

PROPOSAL FOR
**PROFESSIONAL SERVICES FOR WAABIZHESHKANA
("THE MARTEN TRAIL") SHORELINE RESTORATION**

CITY OF DULUTH | RFP Number 21-99774

NOVEMBER 16, 2021



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This information has been tailored to your specific project based on our understanding of your needs. Its aim is to demonstrate our ideas and approach to your project compared to our competition. We respectfully request that distribution be limited to individuals involved in your selection process.

**APPENDIX A - PROPOSAL COVER SHEET
CITY OF DULUTH
RFP# 21-99774**

Bidder Information:	
Bidder Name	AMI Consulting Engineers, PA
Mailing Address	91 Main Street Superior, WI 54880
Contact Person	Zac Morris, PE - Marine Department Manager
Contact Person's Phone Number	651.344.8783 Ext. 45
Contact Person's E-Mail Address	zac.morris@amiengineers.com
Federal ID Number	FEIN: 65-1266816
Authorized Signature	
Authorized Signer's Email Address	Zac Morris, PE
Title	Marine Department Manager

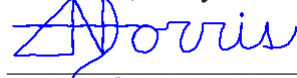
BYRD ANTI-LOBBYING AMENDMENT CERTIFICATION
(To be submitted with each bid or offer exceeding \$100,000)

The undersigned, [Company] **AMI Consulting Engineers, PA** certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, [Company] **AMI Consulting Engineers, PA**, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 *et seq.*, apply to this certification and disclosure, if any.



Signature of Contractor's Authorized Official

Zac Morris, PE - Marine Department Manager

Name and Title of Contractor's Authorized Official

11/16/2021

Date



Purchasing Division
Finance Department
Room 120
411 West First Street
Duluth, Minnesota 55802

218-730-5340
purchasing@duluthmn.gov

Addendum 1
Solicitation 21-99774
RFP for The Marten Trail Shoreline Restoration Design

This addendum serves to notify all bidders of the following changes to the solicitation documents:

1. The pre-proposal meeting sign-in sheet has been uploaded to the City web page at <https://www.duluthmn.gov/purchasing/bids-request-for-proposals/> under solicitation 21-99774.

The following questions asked are answered below:

2. The project schedule shows everything taking place in 2022. Are those the anticipated dates or are the anticipated dates intended to be for 2023? We're trying to figure out timeline/permitting and was wondering if this was a project originally slated for 2022 prior to the COVID-19 pandemic. *Answer: If we can get permits the first half of 2022, we would like to bid it in the middle of 2022 and complete the work by the end of 2022. If permitting is not possible in that timeline, the project will be pushed to 2023.*
3. The RFP sets the bidding date for January. Is this flexible, since water work in the location will not be possible before the July 1st the fish window? We would propose bidding in March 2022. *Yes, the construction schedule is flexible.*
4. Has wetland delineation been completed for the project? If not, this work will not be possible before May 2022 since the 2021 growing season is now complete. *No wetland delineation work has been completed. If wetland work is needed to complete this project, please include it in the scope.*

Please acknowledge receipt of this Addendum by including a copy of it with your proposal. The pages included will not count toward any page limitation, if any, identified in the RFP.

Posted: **November 10, 2021**

November 16, 2021

Purchasing Division
City of Duluth
City Hall, Room 120
411 West 1st Street
Duluth, MN 55802

Re: Professional Services for Waabizheshikana ("The Marten Trail") Shoreline Restoration

Members of the Selection Committee:

AMI Consulting Engineers, PA (AMI) is pleased to submit the attached proposal package to the City of Duluth for professional engineering services of the shoreline Waabizheshikana ("The Marten Trail") shoreline restoration.

We understand the goal of this project is to restore a portion of failed shoreline zone along the East Spirit Cove development in West Duluth that has impacted and closed a portion of the Waabizheshikana ("The Marten Trail"). The project will also Increase resiliency of assets to mitigate future damage to assets. The City is requesting site specific treatment options including civil and coastal designs of new infrastructure along with a design to restore the shoreline. The selected firm is responsible for professional civil and coastal engineering services, permitting services, construction documents, construction cost estimates, construction survey staking at the beginning of the project, and 100% construction administration throughout the duration of the project.

AMI will lead the project, with Ramboll Environmental Engineering providing support in scope development of design options and alternatives as well as performing a peer review of the coastal engineering designs. Individually and collectively, we are committed to meeting and exceeding your expectations by providing a team well-versed in coastal engineering designs and site development. Our team is experienced with FEMA funded projects and working within specific hazard mitigation spending allowance guidelines from FEMA.

AMI has worked with the City of Duluth on numerous projects and has been the leading local expert on coastal infrastructure for commercial, industrial, and residential clients. We use the latest software coupled with deep-rooted technical research to provide innovative and cost-effective solutions which satisfy the most stringent project demands. All of AMI's design will meet the City's current and future demands by including but not limited to climate change, current water level trends, and natural shoreline evolution. Our methods have repeatedly proven to provide designs that are practical, functional, aesthetically pleasing and resilient.

AMI has read and understands the requirements of the RFP and has provided the requested proposal documents per the RFP. We acknowledge receipt of Addendum No. 1.

Thank you for this opportunity to submit. If you have any questions or comments, please contact AMI at 651.344.8783 Ext. 45 or zac.morris@amiengineers.com. We look forward to speaking with you.

Respectfully Submitted,



Zac Morris, PE
Marine Department Manager

BACKGROUND & EXPERIENCE



At AMI, we pride ourselves on delivering successful projects through strong communication and client-centered engineering services. Through continual development and training, we are cultivating exceptional team members that provide exceptional service without compromise.

Headquartered at the tip of Lake Superior, AMI lies in the heart of the Midwest and we continue to expand our geographical footprint throughout the United States and beyond its borders. Our national and international experience provides us with the knowledge to accomplish any intercoastal or coastal engineering assessment or design project.

