

Environmental Assessment Services

Prepared for: City of Marquette, Michigan
May 27, 2022



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Mr. Mikael Kilpela
City of Marquette, Michigan



Re: Environmental Assessment Services

Dear Mr. Kipela

GEI Consultants, Inc. (GEI) is pleased to submit the attached proposal to the City of Marquette to provide National Environmental Policy Act (NEPA) support through an Environmental Assessment (herein referred to as the Project). GEI is a full-service ecological, environmental, and engineering firm with substantial experience in water resources engineering, ecological shoreline design and restoration, and environmental and civil engineering.

GEI will provide the City of Marquette with a strong technical team with a deep understanding and experience required for Project implementation. GEI is uniquely qualified to support this project because:

- GEI has a history of serving the needs of the City of Marquette, from a local office that houses 46 employees.
- GEI's key staff have decades of experience with the requirements of NEPA. Our veteran team of senior NEPA managers ground GEI's technical strengths in environmental policy and permitting, natural resources management, water and air sciences, terrestrial and aquatic ecosystems, and cultural resources. Our team's experience includes participation in many phases of the NEPA process including categorical exclusion investigations, wetland and stream delineations, endangered species considerations, alternative formation, data gap identification, data collection and analysis, document preparation, impact evaluation, and mitigation planning and implementation.
- GEI professionals have prepared hundreds of documents of all types while guiding the NEPA process from scoping through the Record of Decision. GEI has led projects addressing a broad range of environmental restoration, land use planning and management, and ongoing terrestrial and aquatic monitoring efforts in high elevation systems across the western United States.
- GEI staff have experience in both managing Environmental Assessment (EA)/Environmental Impact Study (EIS) programs and resource reports for projects in the Great Lakes region, which has required conducting EIS support studies throughout the upper Midwest, including the Upper Peninsula of Michigan.
- Field efforts can be completed with local staff. GEI has four offices staffed with environmental personnel within the Upper Peninsula of Michigan and support staff in additional offices in Wisconsin, Duluth, Minnesota, and the Lower Peninsula of Michigan.

Thank you for the opportunity to be of service for this project. If you have any questions regarding the information contained in this proposal, please feel free to contact Eric Englund at 218.259.6926, eenglund@geiconsultants.com or George Meister at 906.662.4747, gmeister@geiconsultants.com.

GEI CONSULTANTS OF MICHIGAN, P.C.

A handwritten signature in black ink, appearing to read "E. Englund".

Eric Englund
Project Manager

A handwritten signature in black ink, appearing to read "G. Meister".

George Meister, PE
Project Director

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1. COMPANY INFORMATION

Company Background

From our beginning in 1970, GEI has evolved into a multidisciplinary environmental and engineering firm serving the water, energy, building, infrastructure, and industrial markets. With more than 1,000 staff and 47 offices nationwide, GEI is a leader in providing engineering and environmental technical services to a range of private and public sector clients, both domestically and abroad. As an employee-owned firm, we foster personal relationships with our clients and cultivate our staff in a partnership model, which is underpinned by continuous learning and sharing of knowledge. GEI's engineers and scientists work closely together to integrate ecology and engineering to solve complex water resource problems and design restoration projects that are not only functionally effective and stable, but ecologically sound in both the short and long term.

Office Locations

GEI is strategically located across the Midwest with 14 offices in or around Michigan (Figure 1). GEI has completed over 4,000 projects throughout the Great Lakes region. Key subject matter experts pertinent to this project are located nearby in GEI's offices in Marquette, Munising, Traverse City, Allendale, and Lansing, Michigan. This gives GEI the unique ability to provide the expertise needed to accomplish the goals of this project, while providing support staff with knowledge specific to this region.

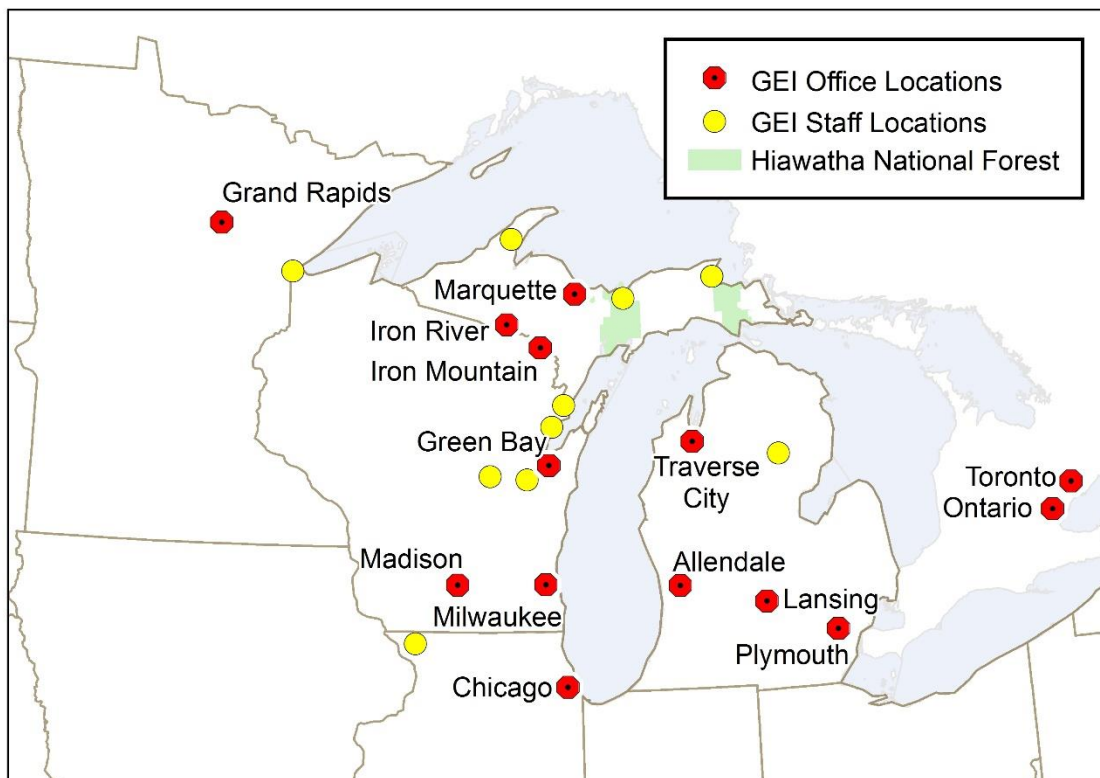


Figure 1. GEI Office and Staff Locations in the Great Lakes

If awarded the project, work will be managed out of the company's local office in Marquette.

GEI Consultants of Michigan, P.C.
109 W. Baraga Avenue, Marquette, MI 49855
906.451.4021

GEI National Environmental Policy Act (NEPA) Experience

GEI staff have successfully managed and executed numerous NEPA compliance projects both for Federal agencies and as an independent third-party contractor. Our client support has included completion of NEPA documentation, including preparation of EAs, EISs, and supporting studies as well as file management and public involvement. GEI staff have also developed a variety of NEPA support documents including various license and permit applications, technical analyses, EIS implementation plans, and EIS mitigation plans.

GEI's senior consultants have decades of experience with the requirements of NEPA. Our veteran team of senior NEPA managers ground GEI's technical strengths in environmental policy and permitting, natural resources management, water and air sciences, terrestrial and aquatic ecosystems, and cultural resources. Our team's experience includes participation in many phases of the NEPA process including categorical exclusion investigations, wetland and stream delineations, endangered species considerations, alternative formation, data gap identification, data collection and analysis, document preparation, impact evaluation, and mitigation planning and implementation. GEI professionals have prepared hundreds of documents of all types while guiding the NEPA process from scoping through the Record of Decision. GEI has led projects addressing a broad range of environmental restoration, land use planning and management, and ongoing terrestrial and aquatic monitoring efforts in high elevation systems across the western United States.

GEI's resource experts are proficient in conducting both reconnaissance-level and in-depth surveys to determine project impacts on the human environment. Our species-specific surveys and assessments include amphibians, mammals, migratory, passerine, and coastal bird species, reptiles, fishes, and water quality assessments. Wetland staff have experience with both straightforward as well as Great Lakes-related wetland delineations. Additionally, GEI has a team of senior regulatory and permitting specialists with experience in the development and attainment of permits related to the Clean Water Act (CWA) and Endangered Species Act (ESA), as well as compliance with state and local ordinances related to floodplains and aquatic resources. GEI's regulatory staff carefully monitor emerging policy trends such as the Navigable Waters Protection Rule, Nationwide Permit (NWP) regulations and associated conditions.

