WISCONSIN CLEAN MARINA PROGRAM

UW SEA GRANT INSTITUTE

Proposal for Conceptual Design and Engineering Plan for Stormwater Improvements and Boat Washing Station at Kewaunee Marina

September 17, 2021

Ruekert • Mielke

Ruekert • Mielke
1400 Lombardi Ave, Suite 101S Green Bay, WI 54304 920.876.6382

September 17, 2021

Theresa Qualls
Program Coordinator
Wisconsin Clean Marina Program
1975 Willow Drive
Madison, WI 53706

Re: Request for Proposals for Conceptual Design and Engineering Plan for Stormwater Improvements and Boat Washing Station at Kewaunee Marina

Dear Ms. Qualls,

Ruekert & Mielke, Inc. (R/M) is pleased to submit a proposal for the conceptual design and engineering plan for stormwater improvements and boat washing station at Kewaunee Harbor. Our staff has the expertise and experience to provide a detailed and environmentally-friendly concept plan, as well as final design plans and technical specifications. Our wholistic approach to planning will look at all aspects of the project from multiple point of views and identify the best solutions for the site.

R/M provides:

- A history of working on the waterfront and addressing flooding on the waterfront and a depth of knowledge to address flooding in the in the Kewaunee Marina area.
- A full-service staff including an environmental team, technical specialists, financial experts, and professional engineers experienced with boat launches, green infrastructure, environmental regulations, and local grant programs.
- A history of working with lakefront communities and the unique circumstances that they face.

We are pleased to offer the following proposal and we are excited about the opportunity to expand our relationship with the Coastal Management Program team and the City of Kewaunee. If you find yourself with any questions, please do not hesitate to contact us at 262-542-5733 or email ttavera@ruekert-meilke.com.

Sincerely,
RUEKERT & MIELKE, INC.

Terrence Tavera, P.E.
Senior Project Manager
ttavera@ruekert-mielke.com

HISTORY WITH KEWAUNEE

Terry Tavera assisted with the previous planning and design for the Marina and other Kewaunee waterfront facilities. We are very familiar with the City of Kewaunee and recently completed the preliminary flooding studies for the City. We understand how the City staff operate, as well as the original intent and purpose of the Marina.

FULL-SERVICE EXPERTISE

R/M has on-staff biologists and ecologists to assist with any invasive species surveys. We also have vast experience with green infrastructure work, ranging from bioswales to full-scale stormwater projects.

LAKEFRONT KNOWLEDGE

We have worked with lakefront communities for years. We understand the unique challenges that the tourist season can bring to project timelines.

KEY **DIFFERENTIATORS**

TAILORED SOLUTIONS

HAS GROWN TO **5** LOCATIONS

WAUKESHA, WI

MADISON, WI

KENOSHA, WI

GREEN BAY, WI

GLOBAL WATER CENTER, WI

100+ EMPLOYEE OWNERS

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FIRM INFORMATION
OUR ROLE AS YOUR ENGINEER

SERVICES

Construction Review and Survey

Water and Wastewater

Environmental Services

Municipal Engineering

Asset Management

Water Resources

SCADA

GIS

Ruekert & Mielke, Inc. is a 100% employee-owned civil engineering firm established in 1946, celebrating its 75th year of service to Wisconsin communities and organizations. R/M's engineers, environmental specialists, and technology experts work together with clients to provide unparalleled planning, design, and construction management services while focusing on building a more sustainable future. Our offices are within driving distance of our clients and we take pride in the personal attention we can offer since our employees live, work, and play in local communities.

"The most valuable service I get from R/M is personal attention. Our City Engineer lives here. He is a taxpayer with ties to the community. He is one of us, above and beyond the professional qualifications."

- City of Columbus, WI

ORGANIZATIONAL CHART

WISCONSIN CLEAN MARINA

Senior Project Manager

Terry Tavera, P.E.

Environmental Technical Specialist

Ginny Plumeau, REM

Client Contact

Kevin Wagner, P.E.

Project Engineer

Katie Buchalski, E.I.T.

Drone Survey

Dan Schwartz, P.E.

Senior Ecologist

Kaley DuCoeur

TERRY **TAVERA**, P.E.