AMI provides a wide array of marine civil engineering, coastal engineering, structural engineering, and scientific services. These services include everything from the initial field investigations and data gathering to shoreline and coastal wave process modeling, detailed engineering design and complete bidding and construction management services to ensure proper construction. This work is accomplished with the use of industry leading software, scientific tools and experienced staff that understand marine and coastal issues and the different environments in which these structures are built.

The logo for Ramboll, consisting of the word "RAMBOLL" in white, uppercase, sans-serif letters inside a blue rounded rectangle with a white checkmark icon integrated into the letter "O".

RAMBOLL

Ramboll is a global engineering, design, environmental, and management consultancy. Our mission is to create sustainable and long-term solutions for its

customers and society. Headquartered in Copenhagen, Denmark, and privately owned, Ramboll has 16,500 employees across 35 countries and in 300 offices, including 11 Midwest/Great Lakes offices and an office in Minnesota, within driving distance of Duluth. Ramboll's North American division includes over 2,000 experts, including coastal experts in site characterization, risk assessment, engineering design, construction management, performance monitoring, treatment system operation and maintenance, and habitat restoration. Many of our best experts are located in the Midwest and Rocky Mountain Regions including Victor Magar, PE, (IL) Jim Hutchens, PE, (MN) and Randy Mandel (CO). By supporting this work through our Minnesota office and extending our reach nationally, we provide strong local knowledge and experience with global expertise.

Ramboll's engineers and ecologists plan, implement, and oversee sediment and coastal resiliency projects throughout the world. The proposed team offers unparalleled experience in resiliency management and design, soil mechanics, construction cost and schedule estimation, and biodiversity. Ramboll has conducted project-specific engineering designs to evaluate technology options and has prepared engineering cost estimates as part of sediment management and resiliency option assessments for rivers, lakes, and harbor projects. As remediation project managers, Ramboll's engineers and technical specialists design effective solutions, help manage costs, improve the likelihood of project success, and develop effective long-term monitoring plans to demonstrate remedy performance, risk reduction, and environmental improvement.

TEAM SPECIALTIES

- **Coastal, marine natural shoreline restoration**
- **Wave modeling**
- **Shoreline resiliency assessments**
- **Shoreline project permitting**
- **FEMA-funded projects**
- **Construction administrations & inspections**





RELEVANCE TO CITY OF DULUTH

- City of Duluth shoreline experience
- Permitting coordination
- Underwater vegetation

BAYFRONT TRAIL

DULUTH, MINNESOTA

AMI designed a new, concrete boardwalk upon an old, wooden dock structure. This project included stormwater design, erosion control, aquatic vegetation, streambank stabilization, shoreline retaining walls, a sliding bridge, and two scenic overlooks. To mitigate for open water losses resulting from the dock wall repairs, AMI collaborated with the MN DNR to design and permit pan fish spawning habitat. This habitat was made by shallowing and installing substrate for the spawning bed. Native yellow and white lilies were integrated to provide fish coverage. Emergent vegetation buffer strips were also installed to treat stormwater runoff.

The Bayfront Trail was designed and installed to connect the newly completed Pier B Resort to the main trail system, the bandshell park, and to support winter activities such as the Bentleyville "Tour of Lights".

PROJECT TIMELINE



2015 - 2016

KEY TEAM MEMBERS



- Chad W. Scott, PE – Principal
- Jordan Vargas – Environmental

CLIENT REFERENCE



City of Duluth



RELEVANCE TO CITY OF DULUTH

- Coastal engineering
- Vegetated revetment
- Native plantings
- Bio-engineering
- Permitting coordination

RIVERBANK STABILIZATION

STILLWATER, MINNESOTA

AMI Consulting Engineers (AMI) worked with the City of Stillwater to perform site investigations and rehabilitation planning for approximately 3,700 linear feet of failed riverbank along the St. Croix River. During the 2018 investigation, serious decay and failures of the riverbank were found to be undermining the existing trail and guard rail. The decay and failures resulted in public safety risks, as well as reduced accessibility to the St. Croix's trail system.

Once investigations and Alternative Analysis were completed, AMI initiated the design process for the shoreline stabilization of 3,700 linear feet of eroded riverbanks along the western shoreline of the Lower St. Croix River. Incorporated within the shoreline stabilization were bio-engineered approaches for ecological enhancement, three river overlooks, and a new Riverwalk trail and improvements to existing infrastructure to improve public safety and accessibility to the St. Croix river trail system.

The Lower St. Croix National Riverway is a State-administered component of the National Wild and Scenic Rivers System under the authority of the U.S. Environmental Protection Agency. As such, the project was subject to a strict regulatory compliance review in compliance with the National Environmental Protection Act to ensure the protection and enhancement of the Riverway's outstandingly remarkable values. AMI worked diligently with the jurisdictional authorities to complete a detailed environmental evaluation as part of the permit acquisition process.

As a result of the environmental compliance review, AMI design team identified a section of the project corridor as an Area of Environmental Sensitivity, this area contains unique characteristics, including cultural and historical resources, and special habitat features beneficial to Federal and State listed species that need protection during and after construction activities.

PROJECT TIMELINE



2018 - Present

KEY TEAM MEMBERS



- Chad W. Scott, PE – Principal
- Michael Ostendorf, PE – Civil
- Ryan Dagger, PE – Marine/ Vegetation
- Zac Morris, PE – Marine/Coastal
- Angly Ulschmid, PE – Environmental Review

CLIENT REFERENCE



City of Stillwater



RELEVANCE TO CITY OF DULUTH

- Coastal engineering
- City of Duluth shoreline experience
- Permitting coordination

LAKEWALK PHASE IV

DULUTH, MINNESOTA

In response to an extreme storm event occurring in October 2018, AMI was selected to design the stabilization and recovery of specific sections of Lake Superior shoreline most effected by erosion. The timeline for this project was driven by a closely approaching fish window that would make any work in the bed of Lake Superior impossible. With this tight schedule in mind, AMI performed surveying, executed engineering analyses, provided design alternatives, obtained permits and required water work extensions, created construction documents, and performed construction administration. Due to the close proximity of the popular multi-use Lakewalk trail, public safety, and construction access considerations were identified and incorporated into the project designs. The selected designs were site specific, integrating armor stone revetments with plantings of native shrubs, trees, and grasses; structural designs to replace and extend existing pipeline infrastructure to directly reduce the potential of future damage to the shoreline and coastal infrastructure were also included. The designs increased resiliency along with the vegetation buffer between the Lakewalk and the shoreline protection allowing for future landscape improvements. The entire project will be completed under budget and well ahead of the set schedule, making more opportunities for the public to get out and enjoy the Lakewalk.

