktop analysis of the area using available GIS data, historic aerial images, and literature sources to determine the current rate of erosion and potential hot spots for future erosion in the area.

Online Permitting Development | Lower Minnesota River Watershed District. Working closely with the District Administrator and technical consultants, following the implementation of the LMRWD Rules, Katy developed a new LMRWD Rules and Permitting pages for the LMRWD website. These new pages cover the District's authority to implement rules, rule administration process, and online application forms for both individual municipal permits.

Gully Inventory Update | Lower Minnesota River Watershed District. Katy has led the coordination of an updated gully inventory in the LMRWD, including coordination of intern training and workloads, review of background data from partner cities, and development of online data collection forms and mapping to facilitate field data collection efforts.

Gold Line Bus Rapid Transit | Saint Paul, Maplewood, Oakdale, Woodbury, MN. Katy has provided reviews of the preliminary designs and facilitated discussions with municipal and county partners on the potential permitting needs the project may have in their individual jurisdictions.





Shell Rock – Winnebago River One Watershed One Plan | Albert Lea, MN* Katy led the data aggregation efforts, reviewing and consolidating data from multiple sources, to determine the priority concerns in the watershed from the perspective of residents, landowners, and local and state regulators. She also facilitated the first local Advisory Committee meeting to help prioritize the resources and issues first identified by the local Steering Committee for the final One Watershed One Plan.

Shell Rock River Water Quality Credit Trading Program | Albert Lea, MN* Katy oversaw the development of several water quality models to determine the baseline pollutant loading scenario for the Shell Rock River Watershed District and City of Albert Lea Water Quality Credit Trading Program. By using EPA-SWMM, her team determined the existing conditions total phosphorus and total suspended solids loading from the City of Albert Lea into Fountain Lake. The results from this baseline analysis will be used to establish the water quality credit trading ratios and prices. As a part of this work, Katy and her team also evaluated several other modeling platforms using selection factors that included software costs, ease of use, and accuracy compared to the SWMM models for several example watersheds. These case studies were used to develop suggestions for alternative methods, including MPCA Estimator and HydroCAD, to reduce costs for future water quality credit trading programs in Minnesota.

Stormwater and Development Permit Programs | Cities of Circle Pines and Hugo, MN* As Tier II cities, the Cities of Circle Pines and Hugo assumed permitting authority from the Rice Creek Watershed District for stormwater management, erosion control, wetland mitigation and floodplain management. Katy was the permit program manager for both cities and issued stormwater permits for development and redevelopment within the cities' jurisdictions while ensuring compliance with Rice Creek Watershed District Rules, as well as local stormwater ordinances. She also coordinated with the District on complicated development reviews, variance applications, expired permits, re-development compliance, construction inspections, and annual program audits.

Federal Emergency Management Agency (FEMA) Floodplain Assistance | Various Municipalities; Anoka, Hennepin, and Wright Counties, MN* As a CFM, Katy has extensive experience in assisting clients through the FEMA map-revision process, as well as with providing them guidance on how to effectively manage floodplain developments. She has facilitated community trainings for the public and internal trainings for municipal staff on how to file individual Letters of Map Changes using the MT-1 forms following FEMA map updates and regularly provides assistance with Conditional Letter of Map Revisions for individual developments and flood mitigation projects, such as floodwalls and levees, with the FEMA MT-2 forms and the new eLOMA and Online LOMC websites.

Savage Fen Stormwater Management Plan | Savage, MN* Katy developed a complex hydraulic model for the City of Savage to determine the existing flows into the Savage Fen Special Resource Area. Data was collected from the City GIS department and from record drawings and used to build a complex XPSWMM model that covers the majority of discharges to the Savage Fen and the Credit River. This model will be used to help the City plan future land developments by protecting the existing hydrology of the Fen.

City of St. Louis Park On-Call Hydrology and Hydraulics Services | St. Louis Park, MN* Katy has served as point of contact with the City of St. Louis Park, coordinating short-notice model reviews and updates as requested by city staff. Example projects have included evaluation of the short-and long-term effects of the Hannan Lake emergency pump station, coordination of regional



Katy Thompson, PE, CFM

stormwater model development with the City of Minneapolis, and review of Dakota Park flood elevations.

Surface Water Management Plan | St. Louis Park, MN* Katy served as project manager and lead modeler to develop comprehensive EPA SWMM models of the entire City of St. Louis Park, inclusive of multiple stormwater lift stations and diversions. The SWMM models cover an area of 9,500 acres, including 2,483 nodes and 83 miles of storm sewer. Deficiencies in the existing stormwater conveyance system, flood-prone areas, and water quality mass loading were identified using the modeling results. The modeling results are included in the City's Surface Water Management and 2040 Comprehensive Plans and will be used to identify future projects and update the Capital Improvement Plan.