SENIOR PROJECT MANAGER

As project manager and engineer, Terry has been involved in a wide-variety of municipal and private projects. Terry specializes in storm water management, in addition to general civil engineering. He has experience in the design and project management of storm water management planning, transportation projects, hydraulic and hydrologic modeling, flood control studies, water main, and wastewater projects.

Terry's expertise includes:

- Group facilitation and leadership
- Regional water quality, green infrastructure, and TMDL planning
- Integrating water resources solutions with the natural and built environment
- Green infrastructure design and construction

Professional Engineer- WI & IL

American Society of Civil Engineers

Wisconsin Society of Professional Engineers

Association of State Floodplain Managers

Construction Document Technologist

Certified Professional in Erosion and Sediment Control

Certified Floodplain Manager

EXPERIENCE

Terry has been a project engineer at Ruekert & Mielke Inc. since 1999, specializing in storm water management and water resources. Prior to that he spent six years in Green Bay working for a Coastal Engineering firm specializing in waterfront work along the Great Lakes.

28+

» years « experience

UNDERSTANDING NEEDS OF OUR CLIENTS

Waterfront communities in Wisconsin experience challenges that are unique in regards to tourism, summer peak times, and seasonality. Terry grew up working in the Geneva area and has served as the Village Engineer for the Village of Fontana-on-Geneva Lake for over 10 years, and knows how important protecting these valuable resources are to the local communities. His experience and knowledge will serve to ensure this project protects the environment while minimizing disruptions to existing services.

RESPONSIVENESS AND COMMUNICATION

Communication is a key concern for R/M. We understand that our clients need consistent responses regarding their projects. We will ensure that information is shared between all parties and plans are accessible at all times for review, comments, or information sharing.

Located in Green Bay Office

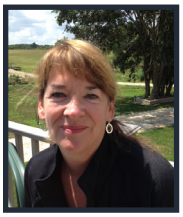
RUEKERT & MIELKE, INC.

KEVIN WAGNER, P.E.
Client Contact/Advisor
Green Bay Office

Kevin will be the client contact for the Marina improvement project. This role will act mostly as client advisor to Terry Tavera to optimize communications due to Kevin's previous experience with the City of Kewaunee during the flooding studies and other projects. Kevin was the project manager during the City's flood studies and is knowledgeable on the analysis of the Marina's current challenges.

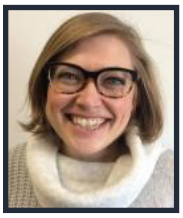
KATIE BUCHALSKI, E.I.T.
Project Engineer
Green Bay Office

Katie will be assisting Terry with the project engineering. Katie's background includes construction review and the study of wetlands, soil, and ecology. She is uniquely qualified to be handling this project with concerns toward green infrastructure and lakefront ecology. She has experience with waterfront projects, such as Green Bay's Bay Beach Amusement Park.



GINNY PLUMEAU, REM
Environmental Technical Specialist
Waukesha Office

Ginny will be providing technical advising regarding the environmental portions of the project. She has a wealth of knowledge regarding the funding options for lakefront projects and green infrastructure. Ginny also has experience with projects that have received such funding.



KALEY DUCOEUR
Senior Ecologist
Green Bay Office

Kaley will be the Senior Ecologist on this project. She has managed and performed environmental assessments to provide environmental compliance under the Clean Water Act. Kaley recently oversaw and completed Green Infrastructure inspections for MMSD assets throughout Milwaukee County. Kaley has experience overseeing surveying, and performing permitting, and construction oversight through erosion and sediment control device inspections and restoration.

DAN SCHWARTZ, P.E.
Drone Survey
Waukesha Office

Dan has a diverse range of skills including civil site design, land surveying, and Unmanned Aircraft System (UAS) mapping. He is focused on adding value to complex projects by developing new, more efficient workflows through the use of UAS technology. Dan has managed over 700 UAS operations across the country.

PROJECT UNDERSTANDING

Ruekert & Mielke, Inc. (R/M) is a full-service, employee-owned engineering and environmental firm with over 75 years of experience providing professional services to municipalities, government agencies, and private utilities. We have particularly wide breadth of experience working with lakefront communities and the unique challenges they face. Together our engineers, ecologists and biologists, survey crew and drone pilots, technical professionals, and financial staff have the abilities and availability to assist with this project and make the plan a reality.