PROJECT TIMELINE



2021

KEY TEAM MEMBERS



- Chad W. Scott, PE – Principal
- Chase Dewhirst, PE – Marine Civil
- Zac Morris, PE – Coastal
- Nicole Peterson, EIT – Coastal
- Jared Munch, EIT – Survey

CLIENT REFERENCE



City of Duluth



RELEVANCE TO CITY OF DULUTH

- Coastal engineering
- Permitting coordination

WOODSTOCK & POKEGAMA BAY LAUNCH

SUPERIOR, WISCONSIN

AMI provided engineering services for redesign of bay launches and trail connectivity for the Woodstock and Pokegama Bay Launches in Superior, Wisconsin. The existing boat launches required immediate upgrades due to erosion and wave action. Trail improvements were necessary for trail connectivity.

For this project, AMI performed surveys and vegetation and invasive species plant/tree inventory.

Along with attendance and presentations at public meetings, AMI also completed renderings, permitting and quarterly grant reporting for this project.

PROJECT TIMELINE



2019 - Present

KEY TEAM MEMBERS



- Chad W. Scott, PE – Principal
- Michael Ostendorf, PE – Project Manager
- Chase Dewhirst, PE – Marine Department Manager
- Zac Morris, PE – Marine/Coastal
- Mat Burich, EIT – Marine
- Ryan Dagger, PE – Marine/Vegetation
- Seth Johnson – Lead Technician

CLIENT REFERENCE



City of Superior
Wisconsin Coastal Management



RELEVANCE TO CITY OF DULUTH

- Coastal engineering
- Permitting coordination
- FEMA Hazard Mitigation funding

RAINY LAKE MEDICAL CENTER RIVER BANK STABILIZATION

INTERNATIONAL FALLS, MINNESOTA

The Rainy Lake Medical Center is scheduled to receive FEMA Hazard mitigation funding to repair or to prevent future failures to restore their shoreline and failing slope along the Rainy River. AMI was hired to perform civil and riverine engineering services for the hospital while preparing the documents required to receive funding from FEMA.

The design consisted of a deep patch repair along the top of the slope to strengthen the extremely weak soil that the new concrete helipad and existing hospital parking lot was built on top of. Erosion control blankets and native vegetation were designed to stabilize the bank from shallow slope failures by using the strength of the deep-rooted vegetation.

As water levels fluctuate along the riverbank, a variety of grasses and sedges were required that could handle being submerged underwater during certain seasons. The construction administration will include on-site inspections, FEMA documentation, weekly progress updates to the hospital staff, coordination with emergency helicopter pilots and a final punchlist walkthrough with the contractor.

PROJECT TIMELINE



2019 - Present

KEY TEAM MEMBERS

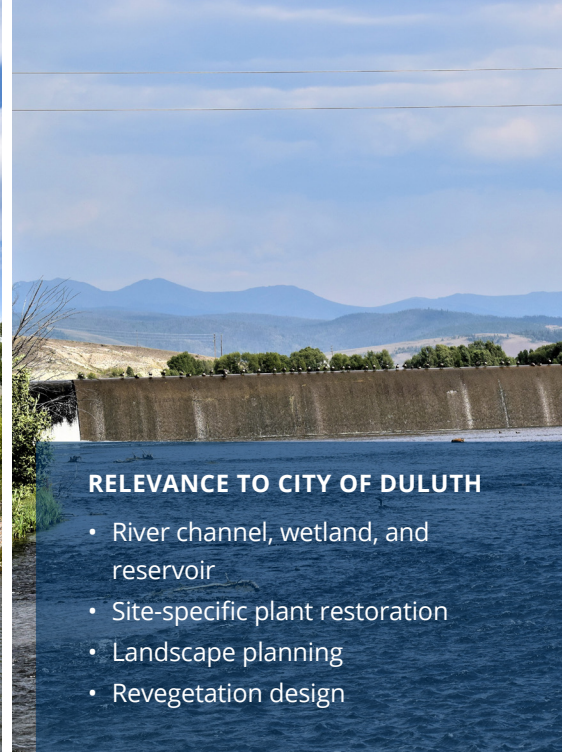


- Chad W. Scott, PE – Principal
- Chase Dewhirst, PE – Marine Civil
- Ryan Dagger, EIT – Marine Civil
- Zac Morris, PE – Riverine
- Jared Munch, EIT – Geotechnical

CLIENT REFERENCE



Rainy Lake Medical Center



RELEVANCE TO CITY OF DULUTH

- River channel, wetland, and reservoir
- Site-specific plant restoration
- Landscape planning
- Revegetation design

WINDY GAP RESERVOIR COLORADO RIVER CONNECTIVITY CHANNEL DESIGN

GRAND COUNTY, COLORADO

The purpose of this project is to provide restoration support for the Windy Gap Reservoir Colorado River Connectivity Channel Design and Implementation. Windy Gap Reservoir is located west of Granby, Colorado and is at an average mean elevation of 7,282 feet. The facility is owned and operated by the Municipal Subdistrict of Northern Colorado Water Conservancy. The facility is comprised of a diversion dam, reservoir, and pump plant located on the Colorado River downstream of the Colorado River and Fraser River confluence. The project will increase annual average diversion to 46,100 acre-feet.

Historically Windy Gap Reservoir has been a shallow water impoundment that contributed to increased stream temperature and the release of sediment and organic matter into the Colorado River. Additionally, the impacted waters caused the loss of native sculpin populations and decline in trout biomass and vigor. Accordingly, the purpose of this project is to address these issues through dam improvement and establishment of a natural river channel including restoration of its surrounding habitats. It is estimated that the resulting ecological enhancement should benefit approximately 30 miles of river.