2. PROJECT UNDERSTANDING

The City of Marquette (City) is engaged in an effort to address coastal erosion, sedimentation, and road infrastructure damage caused by a series of storms from 2017 through 2019. The city previously completed a project addressing some coastal erosion and sedimentation along Lakeshore Boulevard and prepared an associated Environmental Assessment. The city is now pursuing a second phase of corrective actions focused on addressing a sediment plume in Lake Superior, further stabilizing eroding shoreline areas, and improving port access infrastructure. These actions are important as a means for restoring nearly 16 million dollars a year in revenue for the port, a matter made more pressing by current global material shortages.

To help cover the project implementation costs, the city partnered with Cleveland-Cliffs, Incorporated and the Superior Watershed Partnership to pursue a grant from the United States Maritime Administration (MARAD). As a federal agency, MARAD is required to consider effects to the human environment under National Environmental Policy Act (NEPA) regulations when making its decision. The city intends to prepare third-party NEPA documentation on behalf of MARAD and is seeking consulting assistance with completion of the work. The NEPA process and documentation must follow federal NEPA regulations for process, record-keeping, and documentation, and be consistent with MARAD's *Guidance on the NEPA Process for Grantees*. In MARAD's grant process, the agency delegates consultation authority to the grantee. In this case, the city's NEPA consultant will be responsible for consultation under Section 7 of the Endangered Species Act and will use National Historic Preservation Act Section 106 consultation documentation provided by others.

Based on the City's prior completed project, information contained in the Request for Proposal, and our NEPA experience, GEI understands that the following scope of work is required.

1. Meet with City representatives to:
 - Obtain background data
 - Clarify the project purpose and need
 - Document alternatives considered
 - Discuss public involvement. Based on public outreach for the prior project, GEI assumes:
 - two pre-draft EA open houses, a press release, and a 30-day comment period initially, and
 - a 30-day post-draft EA comment period

The specific public outreach the City wants to propose to MARAD will be determined at the meeting.

 - Develop an initial project schedule
 - Set up a file structure and record-keeping system
2. Contact MARAD to discuss public involvement and consultation requirements.
3. Compile existing information and collect additional rare species data to fill in data gaps.
4. Initiate consultation with resource agencies regarding endangered species.
5. Coordination with city staff to complete necessary public involvement activities.
6. Complete analysis of existing and collected information to prepare a draft EA for City review.
7. Make necessary revisions and release draft EA for public and agency comment.
8. Collect comments, prepare a Response to Comments appendix, and revise the draft EA for City review.
9. Release the final document and associated project files to MARAD for use.

GEI used this understanding to develop our cost estimate. Both may be adjusted based on additional guidance from the City, results of agency consultations, requests from MARAD, and public concerns.

3. COSTS

Estimated Costs with Informal Consultation

Scope Task	Estimated Cost
Project Meetings & Communication	\$ 3,045
Public Involvement Coordination and Open Houses	\$ 2,764
Coordination with MARAD	\$1,218
Informal State & Federal Rare Species Communication	\$ 525
Data Collection and Compilation	\$ 1,276
Draft EA Preparation	\$ 17,735
One EA Revision following City Staff Review	\$ 1,737
Release EA for Comment, Collect & Prepare Response to Comments	\$ 2,883
Coordinate EA Revisions with City Staff	\$ 4,426
Manage & Catalogue Project NEPA File Documents	\$ 1,310
Provide Final EA & Project Files to MARAD	\$ 1,991
Project Management	\$10,933
TOTAL	\$47,079

Estimated Additional Costs for Formal Consultation (if needed)

Scope Task	Estimated Cost
Agency Communication and Documentation	\$ 4,641
Field Surveys (2)	\$ 5,236
TOTAL	9,877

4. STAFFING

The City of Marquette requires an experienced team with the depth and breadth of knowledge to carry out this project effectively. Each member of the GEI team has been selected for their expertise in each of the categories necessary for the successful completion of this project.

Short biographical summaries highlighting key team members' value to the City are listed below. Detailed resumes are included in **Appendix A**.



George Meister, PE – Project Manager

George provides civil engineering support on projects involving coastal works, marine structures, site planning, storm water management, construction management, and infrastructure design/upgrade. As a consulting engineer, he has supported design of municipal streets, water mains, and sanitary and storm sewers. He has a wealth of professional experience in the planning and design of commercial properties, residential communities, and industrial sites. Additionally, Mr. Meister has supported design and construction projects involving access roads, parking lots, storm water detention and retention systems, and utility routings and sizing. He is proficient with related software programs including AutoCAD™ drafting programs, Microsoft Project™, HEC-RAS, and HydroCAD, among others.



Robert Doherty – NEPA Lead

Robert is a senior scientist with a background in anthropology, history, and natural resources. During his 30-year career, he has managed a wide variety of public and private sector NEPA projects including eight in the Upper Peninsula of Michigan. His professional experience has involved large-scale recreation development and land management activities; energy facilities such as pipelines, transmission lines, and hydroelectric projects; mine development and closure; and oil spill cleanup, restoration, and compensation. His recent projects include oil pipeline certification, permitting, and compliance; ethnographic work for a multi-state water pipeline; socio-economic assessment of urban green space restoration; mine development regulatory assessment, and emergency response support.



Mike Peterson – NEPA Support

Mike is an Environmental Scientist with twelve years of experience in the biosciences and environmental and ecosystems services. He has experience with a diverse range of projects including project management, wetland delineations, environmental permitting and regulatory compliance, National Environmental Policy Act (NEPA) compliance, rare species evaluations, GIS mapping, conducting biological surveys, and coordinating site assessments and surveys.



Eric Englund, WPIT – Ecological Assessment

Eric is an environmental project manager with over 10 years of experience that has led and worked on a variety of projects throughout the upper peninsula of Michigan. These projects have ranged from transmission line rebuilds within the City of Marquette that spanned the Dead River, Operations and Maintenance plan creation within the Hiawatha National Forest requiring NEPA compliance, to wetland delineations and T&E species surveys on the Seney National Wildlife Refuge looking for rare plants. He works to maintain proactive

communication with his clients, work within established timelines and budgets, and ensures that the projects he manages are upheld to GEI's quality standards.



Zack Pitman – Ecological Assessment

Zack is a wetland ecologist whose experience at GEI includes conducting wetland delineations and associated mapping using ArcCollector software; creating plant lists and Floristic Quality Assessments of wetland and upland areas; documenting fauna encountered during wetland delineations, particularly birds and herpetofauna; and writing wetland reports. Additional experience includes advising on state and local regulations regarding wetlands and water resources; preparing permit applications on behalf of clients using the MiWaters online software; searching within watershed boundaries for potential wetland mitigation sites; monitoring conservation easements and wetland mitigation sites; preparing conservation easement agreements; participating in freshwater mussel surveys; participating in State of Michigan Procedure 51 stream surveys for fish and aquatic macroinvertebrates; conducting at tree surveys; planning and executing protected species surveys which conform to USFWS standards; developing aquatic invasive species monitoring plans; effectively treating invasive plant infestations using chemical and mechanical methods; participating in ecological restoration efforts such as tree planting and native plant seeding and blanketing; and safely operating heavy equipment such as tractors and skid-steers.



Stuart Kogge, PWS – Ecological Assessment

Stuart is a senior wetland/aquatic biologist and a Professional Wetland Scientist (PWS) with over 34 years of natural resource and wetland experience. He has Master of Science degree in Limnology/ Fisheries/Aquatic Biology from Michigan State University. He worked for the MDNR and MDEQ from 1985 to 1995 at the Cadillac District office in northern Michigan and was then recommended and took the MDEQ's State-wide coastal wetland biologist position in 1995 and then the State-wide inland wetlands biologist in 1997. He assessed and managed the State of Michigan's exemplary coastal wetlands pursuant to Part 323, Shorelands Management Act of NREPA and administered, hired, and trained wetland contractors for the Wetland Assessment Program (pursuant to Part 303 of NREPA), and provided annual technical, permitting, and enforcement training for district staff for Upper and Lower Peninsula MDEQ offices.

5. PROJECT EXPERIENCE

Descriptions of Upper Peninsula NEPA projects GEI staff successfully conducted environmental permitting compliance, construction compliance support, ecological studies, and prepared NEPA documents, are provided in **Appendix B**.

National Environmental Protection Act – Environmental Assessment and Protected Species Survey, Confidential Client - Chippewa, and Mackinac Counties



Key Elements/Relevance to this Project:

- Vegetation Surveys
- Wetland Delineation
- Endangered Species Surveys
- National Environmental Protection Act – Environmental Assessment

GEI team members were contacted in June 2015 to assist with development of NEPA Documentation (Environmental Assessment) for an electric distribution line rebuild, located within the U.S. Forest Service Hiawatha National Forest in Chippewa and Mackinac Counties,

Michigan. The electric supply network in this portion of the Upper Peninsula of Michigan has historically experienced periodic disruptions due to the limited capacity of existing lines, the adverse weather, and contact with woody vegetation. This project intended to improve capacity to handle additional loads, changing generation patterns, adverse weather, and increased demand within the service area. Hiawatha National Forest (HNF) requires environmental documentation in the form of an environmental Assessment (EA) to evaluate the direct, indirect, and cumulative environmental impacts that could result from the proposed work within the HNF.