Northeast Lino Lakes Comprehensive Stormwater Management Plan | Lino Lakes, MN* As project manager, Katy worked closely with City and Rice Creek Watershed District staff to develop a Comprehensive Stormwater Management Plan (CSMP) for the future build-out of the Northeast Lino Lakes area. This plan included detailed hydraulic modeling from 30 InfoSWMM and unsteady-state HEC-RAS models. The proposed plan includes regional stormwater and floodcontrol management facilities to preserve the agricultural drainage system rights, provide additional capacity for future stormwater needs, and provide flood control and water quality treatment for downstream impaired water bodies. The project used the City's Conservation Design Framework to develop a multifunctional greenway corridor design, in lieu of a traditional stormwater sewer system. Additional components of this project included stakeholder outreach and public engagement through public mailings, resident and landowner workshops, and multiple presentations at planning commission and city council meetings. The plan has been approved and construction began in the spring of 2019.

Local Surface Water Management Plan | Lino Lakes, MN* Katy led the development of the updates to Lino Lakes' Local Surface Water Management Plan, including coordination with the overall 2040 Comprehensive Plan development and agency requirements. She presented the revisions and updates to the planning commission and city council on multiple occasions.

Roseau River Wildlife Management Area Pool 3 Outlet, Greenbush, MN* Purpose of the project was to prepare a preliminary engineer's report to address combining goals of the Roseau River Watershed District and Minnesota Department of Natural Resources to increase the effectiveness of the RRWMA to store or convey water for flood prevention. Structure capacities will be increased to allow better regulation of water levels during nesting periods, as well as several other resource enhancements. Katy developed an ecological systems function model to evaluate the potential impacts of project alternatives on wild rice habitat.



Experience Brendan Dougherty is a professional landscape architect with over nine years of experience in ecological planning, native plant community restoration, sustainable landscape design, alternative stormwater management, and environmental site restoration. He assists with development of construction plans for green infrastructure, landscape design, and creek stabilization projects. He also develops infographics, diagrams, and visualizations for interpretive signage, public meetings, and reports. Brendan's experience at Barr includes:

Ecological planning and native plant community restoration

- Conducting an ecological inventory in cooperation with park planning efforts for the City of Edina. Work included assessing ecological communities within the Braemar Park and golf course complex. Report included an overview of the plant communities within the park and management recommendations.
- Assisting with construction plans, specifications, construction administration, and development of educational materials for restoration of the Scenic Heights School Forest in Minnetonka, Minnesota.
- Developing restoration and vegetation management plans for stabilization of an eroded slope at Lilydale Regional Park in St. Paul, Minnesota.
- Assisting with the assessment of ecological quality for targeted undeveloped parcels within District 6 of St. Paul, Minnesota. Provided management goals, strategies, and opportunities for the study area based on desktop and field evaluations.
- Assisting in the development of construction plans for stabilization and revegetation of bank erosion sites along multiple urban creek stabilization projects.
 - Developing restoration plans for Lower Riley Creek, a multi-year project that began in 2017. The project boundaries include a section of the creek that is severely eroded and has many bank failures and a deeply incised channel.
 - Conducting a tree survey and creating a tree replacement plan along a threequarter-mile stretch of Lower Riley Creek in Eden Prairie, Minnesota.
- Assisting with development of a conceptual ecological restoration design for Kingsbury Bay within the St. Louis River Estuary. This work involved analyzing cut/fill quantities for proposed restoration goals, developed plan renderings, and designed informational brochures.
- Assisting with development of vegetation maintenance plans and assessing pollinator plant establishment efforts at multiple solar garden sites throughout Minnesota.
- Developing detailed vegetation screening and restoration plans for a solar garden in Woodbury, Minnesota.
- Serving as lead landscape designer for the stabilization and restoration of two island sites at Carleton College in Northfield, Minnesota.
- Assisting with planting and restoration plans, details, cost estimation, and construction administration for Hall's Island Park in Minneapolis, Minnesota.