Ramboll's scope of work includes review of 30%, 60%, and 100% design as well as restoration oversight. Our provided services include oversight of riparian and wetland plant materials collection, increase, and revegetation. Ramboll's work initiated with assessment of current site conditions in comparison to nearby reference areas. In turn, these field observations were then used to inform restoration plans according to community and habitat type. To provide the required site-specific native plant materials for restoration, our work included oversight of native cottonwood and willow collection, as well as oversight of local native plant nurseries responsible for the propagation and cultivation of the collected plant materials. Our work will also include inspection of the plant materials prior to field planting, oversight of planting locations and hydrology, and assistance with soil amendment and seeding mixes.

PROJECT TIMELINE



2020 - Present

KEY TEAM MEMBERS



- Randy Mandel – Principal Ecologist / Project Director
- Sara Copp Franz – Senior Managing Ecologist / Project Manager

CLIENT REFERENCE



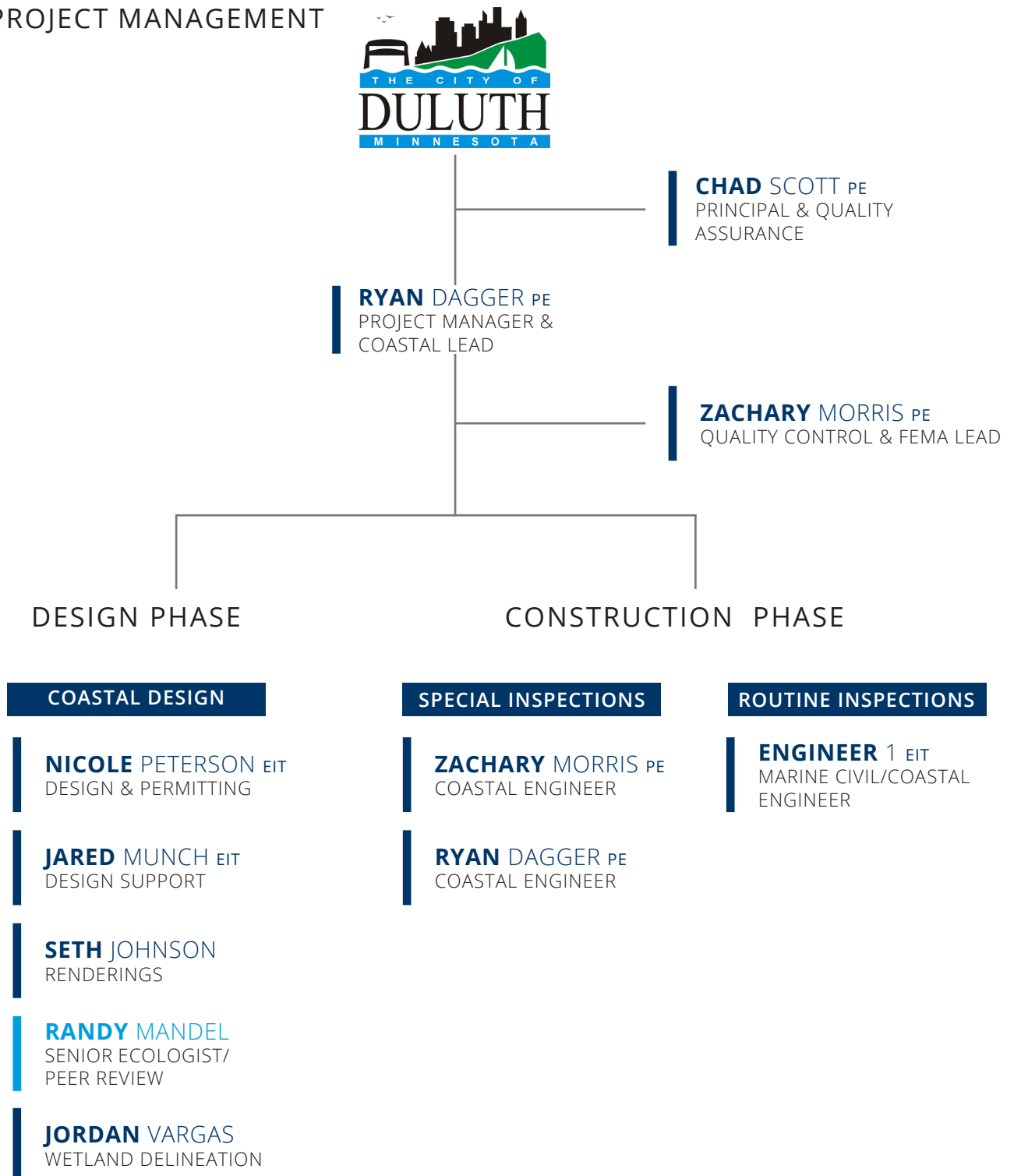
Northern Water Conservation District

PROJECT TEAM

We have assembled a customized team of area experts in the disciplines relevant to this important project, including structural, water resources, civil, and geotechnical engineers as well as surveyors and technicians with experience in shoreline restoration, FEMA process and guidelines, and working with the regulatory agencies necessary to make the project a success.

All team members are available to begin work immediately and committed for the project duration. We understand that any changes to project team will need to be approved by the City.

PROJECT MANAGEMENT





CHAD SCOTT PE

PRINCIPAL & QUALITY ASSURANCE

Chad has been a structural and marine civil engineer for over 25 years. There is probably not another engineer in the area that has touched as many projects along the Duluth/Superior shoreline over the last 25 years. He has extensive design and development experience in the areas of waterfront, heavy marine, civil, dams, and industrial building structures. **Chad will provide quality assurance services to the project to ensure we exceed the City's expectations.**

Registered professional engineer in Minnesota.