Our project team will be led by Terry Tavera, P.E. Terry is a senior project manager licensed as a professional engineer and certified floodplain manager. He has been involved with waterfront and water resources projects in Wisconsin since the early 1990's. Terry currently serves as R/M's water resources team lead and has been involved in a wide variety of storm water management projects including green infrastructure.

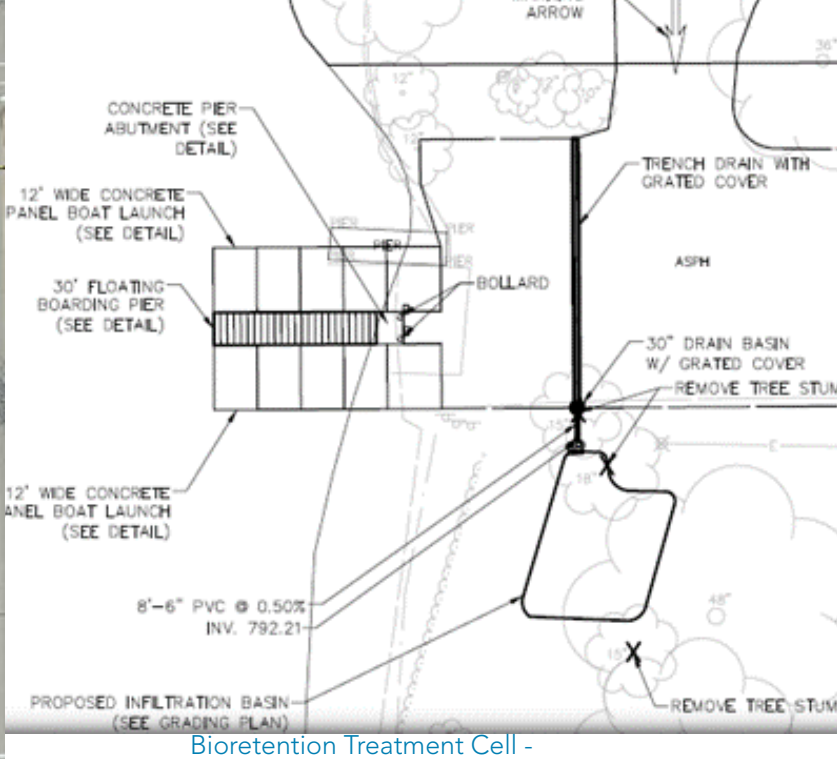
Ginny Plumeau will serve as the technical advisor for the environmental team. She has over 30 years of experience working on habitat, restoration, and ecological services. Kevin Wagner, P.E. out of our Green Bay office will serve as a technical assistant on the engineering side and has a local presence and experience working with the City of Kewaunee. Other staff assigned to help on this project include Senior Ecologist Kaley DuCoeur, Project Engineer Katelyn Buchalski and Project Engineer/Drone Pilot Dan Schwartz.

KEWAUNEE HISTORY

R/M has a long history working with the City of Kewaunee. Terry previously worked for a coastal engineering firm in Green Bay that focused on waterfront work and storm water management. He designed and provided storm water management for many marinas, boat launches and harbors of refuge throughout NE Wisconsin, primarily on Lake Michigan. Terry worked on the expansion and replacement of the floating docks at the Kewaunee public marina, developed plans for the expansion and improvements to the Salmon Harbor Marina, and cleanup of the former car ferry site along with the development of the Hathaway Landing project.

More recently, R/M was involved in a study to determine flooding along Lake Michigan and Kewaunee River due to historically high-water levels. At that time, we conducted a drone aerial survey and high-resolution photography of the downtown area along the waterfront, including the entire boat launch area and parking lot. So, we are very familiar with how high-water levels affect the boat launch area and will design a system that will accommodate high water levels and still maintain water quality protection.

Boat Trailer Parking Lot - Fontana, WI



Bioretention Treatment Cell - Mukwonago, WI Boat Launch

FULL-SERVICE EXPERTISE

R/M has a wide range of experts available to assist as needed in addition to the staff mentioned previously. From designing or retrofitting boat launches to native restoration and shoreline protection our waterfront experience is extensive. We also have experience with boat trailer parking lot designs and incorporating green infrastructure to treat runoff. Three recent boat launch projects that we worked on include facilities in Thiensville, Mukwonago, and on Pine Lake.