GEI authored Chapter 2 of the EA document (Alternatives, including the Proposed Action). Chapter 2 of the EA to provide a detailed description of the proposed action as well as alternative methods for achieving the stated purpose. These alternatives were developed based on issues raised by the agencies, design constraints, and GEI input. This section also provided summary tables of the alternatives and the environmental consequences associated with each alternative. Additional services included wetland delineation and field assessment for protected species.

Plant community and habitat types identified and evaluated during this work included: scrub-shrub wetland, Northern bog, forested wetland, emergent wetland, upland coniferous forest, and upland open field. Species specific surveys were conducted for several plants and animals listed on the National Forest Regional Forester Sensitive Plant and Animal Species list of the Eastern Region. A comprehensive plant survey was conducted of each plant community and habitat type with specific attention to the following species within the Eastern Region: Roundleaf orchid (*Amerochis rotundifolia*), Walking-fern spleenwort (*Asplenium rhizophyllum*), Canadian milkvetch (*Astragalus canadensis*), Cooper's milkvetch (*A. neglectus*), American sloughgrass (*Beckmannia syzigachne*), Botrychium spp. (several species), Fairly slipper (*Calypto douglasii*), Fragile rockbrake (*Cryptogramma stelleri*), Ram's-head lady's slipper (*Cypripedium arietinum*), St. Lawrence bladderfern (*Cystopteris laurentiana*), English sundew (*Drosera anglica*), Flat-stem spikerush (*Elocharis compressa*), Smooth wild rye (*Elymus glaucus*), Black crowberry (*Empetrum nigrum*), Limestone swamp bedstraw (*Galium brevipes*), Boreal bedstraw (*G. kamtschaticum*), Ashy sunflower (*Helianthus mollis*), Dwarf lake iris (*Iris lacustris*), Butternut (*Juglans cinerea*), Moor rush (*Juncus stygius*), Vasey's rush (*J. vaseyi*), Soft-leaf Muhly (*Muhlenbergia richardsonis*), Alternate-flowered water milfoil (*Myriophyllum alterniflorum*), Arrowleaf sweet coltsfoot (*Petasites frigidus* var.

palmatus), Common butterwort (*Pinguicula vulgaris*), Canada mountain ricegrass (*Piptatherum canadense*), Lapland buttercup (*Ranunculus lapponicus*), Dwarf raspberry (*Rubus arcticus* ssp. *acaulis*), Satiny willow (*Salix pellita*), Torrey's rush (*Schoenoplectus torreyi*), Houghton's goldenrod (*Solidago houghtonii*), Northern dropseed (*Sporobolus heterolepis*), Long-stalked stitchwort (*Stellaria longipes*), and Dwarf Huckleberry (*Vaccinium cespitosum*).

Due to the type of impacts proposed and the limited size of the impacts, animal surveys focused on those species that had the highest probability of potential impacts. Animal surveys were conducted with specific attention to the following species: Blanding's turtle (*Emydoidea blandingii*) and Hine's emerald dragonfly (*Somatochlora hineana*).

Species specific and habitat surveys within the existing utility right-of-way of the HNF resulted in the identification of +170 unique plant species including one state threatened plant species, Arrowleaf sweet coltsfoot. In addition, potential habitat for the federal and state endangered Hines' emerald dragonfly was identified. Both of these features were marked in the field using handheld GPS units and incorporated into the EA and access plan for the proposed utility line rebuild project.

GEI crew navigated the project site(s) using Trimble Geo7X hand-held GPS unit paired with detailed field maps that were generated in ArcGIS 10.2 Wetland and habitat boundaries and protected species habitat were collected using a Trimble Geo7X hand-held GPS unit. Collected data was post-processed using Pathfinder Office software. The data was then analyzed and used to generate deliverable shapefiles and report figures in ArcGIS.

City of Craig Diversion Improvements, RiverWise Engineering - Craig, Colorado



Key Elements/Relevance to this Project:

- Stream Design Assistance
- NEPA Permitting
- Section 7 Consultation
- Mitigation Planning
- 404 Permitting Guidance (IP)

The purpose of this project is to upgrade a diversion structure and associated intake while providing improved fish habitat and developing additional recreation and economic opportunities for the City of Craig, Colorado. The existing diversion structure has been in place for decades and serves to provide municipal water supplies for the City. This structure currently spans the width of the Yampa River channel and

limits the ability of native fish assemblages to move up and down the channel, including four species protected under the Endangered Species Act. Additionally, an expansion of a regional park is planned along the south bank of the Yampa River which will provide naturalistic playground facilities, picnic areas, walking paths and improved fishing and boating access. The ultimate goals of the project are to 1) rehabilitate the diversion structure to better accommodate water intake; 2) provide new recreation and economic opportunities in a rural community; and 3) improve habitat for native aquatic species. It is anticipated that these activities will be funded via a cost-share grant from the federal Economic Development Agency (EDA).

GEI, serving as a sub-consultant to RiverWise Engineering, authored two separate draft environmental assessments (EA) for the various phases of the project and guided the creation of technical documents necessary to complete the NEPA process. This included developing a biological assessment (BA) covering six federally listed species and critical habitat designated areas, migratory birds, and bald eagles to obtain a not likely to adversely affect determination from the U.S. Fish and Wildlife Service. GEI provided design concepts, specifications for the new diversion structure, and design review to improve upstream and downstream passage of the native fish assemblage,

and to avoid and minimize impacts. GEI staff also provided guidance in approach to the prime for addressing wetland permitting under the section 404 individual permit (IP) process, including a robust purpose and need statement and alternatives analysis. Our compliance specialists also provided guidance related to wetland mitigation planning using the Colorado Stream Quantification Tool (CSQT).

Environmental Compliance and Permitting for Upper Beaver Brook Spillway Construction and Lower Beaver Brook Dam Reconstruction for Reservoir #2, Lookout Mountain Water District - Evergreen Colorado



Key Elements/Relevance to this Project:

- Sensitive Species Surveys
- Aquatic Resources Delineation
- Environmental Permitting and Compliance
- Agency Coordination and Consultation
- 404 Permitting Guidance (IP)

GEI provided both engineering design as well as environmental compliance and permitting tasks for the construction of the labyrinth

spillway for Upper Beaver Brook, Reservoir #1.

GEI supported the District in the evaluation of adverse impacts associated with depletions for the 10 acre-feet of additional storage that would be provided as a result of the spillway construction, including consultation with the USFWS and stakeholders

within the South Platte Water Related Activities Program. GEI's professional scientists took the lead in executing all natural resources tasks and associated permitting including conducting field investigations to delineate wetlands and determine the extent of sensitive habitats, data were collected in order to assess any impacts to rare, threatened, or endangered species. Investigation for Upper Beaver Brook included the formulation of an Alternatives Analysis to assess cumulative impacts as well as acquisition of a Special Use Permit from the USFS. The spillway was successfully built on schedule and within budget.

Lower Beaver Brook Dam Reconstruction is currently underway, scheduled to be completed in spring 2022. This project is federally funded, triggering requirements under the National Environmental Policy Act. GEI's permitting professionals have handled all permitting and compliance as well as agency coordination.

APPENDIX A - RESUMES

George M. Meister

Project Manager

Mr. George Meister is a Professional Engineer and provides civil engineering support on projects involving coastal works, marine structures, site planning, storm water management, construction management, and infrastructure design/upgrade. As a consulting engineer, he has supported design of municipal streets, water mains, and sanitary and storm sewers. He has a wealth of professional experience in the planning and design of commercial properties, residential communities, and industrial sites. Additionally, Mr. Meister has supported design and construction projects involving access roads, parking lots, storm water detention and retention systems, and utility routings and sizing. He is proficient with related software programs including AutoCAD™ drafting programs, Microsoft Project™, HEC-RAS, and HydroCAD, among others.

RELEVANT PROJECT EXPERIENCE

Lakeshore Wetland Restoration, City of Marquette, Marquette, MI. Project Manager, led design and oversaw construction administration of a coastal wetland restoration project. The project included creation of approximately three acres of wetland and stormwater conveyance. City storm water will be routed into the new wetland for cleaning prior to discharge into Lake Superior.

Stormwater Management Plan, City of Marquette, Marquette, MI. Project Manager, led development of a City-wide stormwater management plan including evaluation of non-point source discharge locations and potential future BMP locations and effectiveness.

Stormwater Operations and Maintenance Manual, City of Marquette, Marquette, MI. Project Manager, led development of a stormwater operations and maintenance plan to assist the public works department in identifying and planning necessary City-wide maintenance issues.