RECENT RELEVANT EXPERIENCE

- Lakewalk Shoreline Repair – Duluth, MN
- Rainy Lake Medical Center River Bank Stabilization – International Falls, MN
- Encampment Forest Association Shoreline Rehabilitation – Two Harbors, MN
- Bayfront Trail – Duluth, MN
- Transient Boat Facility, DEDA & Minnesota DNR –Duluth, MN
- Pier B Resort – Duluth, MN
- Duluth Shoreline Rehabilitation, Canal Park – Duluth, MN
- Congdon Boulevard Bin Wall & Storm Wall – Duluth, MN



RYAN DAGGER PE

PROJECT MANAGER FOR DESIGN/ CONSTRUCTION ADMINISTRATION

Ryan is a coastal engineer with over four years of experience designing native vegetation along shorelines, in prairies and in forests. He focuses on preserving the natural and historic qualities of the landscape while blending with the project's aspirations. Ryan is the assistant coastal engineering department manager for AMI. **Ryan will serve as project manager during the design and construction administration phases of the project.**

Registered professional engineer in Minnesota.

RECENT RELEVANT EXPERIENCE

- Burlington Bay Properties, Adjacent Residential Shoreline Stabilizations – Two Harbors, MN
- City of Stillwater Riverbank, Native Shoreline Vegetation – Stillwater, MN
- Woodstock and Pokegama Bay, Native Prairie & Shoreline Vegetation – Superior, WI
- Riverview Drive, Residential Shoreline Stabilization – Superior, WI
- Little Sand Bay & Devil's Island – Russel, WI
- Emergency Lakewalk Shoreline Stabilization – Duluth, MN
- The Harbors Shoreline Protection – Two Harbors, MN



ZACHARY MORRIS PE

QUALITY CONTROL & FEMA LEAD

Zac frequently inspects, develops design recommendation reports, and successfully executes coastal projects from their infancy through final completion. He has a deep understanding of geotechnical and coastal designs given his experience, master's degree in geotechnical engineering, and continuing education in Coastal Engineering. **Zac will provide quality control of all project work and will facilitate coordination with the City in regards to the documentation required for FEMA.**

Registered professional engineer in Minnesota and Wisconsin.

RECENT RELEVANT EXPERIENCE

- Emergency Lakewalk Shoreline Stabilization – Duluth, MN
- Rainy Lake Medical Center River Bank Stabilization – International Falls, MN
- Encampment Forest Association Shoreline Rehabilitation – Two Harbors, MN
- SPPA Red Rock Terminal, FEMA Flood Repairs – St. Paul, MN
- Duluth Shoreline Rehabilitation Canal Park – Duluth, MN
- Emergency Shoreline Stabilization – South Manitou Island, MI
- Burlington Bay Properties, Adjacent Residential Shoreline Stabilizations – Two Harbors, MN
- City of Stillwater Riverbank, Native Shoreline Vegetation – Stillwater, MN
- Woodstock and Pokegama Bay, Native Prairie & Shoreline Vegetation – Superior, WI



NICOLE PETERSON EIT

DESIGN & PERMITTING

Nicole is a marine civil/coastal engineer with four years of experience in the industry. She focuses on projects located at or near the land-water interface, including river, lake, and ocean coastlines. Taking a broad and fully informed approach to a project, she strives to develop win-win solutions for both the natural and built environments. Nicole has had the opportunity to participate in all phases of the project lifecycle; she particularly enjoys the technical components involved in producing design documents and communicating with her clients. **Nicole will provide design engineering for the shoreline and coordinate permitting to ensure the project is compliant with all necessary regulations and requirements.**

RECENT RELEVANT EXPERIENCE

- Duluth Shoreline Rehabilitation Phases IV and V – Duluth, MN
- City of Stillwater Riverbank, Native Shoreline Vegetation – Stillwater, MN
- Jean Lafitte Canal Backfilling – National Park Service – Town of Jean Lafitte, LA
- Lake Superior Residential and Commercial Shoreline Stabilization Projects



JARED MUNCH EIT

DESIGN & SURVEY

Jared is a marine civil/coastal engineer with two years of experience in the industry. He frequently performs scientific studies of surface wave propagation, tasks related to wave runoff, overtopping, and forces on coastal structures, slope stability, hydrographic surveying, GIS data management, hydrodynamic modelling, and drafting in Autodesk Civil 3D. Jared enjoys projects that present the opportunity to explore how the physical environment affects coastal infrastructure. He is recognized as the first and only person to stand up paddle board around the entire perimeter of Lake Superior. He utilizes a strong physical understanding of meteorology and hydrodynamics gained from these and other water-bound endeavors to help ensure realistic input and output of hydrodynamic calculations and simulated models. ***Jared will support design efforts for the shoreline and any necessary survey work on land or water.***

RECENT RELEVANT EXPERIENCE

- Emergency Lakewalk Shoreline Stabilization – Duluth, MN
- Rainy Lake Medical Center River Bank Stabilization – International Falls, MN
- Stillwater Riverbank Stabilization
- City of Duluth Lakewalk Shoreline Rehabilitation Phase IV
- City of Duluth DECC Seawall Phase II
- City of Duluth Shoreline Rehab Phase V
- NPS Schemmer Hokenson Dock Inspection & Rehab
- Lake Superior Shoreline Stabilization and Outfall Structures
- ADM Inspections & Repair Design
- Barkers Island Development



RANDY MANDEL

SENIOR ECOLOGIST

Randy is a leading ecology expert and brings over 30 years of experience specializing in the use of site-specific native plants, the integration of ecological and constructed systems, and the thoughtful incorporation of native flora and fauna to over 5,000 project sites throughout his career. He co-founded and managed Rocky Mountain Native Plants Company, one of the largest container native plant nurseries in the U.S., for over 13 years. He has authored over two dozen publications, including international journal articles and a stand-alone monograph on the use of wetland plant species for biofiltration. ***Randy will be responsible for scope development of design options and alternatives as well as performing a peer review of the coastal engineering designs.***