R/M has recently provided green infrastructure assessments for over 450 devices for the Milwaukee Metropolitan Sewerage District to create a baseline of infrastructure function, quality, and maintenance needs. The green infrastructure assessed were within the following categories: bioswale, permeable pavement, rain gardens, wetland (natural or constructed), green roof, and rainwater catchments. The assessments were comprised of a visual inspection with data collection through Survey123 and ArcGIS Online.

ENVIRONMENTAL SERVICES

Prior to the site visit: R/M will utilize desktop resources and perform a preliminary assessment of the following features associated with the project area:

- Wetlands and waterways
- Floodplain and shoreland zones
- Historic wetland and waterway assessments
- Rare, threatened, and endangered species
- Known potential contamination
- Culturally significant features and burials

Based on information compiled in the preliminary assessment. R/M ecologist(s) will perform a site visit to provide the following services:

- Wetland delineation potential
- Assess habitats identified during the rare, threatened, and endangered species review
- Invasive species presence

In the event of potential contamination, recommendations to proceed will be provided. In the event that a culturally significant feature or a burial site is present, R/M will provide recommendations to follow.

R/M ecologists will work with engineers to provide input on green infrastructure recommendations and placing.

Using the conceptual plan, R/M ecologists will assess sensitive resources impacts and provide a summary of permits based on the potential of impact. This summary will be provided in a Preliminary Environmental Screening document, which lists all of the assessed features, assumed impacts, and based on the assumptions and assessed features, a permit summary will be provided.

LAKEFRONT KNOWLEDGE

R/M services as the municipal engineer for many communities throughout Wisconsin, with extensive experience on waterfront communities. We understand that many of these communities are destination areas that experience high peak summer and weekend demand. Users of the boat launch may be unfamiliar with the area, so clear traffic control and signage are essential. Any improvements to the boat launch and parking lot must take these items into account. In addition, coordinating construction timing and phasing is critical to avoid peak usage dates and marina operations.

SCOPE OF SERVICES

We will work closely with the Wisconsin Clean Marina Program (CMP) team to meet the proposal objectives. Our analysis will include a boat wash collection and treatment facility, storm water BMP's and green infrastructure, review of projected high-water levels and how that affects the boat launch and proposed features usability, aesthetics, and the additional benefits to the environment. Our analysis will also look at alignment with current and future harbor plans, utility needs, traffic follow, energy efficiency, sustainability, maintenance needs and construction versus long term maintenance costs.

Task 1 – Concept Plan

The first step of the project is to provide a concept plan. A preliminary desktop analysis including a preliminary environmental screening assessment will be followed by a site visit, planning meetings and a summary report. The following items will be included as part of the concept plan task:

- Kickoff meeting with the CMP team.
- Desktop analysis of site conditions including a preliminary environmental screening assessment.
- Conduct a site visit with the CMP team.
- We are proposing to resurvey the entire boat trailier parking lot and surrounding area with our drone technology. Combined with our previous drone data flown during high water levels we will have survey level topograpy and aerial images. R/M will also request a diggers hotline marking prior to the flight so that we can locate on the site plan buried utilities.
- Prepare a concept plan that address the site and adjacent parcel uses, boat washing station, potential fish cleaning station improvements, maximizing use during high water levels, storm water management and green infrastructure.
- Identify potential permits and regulatory items.
- Identify preliminary costs.
- Host an open host to discuss the concept plan
- Prepare a summary report for the concept plan and present to the CMP team in electronic PDF format.

Task 2 – Engineering Plan

Engineering plans will include preparing design drawings and technical specifications including a grading plan, boat washing station and storm water management improvements. Bidding services and contract documents are not included but can be provided as an extra service. The following items will be included as part of the engineering plan task:

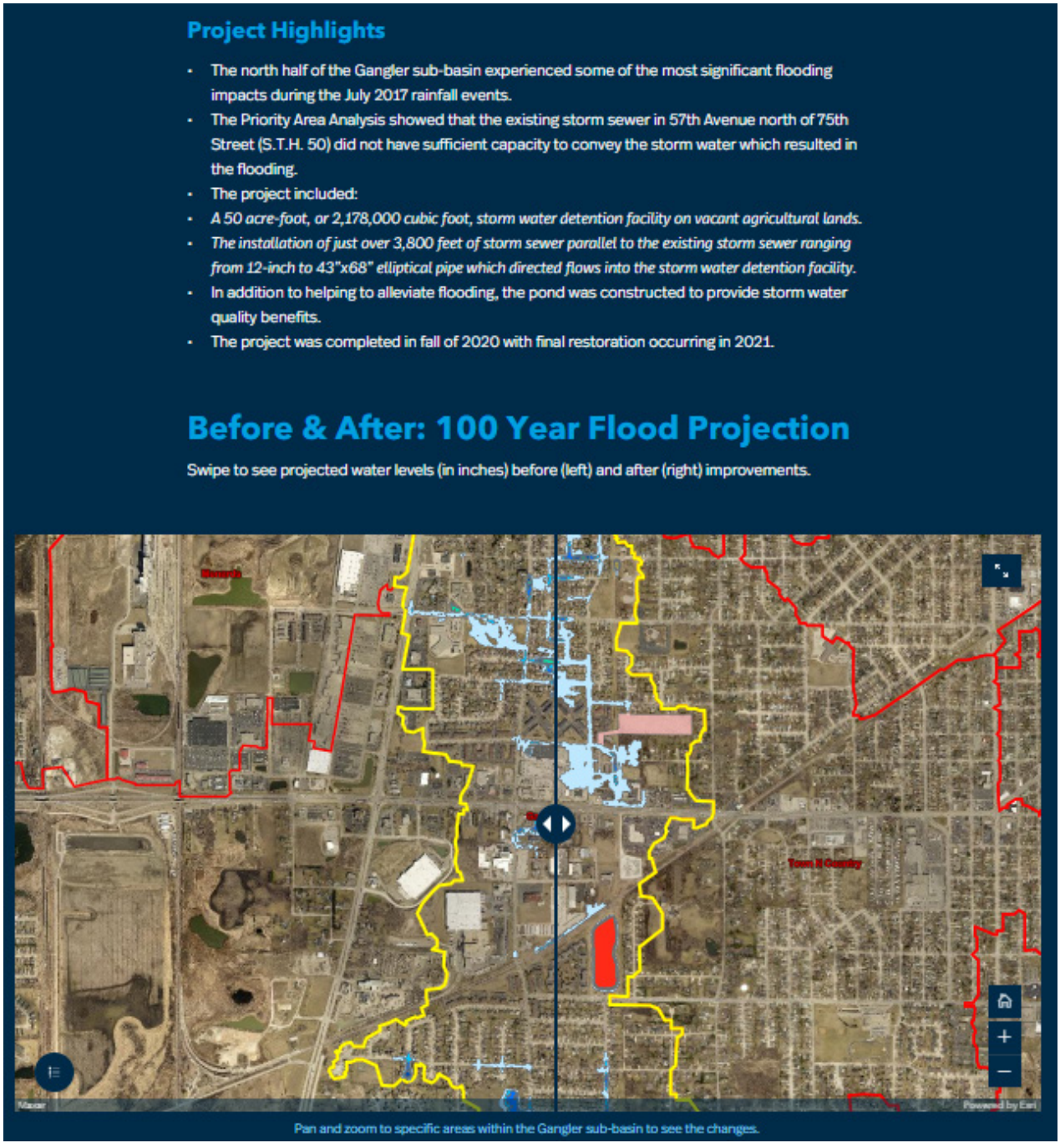
- Prepare drawings including a cover sheet, grading plan and details for the storm water management and boat washing station.
- Prepare technical specifications compatible with the City of Kewaunee standards.
- Prepare a construction cost estimate.
- Acquire environmental permits necessary for the work. (Note, this does not include wetland delineation services, hazardous materials or other unknown or buried site conditions that are identified during the initial concept planning or final design stages of work). We are assuming a DNR erosion control permit will be required.
- Schedule one in-person or virtual meeting to discuss the 90% plans prior to finalizing.
- Submit the engineering plan to the CMP team in electronic PDF format.

Task 3 - Alternate GIS StoryMap

Sharing information with the public is a critical component of a successful project, especially this site where there has been recent concerns of the operability due to high water levels.

As an optional task we are proposing to create a Story Map to communicate the information to non-technical people. This will be a great resource to share the plan with the public or elected officials. The results of the concept plan will be presented as a GIS Story Map that R/M will host for 1-year on our servers.