Whetstone Brook Streamwalk, City of Marquette, Marquette, MI. Project Manager, led completion of streamwalk along several miles of an urban brook to evaluate erosion, culverts, streambed stability and obstructions.

Whetstone Brook Hydrologic and Hydraulic Analysis, City of Marquette, Marquette, MI. Project Manager, led modeling and development of hydrologic and hydraulic analysis of the Whetstone Brook for use in FEMA floodplain mapping.

2-Mile Creek USFS Road Crossing, Iron County, MI. Project Manager/Engineer, performed full design and construction inspection services for a river crossing with the USFS and Superior Watershed Partnership. The crossing included removal of a dilapidated large culvert and replacement with a new open bottom arch on concrete footings with a natural streambed. Design included hydrologic and hydraulic modeling of the river to determine appropriate structure size and MDEQ permit preparation and submittals.

Cutthroat Trout Holding and Rearing Pond, Private Client, Bozeman, MT. Lead Engineer, designed an approximately two-acre Cutthroat trout rearing and holding pond. The well supplied pond is lined with an EPDM liner and water level control structure.



EDUCATION

B.S., Civil Engineering, Michigan Technological University, 2003

EXPERIENCE IN THE INDUSTRY

19 years

EXPERIENCE WITH GEI

10 years

REGISTRATIONS AND LICENSES

Professional Engineer, Michigan
American Society of Civil Engineers

Fish Holding Pond, Chief Lake Wilderness Youth Camp, Republic, MI. Project Manager, designed an approximately one acre well fed, lined, fish holding pond for instruction to youth for recreational fishing. Water level is maintained by an earthen spillway and drilled well.

Drainage Improvement Project, Charter, Negaunee, MI. Project Manager, developed a storm water management plan to eliminate excessive drainage discharge onto neighboring properties. Designed a retention basin system to accommodate a 50-year storm event.

Boney Falls Dam, UPPCO, Cornell, MI. Project Engineer, prepared Quality Control Inspection Plan, Temporary Construction Emergency Action Plan, and the Drawdown and Refill Plan for the Phase II Embankment Improvement Project. Plans were developed in accordance with Federal Energy Regulation Commission guidelines. (Project #112380).

High School Site Improvements, Marquette Area Public Schools, Marquette, MI. Project Manager, led the project design for \$2,000,000 of site improvements which include full site demolition, new parking, ADA access, sidewalk, utility work, and landscaping.

Marquette Municipal Service Center Design/Build, City of Marquette, MI. Project Manager, led the project design of the new service center including environmental, geotechnical, stormwater, site civil, and utility design services.

Keweenaw Bay Indian Community Marquette Casino Design/Build, Gundlach Champion, Marquette, MI. Project Manager, led the project design of a casino expansion, new hotel, water tower, and sewage system including four sanitary lift stations and over four miles of sanitary main. He worked closely with the owner and builder to develop the entire project and site expansion.

Keweenaw Bay Indian Community Baraga Casino Design/Build, Gundlach Champion, Marquette, MI. Project Manager, led the project design of a casino expansion, including site and utility improvements. He worked closely with the owner and builder to develop the entire project and site expansion.

855 W. Washington Redevelopment, Veridea Group, LLC, Marquette, MI. Project Manager, worked closely with the developer and architect to perform full site design including site grading, retaining walls, water main, sanitary sewer main, pedestrian pathways, and storm water management for the facility demolition and brownfield redevelopment.

Multiple Road and Utility Reconstruction Projects, Sault Ste. Marie, MI. Project Engineer, performed full design and construction administration on over a dozen different road and utility reconstruction projects in the City of Sault Ste. Marie, Michigan.

Multiple Road and Utility Design and Construction Administration Projects, Marquette Township, MI. Project Engineer, performed full design and construction administration on several different road and utility design projects in Marquette Township, Michigan.

Multiple Road and Utility Design and Construction Administration Projects, City of Marquette, MI. Project Engineer, performed full design and construction administration on several different road and utility design projects in City of Marquette, Michigan.

New Residential Community Conceptual Design, Bay Mills Indian Community, Brimley, MI. Project Manager, designed conceptual layout for an approximately 110-acre residential development in Brimley, Michigan.

New Residential Community Design, Harlow Farms, Marquette, MI. Project Manager, provided final design and construction inspection for an approximately 120-acre mixed use development in Marquette, Michigan.

Robert G. Doherty

Senior Environmental Scientist

Robert Doherty is a senior scientist in GEI's Lansing, MI office with a background in anthropology, history, and natural resources. During his 30-year career, Mr. Doherty has managed a wide variety of public and private sector NEPA projects involving large-scale recreation development and land management activities; energy facilities such as pipelines, transmission lines, and hydroelectric projects; mine development and closure; and oil spill cleanup, restoration, and compensation. Mr. Doherty's recent projects include oil pipeline certification, permitting, and compliance; ethnographic work for a multi-state water pipeline; socio-economic assessment of urban green space restoration; mine development regulatory assessment, and emergency response support.

REPRESENTATIVE PREVIOUS PROJECT EXPERIENCE

NEPA Compliance

Lake Powell Pipeline Project, Utah Dept. of Water Resources, UT and AZ. Prepared the project draft EIS ethnographic report summarizing Native American tribal perspectives on the pipeline project obtained through secondary research and informal consultation with thirty tribes having potential interests associated with the project.

Devil's Lake Flood Control Project, USACE, Devils Lake, ND.

Assessed impacts of a flood control outlet construction and operation on water quality, aquatic species (including the risk of invasive species), water withdrawals, and agriculture. Led preparation of the project Monitoring, Mitigation, and Restoration Plan and draft EIS.

Grand Island Recreation Area, US Forest Service, Munising, MI.

Assessed the ecological and social impacts of a proposed draft management plan involving transportation, recreation development, and habitat improvement activities. Prepared associated sections of the project EIS.

Crandon Mine Project, USACE, Crandon, WI. Coordinated wetland and aquatic resource data collection for mine Area of Potential Effect. Prepared the associated resource report and EIS wetlands sections.

Winton Hydroelectric Project, Minnesota Power (ALLETE), Winton, MN.

Studied the effects of proposed operating alternatives on wetlands and stream flow and prepared associated sections of the project license application. Provided testimony for Minnesota water quality certification and responses to US Forest Service filings. Prepared wetland and biological resource sections of the Applicant-Prepared Environmental Assessment.

Raco Project, Smithers Scientific Services, Raco, MI. Assessed the impacts to rare species, wildlife habitat, groundwater and surface water resources, and recreational use from development of a winter



EDUCATION

M.S., Natural Resources, University of Michigan

M.A., U.S. History, University of Pittsburgh

B.A., Anthropology, Kenyon College

EXPERIENCE IN THE INDUSTRY

30 years

EXPERIENCE WITH GEI

Less than 1 year

TRAINING AND CERTIFICATIONS

Writing Effective NEPA Documents, (Shipley Associates)

Technical Writing and Project Management (Shipley Associates)

Economic Impact Assessment for Planning (US Forest Service)

Environmental Review and Compliance (FERC)

Michigan Certified Stormwater Management Operator (C-22513)

Wetland Soils and Hydrology (WTI)

Wetland and Water Resources Regulation (CLE)

Floodplain Management (ASCE)

Natural Heritage Inventory and Screening (WiDNR)

Oil Spill Response and Planning (CTEH / OCC)

HAZWOPER (40-Hr)

ArcGIS Mapping and Analysis (ESRI)

Fire Behavior (National Wildfire Coordinating Group)

PROFESSIONAL AFFILIATIONS

International Society for Ecological Economics

United States Society for Ecological Economics

Turtle Conservancy

automotive testing facility. Prepared associated sections of the project NEPA documents.

North Madison to Huiskamp Project, American Transmission Company, WI. Completed wetland delineations along the proposed project corridor, prepared the project wetland and stream impact permit applications, and assisted with preparation of the project Environmental Assessment. Provided testimony in the project licensing hearing.

Gaylord Lake Project, US Forest Service, Gogebic County, MI. Assessed the impacts to wetlands, streams, wildlife, and community uses from a land management project involving transportation, timber, recreation, and wildlife habitat activities on 3000 acres of upland pine, hardwood, and aspen dominated forest. Prepared associated sections of the project NEPA documents.

Rudyard Project, US Forest Service, Rudyard, MI. Assessed the impacts to wetlands, streams, wildlife, and community uses from a land management project involving transportation, timber, recreation, and wildlife habitat activities on 4500 acres of aspen-dominated forest. Prepared associated sections of the project NEPA documents.

Betchler Marsh Project, US Forest Service, Raco, MI. Assessed the impacts to wetlands, streams, wildlife, and community uses from a land management project involving transportation, timber, recreation, and wildlife habitat activities on 4000 acres of pine-dominated forest. Prepared associated sections of the project NEPA documents.