RECENT RELEVANT EXPERIENCE

- Windy Gap Reservoir Channel Connectivity, Technical Design and Implementation Support, Grand County, Colorado
- United States Army Corps of Engineers (USACE), Engineering with Nature Natural and Nature-Based Economic Analysis and Riverine Restoration Support, Vicksburg, Mississippi
- Colorado Department of Natural Resources - Colorado Water Conservation Board (DNR-CWCB) Emergency Watershed Protection Program, Denver, Jefferson, Boulder, Larimer, Clear Creek, Douglas, Weld Counties, Colorado
- State of New York, Department of Environmental Conservation Lake Ontario Resiliency and Economic Development Initiative (REDI), Albany, New York
- United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) Rose Lake Plant Materials Center, Assistant Manager, East Lansing, Michigan
- Milltown/Clarks Fork River Superfund Site, Site-Specific Plant Production, Milltown, Montana



PROJECT DELIVERABLES

WORKPLAN

OVERVIEW

The City of Duluth is seeking professional civil and coastal engineering services for a portion of failed shoreline zone along the East Spirit Cove development in West Duluth that has impacted and closed a portion of the Waabizheshikana ("The Marten Trail").

Duluth Shoreline Expertise

AMI has completed multiple coastal projects for the City of Duluth and is very familiar with the City's communication protocols, expectations, deliverables, and project schedules.

AMI has performed several coastal designs along the North Shore of Lake Superior, none of which sustained damage after the October 2017, Spring 2018, and October 2018 storm events. AMI is well-versed in the design considerations required for a shoreline to be resilient on Lake Superior.

Importance of FEMA in Design Process

Our team has worked with FEMA and understands the critical nature of following proper communication and documentation. FEMA brings great value to this project and is a crucial stakeholder in how this project progresses. Keeping the communication open and the documentation well-organized will result in a successful project and will also reduce the burden on the City if FEMA conducts an audit in the future.



TASK 1 – FIELD INVESTIGATION

Utilities Locate - Site Survey & Drone

AMI will perform a utilities locate along with a site survey and aerial drone survey. AMI will validate the existing survey data with the new survey data to better capture the existing conditions since the time of the last survey performed. The utilities locate will be performed as a design locate request to ensure all relevant design information and utilities are marked out in the field. This pertinent information will be surveyed in by AMI and incorporated into the contract documents.

Wetland Delineation

A wetland delineation will be required for this project to ensure no negative impacts to above water or under water wetlands occur. The St. Louis River is the largest United States tributary to Lake Superior, and the St. Louis River Estuary is the largest of all the Great Lakes. Performing a wetland delineation will help preserve the estuarine environment and also provide pertinent information on the vegetation which is thriving at and around the project site. AMI will coordinate with the USACE and DNR to develop the official wetland locations at the project site.

TASK 2: DESIGN DEVELOPMENT

Design Documents

Based on the City's comments from the schematic design drawings, AMI will: refine the design and quantities; begin technical specifications for the project; write design specific verbiage for the City to include in their front-end documents; and produce detailed cost estimates. AMI will also evaluate the feasibility of both water-based construction and land-based construction. AMI will compare these options with respect to site disturbance, access, noise, neighborhood impact, wetland impact, and construction costs.

Plan Sets

We anticipate this project will consist of one full plan set. The plan set will be well-organized, concise, and detailed. This will be possible due to careful planning, clarity, and detail in the bid documents. In our experience, this additional time spent during the design process more than pays for the time saved in construction administration (reduced RFIs, change orders, ambiguities, constructability, etc.).

Stakeholder Meetings

The design development phase will require up to two review meetings with applicable stakeholders. AMI will facilitate these meetings and will require stakeholder participation; stakeholder engagement is critical to project success. AMI will work with the City of Duluth to ensure City department representation throughout this process. We expect a minimum of two stakeholder meetings during this phase of the design; one before the design development deliverable is submitted, the second after the design development deliverable is submitted and reviewed.

TASK 3: PERMITTING

Once a schematic design has been approved for each section of shoreline, conservative quantities will be assumed and permits will be submitted to the Minnesota Department of Natural Resources, City of Duluth and the United States Army Corps of Engineers. AMI will manage the permit process and answer questions from the permitting agencies as needed to move the permits forward in a timely manner. The following permits are anticipated for this project:

- Design Led Permit: Minnesota DNR – Public Waters Permit
- Design Led Permit: USACE – Nationwide Permit 13 Bank Stabilization
- Contractor Led Permit: City of Duluth Shoreline and Floodplain Permit
- Contractor Led Permit: City of Duluth Erosion and Sediment Control Permit
- Contractor Led Coverage: NPDES Construction Stormwater

Given the anticipated size of soil disturbance on the project (>1 acre of soil disturbance), a Stormwater Pollution Prevention Plan (SWPPP) is anticipated to be required. AMI will develop this plan for incorporation into the Contract Documents and will work with the awarded contractor on the NPDES application to ensure proper controls are installed and maintained throughout the duration of the project.

TASK 4: FINAL DESIGN & BIDDING PHASE

Final Design

AMI will adjust the design development drawings, cost estimates, and technical specifications based on comments received by the City of Duluth and stakeholders. We will produce a 100% draft drawing set and issue to the City for comments. We expect one meeting with the City and necessary stakeholders will be necessary following review of the draft 100% submittal.

Bid Documents

Bid documents will reflect comments from the draft 100% submittal. The bid documents will consist of detailed cost estimates, bid form, technical specifications, and supplemental front-end verbiage for the City to include in their front-end documents including any FEMA related requirements.

Bidding Phase

Throughout the bidding process, AMI will help the City by attending the pre-bid meeting, preparing an agenda for the meeting, taking meeting minutes, responding to questions, and evaluating the bids. We will also provide comments and recommendations. AMI will generate the materials testing schedule for the City to solicit request for quotes from third party material testing agencies as required.