The Story Map can present project information, meeting dates, site photos, drone fly-over videos and easily controlled slide bars that can show viewers the difference in the site prior to or after flooding or prior to and after proposed site improvements. A clip of an example R/M created Story Book for Kenosha's Georgetown Pond is shown below.



GRANT EXPERIENCE

GRANTS PURSUED BY R/M			
Grant Name	**Funding Type**	**Organization**	**Funding Amount**
Acquisition and Development of Local Parks	Grant	WI DNR Knowles-Nelson Stewardship	Up to 50%; K-NS grants share $6 million per year
Clean Water Fund Loan	Loan	DNR	Loans up to $2,000,000
CDBG: Public Facilities Economic Developmet Grant	Grant	DOA	Up to 50%; $35,000 per job; $500,000 cap
Community Development Investment Grant	Grant	WEDC	Lesser of $250,000 or 25% of cost
Fund for Lake Michigan Grant Program	Grant	Fund for Lake Michigan	At Least: $13,750 to $200,000
Idle Sites Redevelopment Program	Grant	WEDC	Lesser of $500,000 or 30% of cost
Land and Water Conservation Fund	Grant	WI DNR Knowles-Nelson Stewardship	50% of cost
Local Roads Improvement Program	Grant	WI DOT	Up to 50% of cost
Municipal Flood Control Grants	Grant	WI DNR	Up to 50% of cost; At Least: $20,000 - $360,000
Recreational Boating Facilities Grants	Grant	WI DNR	Up to 50% of cost; ~$100,000 potential
Recreational Trails Program	Grant	WI DNR	30% to 40% of cost
Rural Energy for America Program	Grant/Loan	USDA	Max 75% for loans; Max 25% for grants.
Safe Drinking Water Loan Fund	Loan	WI DNR	Loans up to $2,000,000
Surface Water Grants	Grant	WI DNR	About $4 million for all programs combined
Sustain Our Great Lakes	Grant	Sustain Our Great Lakes	Up to $1,000,000
Targeted Runoff Management Grants	Grant	WI DNR	Lesser of $1,000,000 or 70% of cost
Transportation Economic Assistance (TEA)	Grant	WI DOT	Lesser of $1,000,000 or 50% of project cost
Urban Green Space Program	Grant	WI DNR Knowles-Nelson Stewardship	Up to 50% of cost
Urban Forestry Grant	Grant	WI DNR	Lesser of $25,000 or 50% of project cost
Urban Nonpoint Source & Storm Water Management Grant Program (UNPS)	Grant	WI DNR	50% of cost
Urban Rivers Program	Grant	WI DNR Knowles-Nelson Stewardship	50% of cost; statewide 1.2 - 1.6 mil
Water & Waste Disposal Loan & Grant Program	Loan/Grant	USDA	Mostly loans; grants when available.
Wisconsin Coastal Management	Grant	WI DOA	Up to 50% of cost; $1.5 mil for entire program
Outdoor Recreation Legacy Partnership	Grant	DOI	Up to 50% of cost; $250,000 to $750,000 per project.

VILLAGE OF THIENSVILLE

SERVICES

- Erosion Control
- Site Grading
- Utility Extension
- Boat Launch
- Path Design
- Bank Stabilization

PROJECT TEAM

- Terry Tavera, P.E.
- Jerad Wegner, P.E.

YEAR COMPLETED

- 2020

VILLAGE PARK STAGE DESIGN AND BOAT LAUNCH

During the improvement of Ruekert & Mielke, Inc. (R/M) was brought on to the project for site preparation and installation of a prefabricated 30-foot by 40-foot pavilion stage at Village Park in the Village of Thiensville. This included the installation of concrete footings, concrete steps, stone veneer on the stage columns, concrete pavement, asphalt pathway paving, placement of landscaping boulders, and associated erosion control. The design also included design of restroom facilities, extension of utilities, site grading, and electrical design.

Additionally, R/M was hired for the removal of an existing boat launch at the southeast corner of Elm Street to install a new boat launch with an ADA compliant kayak launch and pier, permanent pilings, and bank stabilization. Included in this project, our firm removed and resurfaced the asphalt parking lot and developed restoration and erosion control efforts.