Guardian II Gas Pipeline Project, ONEOK, WI. Completed wetland delineations along the proposed project corridor, prepared the project wetland and stream impact permit application, and assisted with preparation of the project Environmental Assessment.

Ixonia Gas Lateral Project, WE Energies, WI. Completed wetland delineations along the proposed project corridor, prepared the project wetland and stream impact permit application, and assisted with preparation of the project Environmental Assessment.

Sault Lateral Project, Great Lakes Gas Company, Chippewa County, MI. Completed wetland delineations along the proposed project corridor, prepared the project wetland and stream impact permit application, and assisted with preparation of the project Environmental Assessment.

Security Loop II Project, Great Lakes Gas Company, MI. Completed wetland delineations along the proposed project corridor, prepared the project wetland and stream impact permit application, and assisted with preparation of the project Environmental Assessment.

Empire Mine Project, Cliffs Mining Services Company, Palmer, MI. Completed wetland, aquatic resources, and rare species surveys for a proposed mine expansion. Prepared a resource report, project Environmental Assessment, and permit application and assisted with the wetland mitigation plan.

Tilden Mine Project, Cliffs Mining Services Company, Palmer, MI. Completed wetland, aquatic resources, and rare species surveys for a proposed mine expansion. Prepared a resource report, project Environmental Assessment, and permit application and assisted with the wetland mitigation plan.

Republic Mine Project, Cliffs Mining Services Company, Republic, MI. Completed environmental surveys and habitat assessments in the area of a dormant iron mine. Assisted in development of a preliminary mine closure plan, Environmental Assessment, and permit application for the closure program.

Socio-economic Studies

Back Forty Mine Project, Osisko Gold Royalties Ltd., Menomonee County, MI. Managed completion of permitting audit and regulatory risk assessment for a proposed non-ferrous open pit mine. Assessed historic landscape use practices and potential reserved rights treaty claims of local Native American Tribes. Prepared project report and presentation to client.

Deer Grove East Project, Openlands, Chicago, IL. Assessed effects to ecological processes, ecosystem services, and modeled the economic valuation of habitat restoration and trail development work completed at

Cook County's Deer Grove East preserve to improve the area's functioning as part of Chicago's green infrastructure.

Bridgeport Energy Facility Project, Emera Energy, Inc., Bridgeport, CT. Lead socioeconomic reviewer supporting Emera's compliance with Section 316(b) of the Clean Water Act (CWA). Reviewed socioeconomic reports for compliance with Rules 122.21(r)(10) and 122.21(r)(11) and prepared associated sections of the Peer Review Report for submission to the Connecticut Department of Energy and Environmental Protection.

Wetland Mitigation Research Project, Environmental Concerns in Rights-of-Way Management, Portland, OR. Completed historic and legal research addressing the past development of and projected future changes to wetland mitigation policy and regulation in the United States. Prepared a project report for presentation at the annual conference describing the project findings and implications for stakeholders.

Atlas of Pennsylvania Project, University of Pittsburgh Center for Social and Urban Research, Pittsburgh, PA. Completed research regarding the relationship between the geographic distribution of energy resources in Pennsylvania, transportation systems, and settlement patterns. Compiled the resulting information into Atlas sections containing historical graphics and explanatory text.

Michael (Mike) Peterson

Environmental Scientist



Mike Peterson is an Environmental Scientist with twelve years of experience in the biosciences and environmental and ecosystems services. He has experience with a diverse range of projects including project management, wetland delineations, environmental permitting and regulatory compliance, National Environmental Policy Act (NEPA) compliance, rare species evaluations, GIS mapping, conducting biological surveys, and coordinating site assessments and surveys.

Mr. Peterson has been involved with various energy and transportation projects throughout with Midwest region that included obtaining environmental permits, coordinating on-site evaluations and surveys, facilitating client-agency representative dialogue, implementing agency recommendations, and provided environmental clearance to proceed with construction.

He was certified through the Minnesota Wetland Delineator Certification Program in 2012 and received a certificate in Ecological Restoration from the University of Minnesota in 2015. He is a data license manager for the Minnesota DNR Rare Features Data, the Illinois DNR Natural Heritage Database, and is a Wisconsin DNR Certified Endangered Resources Reviewer. Mr. Peterson has extensive experience with mapping programs that include the use of ArcGIS and GPS.

PROJECT EXPERIENCE

Northern Wind Generation Project, Northern Wind LLC, Roberts County, SD. Contributed to National Environmental Policy Act (NEPA) documents and conducted onsite surveys for a 50-megawatt capacity wind farm in South Dakota. Responsibilities included conducting a native prairie survey, conducting a bald eagle nest survey via aircraft of a 10-mile radius of the project, and evaluating site conditions for suitable habitat for endangered species including the Dakota Skipper and remnant prairie plants. Contributed to the NEPA Environmental Assessment as an author for several sections.

Little Mountain Travel Management Plan, Bureau of Land Management (BLM), WY. Implemented a Travel Management Plan for an approximately 60,000-acre area on the west slope of the Big Horn Mountains. The Travel Management Plan approved by the National Environmental Policy Act (NEPA) program was established for the Little Mountain area. The implementation included designating roads as closed, open, restricted, or seasonally open for various purposes included improving rangeland health, wildlife habitat enhancement, safety, cattle grazing allotment requirements, and landowner requests.

NEPA Document Review and Contributor, Bureau of Land Management (BLM), WY. Participated in planning meetings, reviewed, and authored sections of NEPA documents including Environmental Assessments (EAs) and Categorical Exclusions (CXs) for several federal actions occurring on BLM managed lands. Sections contributed to included Areas of Critical Environmental Concern (ACEC), Recreation, Wilderness, Visual Resources, Travel Management, and Wild and Scenic Rivers.

Pipeline Waterway Crossing Restoration Geohazard Depth of Cover Projects, IL, MO, KS, OK. Project Manager responsible for environmental permitting and construction support for several similar depth of cover geohazard restoration projects where an existing pipeline crosses a waterway and becomes exposed due to natural processes. The projects typically involve an engineered design to stabilize the waterway banks and restore the depth of cover over the pipeline. The project components involve wetland delineations, threatened and endangered species reviews and surveys, state and federal permitting services for work within waterways, and the development of state construction stormwater pollution prevention plans (SWPPPs). Environmental inspections

EDUCATION

B.A., Biology, University of Minnesota, Duluth
B.S., Recreation and Outdoor Education,
University of Minnesota, Duluth

EXPERIENCE IN THE INDUSTRY

12 years

EXPERIENCE WITH GEI

<1 year

TRAINING AND CERTIFICATIONS

Minnesota Certified Wetland Delineator, 2012
(1244)

Wisconsin Department of Natural Resources
Certified Endangered Resources Reviewer
Ecological Restoration Certificate, University
of Minnesota

Erosion and Stormwater Management,
University of Minnesota

Hazardous Waste Operations and Emergency
Response (40 Hour HAZWOPER)

CPR and First Aid

ICS-100, ICS-200, IS-700 National Incident
Management System

are coordinated to occur pre, during, and post-construction to ensure compliance with permits and best management practices and to provide restoration oversight and achieve final site stabilization.

Fairmount Snowmobile Trail Rare Plant Survey, City of Duluth, MN. Field surveyor responsible for conducting a meander survey for rare species and resources along an approximately 1-mile segment for a proposed snowmobile trail system. Project also included a review of the Minnesota Department of Natural Resources Natural Heritage Information Database and coordination with the agency.

Endangered Resource Reviews for Pipeline Clients, MN, WI, MI, IL, IN, OH, NY, MO, KS, ND, NE, WY, MT. Responsible for conducting desktop reviews for endangered resources including federal and state listed threatened or endangered species, rare natural features, and species of concern. Reviews often include coordination with the U.S. Fish and Wildlife Service (USFWS) and state wildlife agencies, review of suitable habitat within project areas, determination of likelihood of species presence, and the development of avoidance, minimization, or mitigation measures for project activities. Role requires the need to be a Certified Endangered Resources Reviewer by the Wisconsin DNR, and to hold a Natural Heritage Information License Agreement with the Minnesota DNR and Illinois DNR.

South Dakota Department of Transportation (SDDOT) SD25, DeSmet, SD. Lead wetland delineator along a 16-mile state highway right-of-way corridor for the SDDOT. Project included wetland and mapping services for the 16-mile corridor in accordance with the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual and regional supplement. Wetland boundary, wetland type, and proposed wetland impacts were determined for the project. The project provided SDDOT with the delineation boundaries in compatible survey data format for project planning.