TASK 5: CONSTRUCTION ADMINISTRATION & INSPECTION PHASE

Dedicated, Local, On-site Team

AMI will ensure professional and trained personnel are onsite 100% of the time to document the active construction duration. AMI has a team of well-versed coastal engineers who have experience working in the St. Louis River Estuary as well as on the shoreline of Lake Superior. AMI has specifically selected several employees to perform special inspections and/or routine site inspections throughout this project. Our project manager, Ryan Dagger has served the City of Duluth for more than 3 years at AMI and is dedicated to ensuring the City receives an excellent product at an appropriate fee. Ryan's experience will ensure all change orders, if any, are fully merited and their pricing is fair and competitive. Ryan will coordinate the construction administration efforts for this project.

Construction Documentation

The construction documentation and record keeping portion of this project will be led by both Ryan Dagger and Zac Morris. Their combined knowledge and understanding of FEMA processes will ensure the project is well-documented. One of our goals is to ensure the City is protected if ever audited by FEMA. We will work closely with the City to better understand lessons learned from the City's previous experience with FEMA, and to better understand their internal process with FEMA and the history with respect to this project. AMI will work closely with the City to strengthen the project documentation efforts.

Contractor Coordination

AMI will work with the awarded Contractor by sharing stripped down CAD files and setting up survey control on-site with the Contractor. We will hold weekly project meetings and generate weekly progress reports summarizing work completed and all required documentation to support the FEMA process. If questions arise on-site, AMI personnel will notify AMI's Project Manager immediately to resolve questions quickly and efficiently. Depending on the question, AMI will direct the Contractor to submit a Request For Information (RFI) or issue an Engineers Supplemental Information (ESI). AMI will not be performing construction staking. AMI will work with the Contractor and validate the Contractor's staking at critical points throughout construction.

Special Inspections

During critical components of the project, an AMI employee with extensive experience will perform special inspections. The day-to-day inspector will document the construction progress, verify work being conducted and conformance with the Contract Documents. The special inspector will show up during critical times to inspect critical features such as best management practices, rock placement underwater, planting techniques, etc.

Managing Change Orders

Throughout the construction process, if quantities or scope changes are required or recommended, the City will be notified of these proposed adjustments immediately. AMI will submit an Engineers Proposal Request (EPR) to the Contractor to confirm scope and anticipated fees. AMI will ensure that no significant changes are approved without approval by the City of Duluth.

Surveys

Throughout the construction process, AMI will survey final grades, feature lines, and materials. These surveys will provide a detailed breakdown of any potential quantity over/under runs and will serve as the as-builts for the City of Duluth's records.

Final Construction Document and FEMA

After construction is completed, AMI will issue to the City of Duluth an electronic copy of our construction administration documentation from this project. AMI will also provide a workflow document that will assist both present and future City personnel in navigating through the documentation if, for example, additional information is requested from FEMA.

REFERENCES



KARINA HEIM

LAKE SUPERIOR NATIONAL
ESTUARINE RESEARCH RESERVE

Coastal Training Program (CTP) Coordinator
715.399.4089 | karina.heim@wisc.edu



LINDA CADOTTE

CITY OF SUPERIOR

Director of Parks, Recreation & Forestry
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GENE CLARK

WISCONSIN SEA GRANT


Coastal Engineer (Retired)
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KEVIN LOCK