CLIENT CONTACT
Andy LaFond
DPW
262-242-3720
alafond@village.thiensville.wi.us

CITY OF GREENFIELD, WI

SERVICES

- Flood Field Survey
- Site Investigations
- Floodplain Modeling
- Waterway Stabilization

PROJECT TEAM

- Terry Tavera, P.E., CFM, CPESC
- Steve Wurster, P.E., CFM, CPSWQ
- Chris Genellie, P.E., CPESC, CPSWQ
- Sean Sullivan, P.E.

YEAR COMPLETED

- 2020

CLIENT CONTACT

Jeff Katz, P.E.
City Engineer
jeffrey.katz@greenfieldwi.us
414.939.8322

WILDCAT CREEK WATERWAY IMPROVEMENT

The City of Greenfield struggled with storm events flooding Wildcat Creek to the point of frequent over-topping, structure flooding, and bank erosion. The community voiced concerns during public information meetings, driving the City to understand the extent of the flooding problems. Ruekert & Mielke, Inc. assisted to determine the flood risks and develop an integrated storm water system.

To bring about the most comprehensive results, R/M worked with the City of Greenfield, the City of New Berlin, and Milwaukee County to run flood field surveys and site investigations to determine the breadth of the problem into the watershed. R/M created an informed multi-phase implementation plan for waterway improvements.

IMPROVEMENTS TO MINIMIZE STORM WATER IMPACT

Our engineering team at R/M outlined multiple construction phases, including the following improvements:

- Construction of a dual 8x5 foot RCB structure under Coldspring Road
- Removal of dual 48-inch CMP culverts, road widening, and 10X6 foot RCB culvert extensions under Howard Avenue and 124th Street and shoreline stabilization
- Construction of an 8x6 foot RCB structure and road lowering on 112th Street
- Installation of a backwater preventor in the STH 100 storm sewer outfall into the Root River
- Construction of 350 feet of modular block floodwall
- Installation of a geotextile wrapped soil lifts and integrated bank treatment for shoreline stabilization in Kulwicki Park, and native prairie channel buffer protection

Bank erosion was addressed using gabion baskets, integrated bank treatment and geotextile wrapped soil lift shoreline stabilization. The construction of a flood wall, public safety improvements, channel stabilization, and fish passage improvements all acted to minimalize the effects of future flooding and to improve habitat.

R/M helped the City obtain cost sharing dollars from the City of New Berlin, as well as grants from the Fund for Lake Michigan and the DNR River Protection Program.

CITY OF OCONOMOWOC, WI

SERVICES

- Road Design
- Bioretention
- Storm Sewer Design
- Sidewalk Design

PROJECT TEAM

- Terry Tavera, P.E.
- Violet V. Razo, P.E.
- Michael E. Michalski

YEAR COMPLETED

- 2019

CLIENT CONTACT
Mark Frye
Director of Public Works
mfrye@oconomowoc-wi.gov
262.569.2184

FIRST BANK FINANCIAL CENTRE PARKING LOT IMPROVEMENTS

A partnership opportunity arose between the owners of the private parking lot adjacent to the City of Oconomowoc's municipal parking lot on South Street and Church Street, providing the opportunity to re-design the overall lot to include storm water treatment facilities, which were not present before. This parking lot serves the downtown commercial district, City community center and public library, and drains to Lac La Belle, approximately 500 feet away.

By adjusting the layout and re-painting the parking stalls, the parking lot can now hold 336 vehicles, an increase of 50. **Vegetated bioretention basins and swales have been incorporated into the parking lot design, allowing some of the runoff to flow along the curb and into the vegetated areas.** Runoff then infiltrates through the engineered soils and into the ground, where an extension to the storm sewer runs underneath, directing excess water to the storm sewer system. This system allows pollutants from the parking lot to be captured in the bioretention facilities, prior to discharging from the storm sewers to Lac la Belle.

In addition to the 3 bioretention facilities, a 350 square foot rain garden planted with native prairie grasses and flowers is located on the west side of the lot, just north of the Library, which now receives and infiltrates the runoff from the sidewalk which used to flow onto the pavement and into the storm sewer system prior to discharging to the lake.

The depressed bioretention basins and rain garden are in a very visible location, providing an opportunity for the City to inform residents and visitors about the importance of storm water treatment to the protection of the lakes in Oconomowoc.