Horizontal Directionally Drilled (HDD) Pipeline Replacement Project at Interstate 35 Crossing, Clinton County, MO. Project Manager responsible for environmental permitting and environmental inspection support for an existing pipeline Geohazard Project, where a pipeline was replaced by means of HDD methods where it crossed U.S. Interstate-35 and an adjacent ephemeral stream. The project included the removal of the existing pipe where it crossed an ephemeral stream. The Project required U.S. Army Corps of Engineers Nationwide Permit 12 for Utility Activities, a plan for inadvertent loss of drilling fluids, and coordination of environmental inspections pre, during, and post-construction to ensure compliance with permits and best management practices and to provide restoration oversight and achieve final site stabilization.

Pipeline Maintenance Project Rare Plant Survey, Gogebic County, MI. Coordinated with Michigan Department of Natural Resources (MNDR) and U.S. Forest Service (USFS) Ottawa National Forest botanists to conduct a rare plant survey for a pipeline maintenance project to upgrade the Cathodic Protection system beyond the established pipeline right-of-way. The proposed area was near a known rare plant community. The survey resulted in the identification and documentation of rare plants and included a report summarizing the survey methods, GPS location data, figures, and photographs that were prepared on behalf of the pipeline client for submittal to the USFS and MDNR.

Invasive Species Survey, Pipeline Right-of-Way, Odanah WI. Project Manager responsible for conducting and coordinating an invasive species survey through a 13-mile-long pipeline right-of-way. The survey included GPS data collection, identification of species listed as invasive and noxious weeds list, estimation of height class and cover scale. Documented the results of the survey with the generation of figures, tables, and site photographs.

Proposed Pipeline Route Wetland Delineation, Northern MN. Wetland delineator for a proposed pipeline route sited in northern Minnesota. Worked in a team of two wetland delineators to collect wetland boundaries and data for a 400- to 500-foot-wide corridor along a 50-mile-long section. Conducted daily wetland delineations for consecutive days for two months. The wetland delineation was conducted in accordance with the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual and regional supplement. The GPS data collected each day was post-processed and submitted to the project team data managers at the end of each day.

Eric Englund
Staff Professional

Eric Englund is a staff professional in GEI's Green Bay, WI. He has over 10 years of experience in the energy industry related to environmental regulatory compliance. His main responsibilities have been related to the growth new business areas, mentoring of junior staff, and building existing client relationships. This was achieved by working diligently to build positive working relationships, reducing overall project costs, producing high quality deliverables, and surpassing overall expectations, all without having to sacrifice safety or performing tasks without being environmentally conscious.

PROJECT EXPERIENCE

CTH W Wetland Delineations, Wisconsin Department of Transportation, Reedsville, WI. Project Manager, Lead Delineator, and Report Author related to wetland delineations along CTH W in support of upcoming work being completed by the Department of Transportation.

STH 55 Wetland Delineations, Wisconsin Department of Transportation, Stockbridge, WI. Project Manager, Lead Delineator, and Report Author related to wetland delineations along CTH W in support of upcoming work being completed by the Department of Transportation.

STH 151 Wetland Delineations, Wisconsin Department of Transportation, Calumetville, WI. Project Manager, Lead Delineator, and Report Author related to wetland delineations along CTH W in support of upcoming work being completed by the Department of Transportation.

Bayport to Pioneer - X145 Rebuild, American Transmission Company, Stiles, WI. Construction Oversight Lead for 26 miles of transmission line rebuild in northeastern Wisconsin. Assured environmental compliance for all state and federal permits and approvals. Conducted threatened and endangered species surveys along with additional environmental surveys needed to support the project.

Hiawatha National Forest Operating Plan, American Transmission Company (ATC), Hiawatha National Forest, MI.

Planner and Ecology Lead, during the review period of the Special Use Permit issued to ATC by the United States Forest Service, the development of a new Operating Plan and supporting National Environmental Policy Act documentation was completed. As planner and ecology lead, oversaw the development of the Environmental Analysis, Biological Assessment and Biological Evaluation, public notices, public record for Freedom of Information Act requests, internal informational bulletins, and the development of reporting processes using geographical information systems to streamline approval processes. The Operating Plan was the first to be signed in the nation by the United States Department of Agriculture – Forest Service since the adoption of a new series of rules to prevent power lines causing wildfires on public land and will be used as a template for other utility companies with infrastructure on National Forest lands.

Bombay Hook National Wildlife Refuge Hunting and Fishing Plan, U.S. Fish and Wildlife Service, DE. Planner and Ecology Lead, Bombay Hook National Wildlife Refuge was selected as one of the first National Wildlife refuges to have hunting and fishing opportunities expanded as a part of the Department of Interior's



EDUCATION

B.S., Water Resources, University of Wisconsin

EXPERIENCE IN THE INDUSTRY

10 years

EXPERIENCE WITH GEI

Less than one year

TRAINING AND CERTIFICATIONS

Society of Wetland Scientists Wetland Professional in Training - 5/23/2021
Wisconsin Endangered and Threatened Species Handling Permit – 7/20 – 7/25
Species Permitted: Slender Glass Lizard, Ornate Box Turtle, Wood Turtle, Blanchard's Cricket Frog
Certified Endangered Resources (ER) Reviewer - Wisconsin DNR 2018 – Present
Wisconsin DNR HCP Karner Blue Butterfly and Lupine Survey Training 5/2020 – 5/2025
WI DNR National Heritage Inventory Training 7/12/2018 – 7/12/2023
Certified Storm Water Management Operator #C-21902 - Michigan 2/22/2021 - 7/1/2026
40HR HAZWOPER Certified 5/2021 - 5/2022
Red Cross First Aid and CPR 6/2021 - 6/2022

PROFESSIONAL AFFILIATIONS

Wisconsin Wetlands Association Member 12/1/2019 – Present
Society of Wetland Scientists (SWS) Member 12/1/2019 - Present

initiative to open 1.4 million acres of refuge land to public access. As planner and ecology lead, oversaw the development of the Hunting and Fishing plan for the Bombay Hook Refuge. The plan revised existing regulations and developed new hunting and fishing regulations for areas not previously open to these opportunities throughout the history of the refuge. This included preparing all applicable NEPA documents including the Environmental Assessment (EA), Section 7 Consultations, and Finding of No Significant Impact (FONSI).

Transmission Line Rebuild, Rerate, and Reconductor Projects, American Transmission Company, WI, and MI. Environmental Project Manager for over 10 transmission line rebuild/rerate/ reconductor projects across Wisconsin and Michigan. Attended project meetings, managed project budgets, obtained federal, state, and local permits, coordinated with regulatory agencies on behalf of the client, while also serving as field lead for environmental surveys, wetland delineations, and threatened and endangered species surveys. Additionally, provided construction oversight, and environmental trainings to crews through project completion.

Substation Construction, Maintenance, and Retirement Projects, American Transmission Company, WI, and MI. Environmental Project Manager for over 15 substation projects across Wisconsin and Michigan. Attended project meetings, managed project budgets, completed waste management plans, developed Spill Prevention Control and Countermeasure plans for facilities. Additionally, provided construction oversight, and environmental trainings to crews through project completion.

Spill Prevention, Control and Countermeasure, Stormwater Pollution Prevention Planning, Construction Oversight, Oil & Gas Industry, Rocky Mountain Region. Environmental Project Manager, coordinated with regulators and oil and gas operators to design and implement new practices to address environmental issues. Served as field lead for Stormwater Pollution Prevention Planning (SWPPP), Spill Prevention, Control, and Countermeasure (SPCC), and Leak Detection and Repair (LDAR) inspections on 2,000+ upstream and midstream oil and gas facilities to ensure environmental compliance throughout Colorado, North Dakota, Montana, and Wyoming.

Zack Pitman
Wetland Ecologist



Zack Pitman is a wetland ecologist in GEI's Traverse City, Michigan, office. Zack's experience at GEI includes conducting wetland delineations and associated mapping using ArcCollector software; creating plant lists and Floristic Quality Assessments of wetland and upland areas; documenting fauna encountered during wetland delineations, particularly birds and herpetofauna; and writing wetland reports. Additional experience includes advising on state and local regulations regarding wetlands and water resources; preparing permit applications on behalf of clients using the MiWaters online software; searching within defined watershed boundaries for potential wetland mitigation sites; monitoring conservation easements and wetland mitigation sites; preparing conservation easement agreements; participating in freshwater mussel surveys; participating in State of Michigan Procedure 51 stream surveys for fish and aquatic macroinvertebrates; conducting bat tree surveys; planning and executing protected species surveys which conform to USFWS standards; developing aquatic invasive species monitoring plans; effectively treating invasive plant infestations using chemical and mechanical methods; participating in ecological restoration efforts such as tree planting and native plant seeding and blanketing; and safely operating heavy equipment such as tractors and skid-steers.