NORTHERN WATER CONSERVATION DISTRICT

Water Resources Project Engineer
970.622.2215 | klock@northernwater.org

Waabizheshikana Shoreline Restoration Cost Estimate																									
<div>©2021 AMI Consulting Engineers, P.A.</div> <div>The information contained in this Proposal was prepared specifically for you and contains proprietary information. We would appreciate your discretion in its reproduction and distribution.</div> <div>This information has been tailored to your specific project based on our understanding of your needs. Its aim is to demonstrate our ideas and approach to your project compared to our competition. We respectfully request that distribution be limited to individuals involved in your selection process.</div>	Resource	AMI																		Ramboll		<div></div> <div>Consulting Engineers P.A.</div>			
		Chad Scott, QA		Ryan Dagger, PM & Coastal Lead		Zac Morris, QC & FEMA Lead		Nicole Peterson, Permitting & Design		Jared Munch, Design Support		Seth Johnson, Renderings		Jordan Vargas, Wetland Delineation		Engineer I, Construction Admin		1-Man Survey Crew		Randy Mandel, Senior Ecologist					
		Billing Rate		\$235.00		\$125.00		\$155.00		\$105.00		\$105.00		\$125.00		\$120.00		\$95.00		\$150.00					
Task 1 - Field Investigations		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs Subtotal	Labor Cost Subtotal	Expenses	Totals
Utilities Locate, Site Survey & Drone			\$ -	2.00	\$ 250.00		\$ -	5.00	\$ 525.00	2.00	\$ 210.00		\$ -		\$ -		\$ -	8.00	\$ 1,200.00		\$ -	17.00	\$ 2,185.00	\$ 230.00	\$ 2,415.00
Wetland Delineation			\$ -		\$ -	1.00	\$ 155.00		\$ -		\$ -		\$ -	28.00	\$ 3,360.00		\$ -		\$ -		\$ -	29.00	\$ 3,515.00	\$ -	\$ 3,515.00
Subtotal		0.00	\$ -	2.00	\$ 250.00	1.00	\$ 155.00	5.00	\$ 525.00	2.00	\$ 210.00	0.00	\$ -	28.00	\$ 3,360.00	0.00	\$ -	8.00	\$ 1,200.00	0.00	\$ -	46.00	\$ 5,700.00	\$ 230.00	\$ 5,930.00
Task 2 - Design Development		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost				
60% Design Development																									
Design Drawings & Options		1.00	\$ 235.00	4.00	\$ 500.00	2.00	\$ 310.00	60.00	\$ 6,300.00	18.00	\$ 1,890.00	24.00	\$ 3,000.00		\$ -		\$ -		\$ -	12.00	\$ 3,036.00	121.00	\$ 15,271.00	\$ -	\$ 15,271.00
Cost Estimate			\$ -	4.00	\$ 500.00	4.00	\$ 620.00	12.00	\$ 1,260.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	20.00	\$ 2,380.00	\$ -	\$ 2,380.00
Review Meeting with City of Duluth			\$ -	2.00	\$ 250.00		\$ -	4.00	\$ 420.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	6.00	\$ 670.00	\$ -	\$ 670.00
Specification Outline			\$ -	1.00	\$ 125.00		\$ -	4.00	\$ 420.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	5.00	\$ 545.00	\$ -	\$ 545.00
90% Design Development																									
Design Drawings		1.00	\$ 235.00	12.00	\$ 1,500.00	2.00	\$ 310.00	80.00	\$ 8,400.00	6.00	\$ 630.00	12.00	\$ 1,500.00		\$ -		\$ -		\$ -	6.00	\$ 1,518.00	119.00	\$ 14,093.00	\$ -	\$ 14,093.00
Cost Estimate			\$ -	1.00	\$ 125.00	1.00	\$ 155.00	4.00	\$ 420.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	6.00	\$ 700.00	\$ -	\$ 700.00
Review Meeting with City of Duluth			\$ -	2.00	\$ 250.00		\$ -	4.00	\$ 420.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	6.00	\$ 670.00	\$ -	\$ 670.00
Draft Specifications			\$ -	4.00	\$ 500.00		\$ -	60.00	\$ 6,300.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	64.00	\$ 6,800.00	\$ -	\$ 6,800.00
Subtotal		2.00	\$ 470.00	30.00	\$ 3,750.00	9.00	\$ 1,395.00	228.00	\$ 23,940.00	24.00	\$ 2,520.00	36.00	\$ 4,500.00	0.00	\$ -	0.00	\$ -	0.00	\$ -	18.00	\$ 4,554.00	347.00	\$ 41,129.00	\$ -	\$ 41,129.00
Task 3 - Permitting		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost				
Permitting			\$ -		\$ -	4.00	\$ 620.00	28.00	\$ 2,940.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	32.00	\$ 3,560.00	\$ -	\$ 3,560.00
Subtotal		0.00	\$ -	0.00	\$ -	4.00	\$ 620.00	28.00	\$ 2,940.00	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	0.00	\$ -	32.00	\$ 3,560.00	\$ -	\$ 3,560.00
Task 4 - Final Design & Bidding		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost				
Final Design																									
Design Drawings		2.00	\$ 470.00	4.00	\$ 500.00	1.00	\$ 155.00	48.00	\$ 5,040.00		\$ -	6.00	\$ 750.00		\$ -		\$ -		\$ -	4.00	\$ 1,012.00	65.00	\$ 7,927.00	\$ -	\$ 7,927.00
Cost Estimate			\$ -	1.00	\$ 125.00		\$ -	2.00	\$ 210.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	3.00	\$ 335.00	\$ -	\$ 335.00
Review Meeting with City of Duluth			\$ -	2.00	\$ 250.00		\$ -	4.00	\$ 420.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	6.00	\$ 670.00	\$ -	\$ 670.00
Final Specifications			\$ -	4.00	\$ 500.00	2.00	\$ 310.00	12.00	\$ 1,260.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	18.00	\$ 2,070.00	\$ -	\$ 2,070.00
Bidding			\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	0.00	\$ -	\$ -	\$ -
Pre-Bid			\$ -	3.00	\$ 375.00		\$ -	4.00	\$ 420.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	7.00	\$ 795.00	\$ 15.00	\$ 810.00
Addendums & Review of Bids			\$ -	4.00	\$ 500.00	1.00	\$ 155.00	16.00	\$ 1,680.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	21.00	\$ 2,335.00	\$ -	\$ 2,335.00
Subtotal		2.00	\$ 470.00	18.00	\$ 2,250.00	4.00	\$ 620.00	86.00	\$ 9,030.00	0.00	\$ -	6.00	\$ 750.00	0.00	\$ -	0.00	\$ -	0.00	\$ -	4.00	\$ 1,012.00	120.00	\$ 14,132.00	\$ 15.00	\$ 14,147.00
Task 5 - Construction Administration		Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost	Hrs	Cost				
Mob/Demob			\$ -	3.00	\$ 375.00		\$ -	10.00	\$ 1,050.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	13.00	\$ 1,425.00	\$ 375.00	\$ 1,800.00
Site Inspections (4 weeks active construction assumed)			\$ -	24.00	\$ 3,000.00		\$ -		\$ -		\$ -		\$ -		\$ -	48.00	\$ 4,560.00	8.00	\$ 1,200.00		\$ -	80.00	\$ 8,760.00	\$ -	\$ 8,760.00
Office Work - Pay apps, submittals, RFIs, Punchlists			\$ -	16.00	\$ 2,000.00		\$ -	24.00	\$ 2,520.00		\$ -		\$ -		\$ -	24.00	\$ 2,280.00		\$ -		\$ -	64.00	\$ 6,800.00	\$ -	\$ 6,800.00
Office Work - Project Meetings, Reporting, & Coordination			\$ -	12.00	\$ 1,500.00	6.00	\$ 930.00	24.00	\$ 2,520.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	42.00	\$ 4,950.00	\$ -	\$ 4,950.00
FEMA Documentation			\$ -		\$ -	12.00	\$ 1,860.00		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -		\$ -	12.00	\$ 1,860.00	\$ -	\$ 1,860.00
Subtotal		0.00	\$ -	55.00	\$ 6,875.00	18.00	\$ 2,790.00	58.00	\$ 6,090.00	0.00	\$ -	0.00	\$ -	0.00	\$ -	72.00	\$ 6,840.00	8.00	\$ 1,200.00	0.00	\$ -	211.00	\$ 23,795.00	\$ 375.00	\$ 24,170.00
Project Totals		4.00	\$ 940.00	105.00	\$ 13,125.00	36.00	\$ 5,580.00	405.00	\$ 42,525.00	26.00	\$ 2,730.00	42.00	\$ 5,250.00	28.00	\$ 3,360.00	72.00	\$ 6,840.00	16.00	\$ 2,400.00	22.00	\$ 5,566.00	756.00	\$ 88,316.00	\$ 620.00	\$ 88,936.00