MILWAUKEE METROPOLITAN SEWERAGE DISTRICT, WI

SERVICES

- Inspection
- Work Order Recommendation
- Green Infrastructure

PROJECT TEAM

- Christy Poniewaz
- Kaley DuCoeur

YEAR COMPLETED

- 2021

CLIENT CONTACT

Bre Plier
MMSD
bplier@mmsd.com
414.272.5100

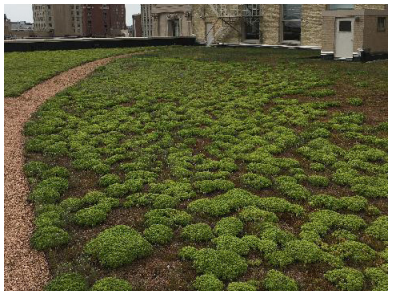
GREEN INFRASTRUCTURE CONDITION ASSESSMENTS

The Milwaukee Metropolitan Sewerage District (MMSD) seeks to establish a green infrastructure (GI) assets monitoring program using a baseline condition assessment of District-funded GI assets. Additionally, MMSD sought to incorporate its Fresh Coast Fresh Start (FCFS) workforce development program by training participants to inspect and learn to maintain GI features. R/M was brought on to complete both, providing a baseline condition assessment, while partnering with FCFS for a meaningful training opportunity in the field. The inspections spanned over 400 GI assets for which MMSD provided funding across hundreds of different property owners. Installation dates for these assets vary from a few years ago to over 10 or more.

Prior to this project, R/M partnered with Stormwater Solutions Engineering (SSE) to create the "Green Infrastructure Maintenance Analysis & Lessons Learned for Municipalities" presentation. This presentation and document has continued to be utilized during the current project and has been helpful.

Our team is developing and instituting a baseline GI asset inspection program that incorporates consistency, completeness, and an opportunity for improvement. We offer additional inspection fields or improvements for the Survey 123 application, developed a template for recommended work orders, and have included some recommendations during our inspections. Most importantly, R/M is providing hands-on training at GI asset locations for FCFS workforce.

A final report will be provided with a brief narrative to discuss the purpose of the project, the methods, and the protocols utilized. Likewise, this report will include the project management and inspection personnel, FCFS participants, and a summary of the condition assessments.



CITY OF GREEN BAY, WI

SERVICES

- Stormwater Master Planning
- Green Infrastructure
- Water Quality Analysis

PROJECT TEAM

- Kevin Wagner, P.E.
- Katie Buchalski, E.I.T.
- Terry Tavera, P.E.

YEAR COMPLETED

- 2021

GREEN INFRASTRUCTURE CONDITION ASSESSMENTS

Ruekert and Mielke is working with the City of Green Bay to complete a stormwater master plan for the Bay Beach Amusement Park. The 83-acre park lies on the Bay of Green Bay, and has undergone a series of construction project over the years.

The City is looking to address existing and future storm water needs with best management practices that will address storm water quality and storm water quantity. R/M is completing analysis of the existing site and infrastructure, as well as the ultimate build out plan for the park develop a comprehensive stormwater management plan.

The final plan will include a phased approach, timing storm water device construction as development occurs in different phased portions of the park. Final recommendations include bioretention and rain gardens, wet detention ponds, grass swales, a storm water pumping station, grading plans, and protection and utilization of existing wetlands.

SCHEDULE

Proposed Schedule
Stormwater Improvements and Boat Washing Station at Kewaunee Marina

TASK	2021 OCTOBER 4	11	18	25	NOVEMBER 7	14	21	28	DECEMBER 5	12	19	26	JANUARY 2	9	16	23	30	FEBRUARY 6	13	20	27	MARCH 6	13	20	27	APRIL 3	10	17	24
Contract Award																													
Task 1 - Concept Plan																													
Kickoff meeting (virtual)																													
Desktop site analysis and preliminary environmental screening																													
Site visit meeting (in-person)																													
Drone flight survey and site plan																													
Concept planning																													
Progress meeting (virtual)																													
Open house or public meeting (in-person or virtual)																													
Final concept plan report																													
Task 2 - Engineering Plan																													
Prepare final plans and specifications including erosion control plan																													
Cost estimate																													
Permitting (erosion control, flood plain analysis)																													
Final review meeting (virtual)																													
Submit the engineering plan to the CMP team in electronic PDF format																													