Recent projects at GEI include wetland delineations and botanical surveys to fulfill NEPA PEL requirements on nearly 400-acres in Grand Traverse County, MI; wetland delineations and rare flora/fauna surveys on over 500 acres in Iosco County, MI; coordinating with the USFWS to develop and implement eastern massasauga rattlesnake surveys in Iosco County, MI; dwarf lake iris and Houghton's goldenrod census surveys and general botanical surveys in Mackinac County, MI; developing and conducting long-term monitoring of wetlands, aquatic invasive species, water quality, and zooplankton in Barry County, MI; and dune floristic surveys and interdunal wetland delineations in Muskegon County, MI. In each of these projects, Zack has served as a field botanist/ecologist to meet specific goals set by clients.

Huron Pines AmeriCorps Member - Conservation Science Technician, Michigan Natural Features Inventory, Lansing, MI. Mapped current and historic records of Michigan's rare plants and animals in the NatureServe Biotics database. Performed quality control for rare species occurrences within the Biotics database. Obtained new records of rare species occurrences from outside sources (e.g. researchers, citizen science databases, and university museum collections). Worked with MNFI scientists to plan and prepare for rare species surveys. Surveyed active raptor nests to determine breeding success of red-shouldered hawks and northern goshawks. Assessed prairie fen habitat quality using Coarse Metric Assessment protocol. Conducted demographic studies of *Iris lacustris*, a state threatened wildflower. Surveyed prairie fen communities for federally endangered Poweshiek skipperling and Mitchell's satyr butterflies. Assessed pollinator habitat via vegetation surveys. Assisted with surveys for and capture of federally threatened eastern massasauga rattlesnakes. Participated in visual surveys and trapping surveys of rare turtle species. Conducted natural community surveys following Michigan Forest Inventory (MiFI) protocol. Collected rare species data in the field using Survey 123. Frequently navigated through rough and remote terrain using a map and compass, GPS, and tablet-based apps such as BackCountry Navigator and Avenza. Conducted outreach on behalf of MNFI and Huron Pines AmeriCorps at local schools and public events. Assisted with the NOAA B-WET vernal pool monitoring program by training and providing resources for K-12 teachers. Updated species abstracts to better reflect current knowledge of Michigan's rare species.

EDUCATION

M.S. in Biology, Grand Valley State University, August 2018
B.S. in Natural Resources Management, Grand Valley State University, August 2016

EXPERIENCE IN THE INDUSTRY
4 Years

EXPERIENCE WITH GEI
2 Years

CERTIFICATIONS
S130/190 – Wildland Firefighter Type 1
RX 310 – Intro to Fire Effects
Project Learning Tree & Project Wild
Outdoor Educator

Huron Pines Americorps Member - Stewardship Technician, The Leelanau Conservancy, Leland, MI.

Worked as part of a crew to effectively manage Conservancy properties. Conducted surveys for target invasive plant species on Conservancy properties. Treated target species using mechanical and chemical techniques. Maintained herbicide equipment using strict decontamination procedures. Maintained public trails using a variety of equipment (mowers, chainsaws, etc.). Planned and led volunteer stewardship events. Assisted in rare plant surveys. Worked with local nurseries to purchase native plant species for restoration events. Used ArcGIS software to create maps and communicate information. Assisted in the preparation of hunting permits for conservancy natural areas. Conducted regular water quality monitoring in several streams throughout Leelanau County. Conducted official monitoring visits at natural areas and conservation easements. Maintained conservation easement monitoring records using Landscape Conservation Software. Assisted with a long-running bird banding project on conservancy property. Participated in community outreach events.

Graduate Teaching Assistant, Grand Valley State University, Allendale, MI. Taught several sections of a general education biology lab. Communicated scientific concepts to non-scientists. Introduced students to lab equipment including microscopes, pipettes, etc. Assured the safety of all students by communicating potential hazards and proper use of lab equipment. Graded student performance on weekly worksheets, quizzes, and a scientific research paper. Prepared several lectures on a variety of biology-related topics. Assisted in the future development of the introductory biology program. Conducted an independent research project (continuation of URGE research) with the ultimate goal of writing a Master's Thesis. Worked with a graduate committee to ensure successful completion of the Master's Thesis. Analyzed data using statistical software. Interpreted data to form a cohesive narrative surrounding the effectiveness of fire as a tool for spotted knapweed control. Analyzed soil samples for allelopathic plant chemicals using High-Performance Liquid Chromatography. Presented research findings at conferences and other public events. Assisted with various other student projects including mussel surveys, bird banding, vegetation sampling, and fish population monitoring.

Undergraduate Research Grants for the Environment (URGE) Scholar, Pierce Cedar Creek Institute for the Environment, Hastings, MI. Designed and carried out a research project in close collaboration with a research partner and a faculty mentor. Wrote a grant to receive funds and logistical support necessary to carry out the project. Established monitoring plots to measure plant community changes in response to controlled burn simulations. Simulated prescribed fire at study site to determine effectiveness as a control for spotted knapweed. Identified grassland plant species using a dichotomous plant key. Engaged in over 40 hours of volunteer service at Pierce Cedar Creek Institute including community outreach, invasive species removal, and native seed collection. Analyzed data using statistical software. Prepared a written scientific report detailing research findings. Presented research findings to a public audience.

Bird Survey Intern, Land Conservancy of West Michigan, Grand Rapids, MI. Visually and audibly surveyed conservancy properties for all present bird species throughout the breeding season. Mapped and analyzed bird habitat preferences using ArcGIS software. Navigated nature preserves using a map

Stuart N. Kogge, PWS

Sr. Wetland/Aquatic Biologist



Stuart (Stu) Kogge, PWS is a senior wetland/aquatic biologist and a Professional Wetland Scientist (PWS) with over 34 years of natural resource and wetland experience. He has Master of Science degree in Limnology/ Fisheries/Aquatic Biology from Michigan State University. He worked for the MDNR and MDEQ from 1985 to 1995 at the Cadillac District office in northern Michigan and was then recommended and took the MDEQ's State-wide coastal wetland biologist position in 1995 and then the State-wide inland wetlands biologist in 1997. He assessed and managed the State of Michigan's exemplary coastal wetlands pursuant to Part 323, Shorelands Management Act of NREPA and administered, hired, and trained wetland contractors for the Wetland Assessment Program (pursuant to Part 303 of NREPA), and provided annual technical, permitting, and enforcement training for district staff for Upper and Lower Peninsula MDEQ offices.

In 1999, Stu left the State of Michigan and started Wetland and Coastal Resources, Inc. (WCR) and in 2000, The Institute for Wetland and Coastal Trainings and Research. From 1999-2008 WCR provided ecological services relating to wetlands, lakes and streams, and aquatic resources while the non-profit organization conducted wetland delineation, mitigation and assessment and botanical plant identification classes that catered to MDNR, MDEQ, MDOT, private consulting firms.

In 2008 Stu sold his share of his company to join JFNew, which later became Cardno. In 2014 Stu left Cardno for GEI. Stu leads and conducts wetland assessments, delineations, mitigation design, ecological restoration, endangered species surveys, and fisheries and aquatic assessments (using P51, P22, and Freshwater Mussel Protocols). He coordinates with federal and state on larger more complex wetland and aquatic resource related projects. He also serves as GEI's critical dune and high-risk erosion area expert providing an array of services to clients, local realtors, and legal counsel on MDEQ regulatory issues pursuant to Part 353, Sand Dune Management, Part 325, Great Lakes Submerged Lands, Part 323, Shorelands Management, and Part 91, Soil Erosion and Sedimentation Control, of P.A. 451, of 1994.

WETLAND/PERMITTING PROJECT EXPERIENCE

Damfino Development, LLC, Botanical and Wetland Surveys, Muskegon County, MI. Conducted field site assessments, surveys, and provided regulatory assistance and guidance through the regulatory permitting process including interpretations and professional opinions of statutory mining exemptions and classifications of wetlands as interdunal, rare and imperiled, pursuant to Part 303 of NREPA.