Sustainable landscape architecture

- Serving as one of the lead landscape designers for development of the West Side Flats stormwater feature that also serves as a park amenity to local residents. Helped develop design concepts, materials for public meetings and construction documents, and assisted with stormwater feature placement and sizing.
- Designing a central courtyard plaza and front entrance plantings for an active central common area at the College of Saint Benedict in St. Joseph, Minnesota. Developed a calming water feature that integrates an existing statue into a contemporary plaza design. Served as lead designer to develop concept plans, cost estimation, and construction drawings within a tight timeline.
- Serving as landscape designer for the College of Saint Benedict's north entrance, street, landscape, and bus stop redesign.
- Assisting as a landscape designer for the Nine Mile Creek Watershed District headquarters and water resource center site, which includes stormwater harvesting and reuse and various bioretention practices as well as native woodland, wetland, and savanna restoration.
- Assisting with creating concept plans for Hamline University's north entrance parking lot, president's house, and recreation courts.
- Serving as one of the lead landscape designers for the Minnehaha Creek canoe landings and signage master plan, which includes comprehensive redesign of all canoe access points and the signage system along the entire creek corridor.
- Serving as one of the lead landscape designers for the University of Minnesota Rochester's Broadway Avenue site, which includes grading, planting design, and habitat structure integration.
- Serving as one of the lead landscape designers for recreational facilities impacted by the second and third phases of the Mouse River enhanced flood protection project, which includes golf-course hole relocation, grading, and recreational trail and park concepts.
- Developing detailed planting plans, a cost estimate, and specifications for the New Brighton water treatment facility.

Alternative stormwater management

- Assisting with the development of a comprehensive stormwater management plan at the Miller Hill Mall to design a strategy for lowering thermally elevated stormwater runoff into Miller Creek, a designated trout stream with a temperature impairment.
- Developing concept plans and renderings and deploying benefit/cost analysis tools to profile the potential value of two stormwater and public-realm master-plan design concepts for redevelopment of the Ford Plant site in St. Paul, Minnesota.
- Supporting development of the feasibility and framework for a district stormwater system (shared stacked function, green infrastructure) in the Prospect Park



neighborhood of Minneapolis. Helped developed schematic design and estimated costs of the system.

- Helping assess alternatives and developing benefits and costs based on conceptual design and estimated impacts for the Hiawatha Golf Course. Efforts helped the Minneapolis Park and Recreation Board gain a complete understanding of golf course conditions, demonstrated potential water management impacts, and evaluated cost benefits of maintaining an 18-hole golf course or changing space usage.
- Developing impervious surface reduction and green infrastructure retrofit features for multiple school, church, and commercial sites located in the Ramsey-Washington Metro Watershed District.
- Developing a boat launch, rain garden, and impervious surface reduction plan for the Lake Phalen Lakeside Activity Center in St. Paul, Minnesota.

Interpretive and educational design

- Providing interpretive sign designs for the Mississippi Watershed Management Organization headquarters in Minneapolis, Minnesota.
- Providing interpretive sign designs for the Nine Mile Creek Watershed District's Discovery Point headquarters in Eden Prairie, Minnesota.
- Assembling a graphical report highlighting the Hiawatha Golf Course pumping and alternative use analyses completed by Barr.
- Developing an original infographic, presentation templates, and color schemes for the City of St. Cloud Public Works.
- Developing infographics, diagrams, and visualizations for permitting, public meetings, and internal marketing.
- Evaluating ecological systems within the Minneapolis Park and Recreation Board system and developing illustrative maps to help plan and prioritize sustainable management activities.

Prior to joining Barr, Brendan gained experience as a restoration field crew leader with Applied Ecological Services in Prior Lake, Minnesota, where his responsibilities included:

- Managing restoration implementation activities such as site surveying, mapping, planting, seeding, erosion control, prescribed burns, and equipment operation.
- Assisting with restoration designs.

Brendan also served as a wetland monitoring intern at the Minnesota Board of Water and Soil Resources in St. Paul, where his work included:

- Identifying and surveying vegetation communities for the Natural Resources Conservation Service Wetlands Reserve Program.
- Delineating vegetation communities using handheld GPS systems.
- Creating GIS maps from collected data to be used in restoration management.



- Developing content for a wetland plant identification guide.
- Assembling online documents summarizing the functional benefits of native plants.

He also worked at Great River Greening, a non-profit organization that leads communitybased restoration of natural areas in the Twin Cities area. As a lead restoration technician, Brendan specialized in prairie, wetland, and woodland restoration. His responsibilities included:

- Assisting with project development and implementation, scheduling, updates to company environmental policies, vegetation inventory, and mapping.
- Coordinating with project managers, businesses, agencies, and private residents to accomplish project goals and resolve potential concerns.
- Managing volunteer events.

In addition, Brendan served as a Conservation Corps program manager at the Community Design Center of Minnesota (Urban Roots) in St. Paul, where he was responsible for:

- Supervising a crew of 14- to 18-year-old students working on restoration projects on St. Paul's East Side.
- Designing rain gardens to be installed by interns.
- Developing environmental education programs for interns.
- **Education** Master of Landscape Architecture, University of Minnesota, 2013

BA, Biology (Minor: Art History), Hamline University, 2008

- Registration Professional Landscape Architect: Minnesota
- Software Adobe Creative Suite, Microsoft Office Suite, ArcGIS, Sketch Up, AutoCAD, CSS/HTML