Great Lakes Tunnel Project, Enbridge Energy and Stantec, Threatened and Endangered Species Population Estimates, Mackinaw County, MI. 2021. Project Manager, assisted with the development of a survey and monitoring plan for submittal to USFWS and MDNR for federally- and state-listed plant species, dwarf lake iris (*Iris lacustris*) and Houghton's goldenrod (*Solidago houghtonii*). Surveys were conducted in the spring and fall, respectively, and statistical

EDUCATION

M.S., Fisheries/Aquatic Biology, Limnology, Michigan State University

B.S., Fisheries and Wildlife Management, Michigan State University

EXPERIENCE IN THE INDUSTRY

35+ years

EXPERIENCE WITH GEI

Over 7 years (Sept 2014-present)

CERTIFICATIONS

Professional Wetland Scientist (since 2000)

Ohio Mussel Certification (2022-2027)

Federal permit for handling and relocation of federally listed freshwater mussels (valid 2019-2024)

Soil Erosion and Sedimentation Control Plan Review and Design; Comprehensive & Storm Water Management – Construction Site (exp 2023)

40-Hr OSHA HAZWOPER

8-Hr HAZWOPER Refresher

American Red Cross Adult CPR/AED

WETLAND and AQUATICS TRAININGS (partial listing)

2019 – GEI Internal freshwater mussel, macroinvertebrates, and fish identification

2018 – USFWS Freshwater Mussel Identification (5-days at National Technical Training Center, WV)

2015 – GEI Internal Wetland Training for the Arid West, US, Instructor

2014-2018 – Annual GEI Internal Wetland and Seasonal Botany Training, Instructor

2001-2008 – Twice annual classes with Wetland and Coastal Trainings and Research Institute (non-profit organization co-founded by Stu Kogge) on various classes for regulatory agencies including: Sedges, Spring Flora, Asters and Goldenrods, and Shrubs. Instructor alongside Dr. Anton Reznicek

2007-2008 - Wetland Training for Indiana Department of Environmental Management, Instructor

Prior to 2001 – Numerous USACE/MDEQ Wetland Delineation Manual Trainings and development of MDEQ field staff and wetland contractors for the MDEQ's Wetland Assessment Program

PROFESSIONAL ASSOCIATIONS

Society of Wetland Scientists, Member

American Fisheries Society, Member

Michigan Wetlands Association, Member

Michigan Association of County Drain Commissioners, DEQ Liaison Committee Member

AWARDS

Vice President, GEI, 2017

Employee of the Year, Cardno JFNew, 2010

Vice President Technical Serv., JFNew 2008

Sparkplug Award, MDEQ, 1997

Sparkplug Award, MDEQ, 1995

Land and Water Management Division Employee of the Year Award, MDEQ, 1990

analysis conducted to confirm sufficient quadrats sampled to provide population estimates for each species within various areas of the proposed impact and mitigation areas.

Michigan Department of Natural Resources, Fisheries Division, Thompson, MI. Project, and Technical Manager, responsible for obtaining USACE and EGLE permits for expanding the fish hatchery into regulated wetlands. In obtaining the permit 120-acres of land was assessed, a Final Wetland Mitigation Plan developed and preserved to mitigate for permitted impacts. GEI is conducting the maintenance, monitoring, and reporting to the agencies for the mitigation preservation site.

SEMCO Energy Gas Company, Proposed Marquette Connector Pipeline Project, Marquette and Delta Counties, MI. GEI technical lead and In-House Reviewer, for project team assessing wetlands for MDEQ permits. Technical field lead locating and assessing wetland mitigation sites and coordinating with regulatory agencies. Led team in finding, assessing, getting MDEQ approval, design, and permit approval for forested mitigation wetlands. Mitigation wetland has been constructed, planted, and is currently being monitored by GEI staff.

Confidential Mining Client, Upper Peninsula, MI. Senior Wetland/Aquatic Biologist, responsible for overseeing desktop and conducting field assessments to locate land for providing over 130 acres of wetland mitigation.

Cloverland Electric Cooperative, Mackinac Environmental Technology, Inc (MET), Chippewa and Mackinac Counties, MI. Refined and conducted field assessment methodologies for obtaining necessary information for the preparation of an Environmental Assessment (EA) for the U.S. Forest Service for work proposed within the Hiawatha National Forest. GEI authored portions of the EA that MET presented to the client.

Marquette County Road Commission, Proposed County Road 595, Marquette, MI. Based upon Mr. Kogge's past experience assessing resources associated with the Kennecott Mine site and surrounding areas he was hired to be a third-party reviewer of the MDEQ permit application that was being submitted by the Marquette County Road Commission. Recommendations were provided to further minimize resource impacts and reduce long-term liabilities of the road commission.

Kennecott Exploration (Eagle Mine) through Golder and Associates, Inc. Senior Wetlands Biologist, Fisheries/Aquatic Biologist, and Botanist. Provided the initial wetland delineations and assessments of wildlife, fisheries, and aquatic (Michigan Procedure 51) and threatened and endangered species for more than 3,500 acres of land for the proposed multi-billionaire dollar nickel mining project in Marquette County, Michigan.

Freshwater Mussel Surveys, Barr Engineering Co., Multiple Counties, MI. Senior Aquatic Biologist, conducted transect-based surveys for freshwater mussels at over 30 pipeline water crossings throughout the Upper and Lower Peninsula of Michigan. Required approval of work plan by MDNR, EGLE, and USFWS. 2019 surveys included Group 3a streams which required a federal permit. Provided quality assurance and control for over 30 mussel reports that are currently under review by agency personnel. Survey techniques included scuba diving, viewing buckets, grubbing.

ATC and Resolute Paper Company, Menominee River, MI, and WI. Senior Aquatic Biologist, these two mussel relocation projects were conducted during the same week for two different clients at three different sites on the river less, in Michigan and Wisconsin waters, but less than 2 miles apart. Mussels were relocated from these sites and all state-listed species were tagged for potential future post-relocation. Listed species included purple wartyback (*Cyclonaias tuberculata* – T) in Wisconsin, and black sandshell (*Ligumia recta* – E) in Michigan. Over a thousand mussels were relocated for these two projects.

Three Mile Creek Restoration, Hiawatha Sportsman's Club, Engadine, MI. Task Manager, responsible for pricing, devising an implementation plan, field oversight, and managing a "one of a kind" project. GEI was responsible for removing 200 cubic yards of sediment deposition from a 1,000-foot stretch of Three Mile Creek. This was in response to an earthen dam failure that resulted in sand and sediment depositing within the creek and adjacent wetlands. Challenges included removing the large amount of sediment using only hand tools and no excavating equipment due to the remoteness and topography of the site. In addition to sediment removal, restoration tasks included installation of native seed, native shrubs, and erosion control blanket.

APPENDIX B – UPPER PENINSULA NEPA PROJECTS (SUPPLEMENTARY COMPANY INFORMATION)

Upper Peninsula NEPA Project Descriptions

GEI has a wide array of staff (including permitting specialists, NEPA experts, wetland, wildlife, and aquatic biologists and botanists) in Michigan and Wisconsin, and our staff have experience developing cost-effective studies meeting the standards required and expected by regulatory agencies. This experience has been applied to numerous projects around the Great Lakes.

Some of the most pertinent projects our proposed project staff have completed are briefly described below:

- **Cloverland Electric Cooperative, Mackinac Environmental Technology, Inc.,** Chippewa and Mackinac Counties, MI. Environmental Assessment (EA) for the U.S. Forest Service for work proposed within the Hiawatha National Forest. GEI is authoring portions of the EA and conducted wetland and threatened and endangered species surveys necessary for the EA.
- **Hiawatha National Forest Operating Plan, American Transmission Company (ATC),** Hiawatha National Forest, Michigan. Worked on the development of a new Operating Plan and supporting National Environmental Policy Act (NEPA) documentation during the review period of the Special Use Permit issued to ATC by the United States Forest Service.
- **Sault Lateral Project, Great Lakes Gas Company, Chippewa County, MI.** Completed environmental reviews; prepared wetland, stream, floodplain, soil erosion, and incidental take permit applications; and prepared Hiawatha National Forest Special Use Permit Modification application.
- **Security Loop II Project, Great Lakes Gas Company, MI.** Completed environmental reviews; prepared wetland, stream, floodplain, and soil erosion permit applications; and prepared Hiawatha National Forest Special Use Permit Modification application.
- **ESE 6904-6905 Project, American Transmission Company, St. Ignace, MI.** Completed environmental reviews and prepared wetland, stream, floodplain, and Hiawatha National Forest special use permit applications for 40 miles of electrical transmission line. Also drafted environmental portions of the associated Forest Service Environmental Assessment.
- **Raco Project, Smithers Scientific Services, Raco, MI.** Assessed the impacts to rare species, wildlife habitat, groundwater and surface water resources, and recreational use from development of a winter automotive testing facility on the Hiawatha National Forest. Prepared the project application for Special Use Permit amendment and associated NEPA documents.
- **Rudyard Project, US Forest Service, Rudyard, MI.** Assessed the impacts to wetlands, streams, wildlife, and community uses from a land management project involving transportation, timber, recreation, and wildlife habitat activities on 4500 acres of aspen-dominated forest. Prepared associated sections of the project NEPA documents.
- **Betchler Marsh Project, US Forest Service, Raco, MI.** Assessed the impacts to wetlands, streams, wildlife, and community uses from a land management project involving transportation, timber, recreation, and wildlife habitat activities on 4000 acres of pine-dominated forest. Prepared associated sections of the project NEPA documents.
- **Grand Island Recreation Area, US Forest Service, Munising, MI.** Assessed the ecological and social impacts of a proposed draft management plan involving transportation, recreation development, and habitat improvement activities. Prepared associated sections of the project EIS

