

PROPOSAL FOR

# WHITEWATER TOWNSHIP

Water and Wastewater Services

04.07.2021







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April 7, 2021



Mr. Ron Popp  
Township Supervisor  
Township of Whitewater  
5777 Vinton Road  
Williamsburg, MI 49690

**Re: Proposal for Water and Wastewater Professional Engineering Services**

Dear Mr. Popp,

C2AE is pleased to provide Whitewater Township with our proposal for professional services to evaluate the extension of sanitary sewers and water mains into the Township that we have been discussing over the past several weeks. This high-level planning effort will focus on the economic and environmental benefits, cost estimating, review of possible funding sources, and estimated project phasing to construct and operate these new infrastructure systems. We are proud to have played a significant role in the development of several Northern Michigan communities over the past several decades. We have assembled a strong in-house project team that can provide expertise in all of the areas required to complete this effort.

C2AE has successfully operated an office in Gaylord since 1991, serving the Northern Lower and Eastern Upper Peninsulas of Michigan. We have an established client base in the area, and we have developed key contacts and sound working relationships with the funding and regulatory agencies throughout the region. Our project team has a close connection with the culture, economy, topography, climate, environment, and construction conditions in your region.

This proposal demonstrates C2AE's experience on similar projects and qualifications of key staff. To further demonstrate C2AE's desire and ability to assist the Township in making these projects successful, we offer:

- A driven team of C2AE staff with strong qualifications and experience in planning, designing, and constructing water and sewer infrastructure, streets, and a variety of other project types
- Past experience on infrastructure projects that involved contractual relations with tribal community assets
- Proven success with coordinating and helping to guide stakeholders, landowners, and governmental jurisdictions and agencies on collaborative multi-phase planning, design, and construction projects
- An established ability to estimate costs with accuracy
- Lasting relationships with and a comprehensive understanding of multiple funding agencies and sources

Principal-in-charge and project manager Larry Fox will act as the lead contact for this project and as an authorized representative of the firm. His email address is [larry.fox@c2ae.com](mailto:larry.fox@c2ae.com), his direct dial phone number is 989-688-6465, and his cell phone number is 989-619-7712. We thank you for the opportunity to submit our proposal and we are eager for the opportunity to further demonstrate our abilities. Feel free to contact us with any questions.

Sincerely,  
C2AE

A handwritten signature in blue ink that reads 'Larry Fox'.

Larry Fox, PE  
Project Manager

A handwritten signature in blue ink that reads 'Mike Jantz'.

Mike Jantz  
Funding Specialist

# FIRM INFORMATION

## WHO WE ARE

C2AE is an architecture, engineering, and infrastructure design firm with 50+ years of experience. We serve enterprise-level clients—clients that manage a network of multiple moving parts.

## WHAT SETS US APART

Our team of more than 100 people is truly full service. With professionals at every step of the design process, we bring enterprise thinking to each opportunity. We create architecture that empowers our clients and their communities, and enable it with innovative, technically-sound infrastructure design through intentional collaboration.











## EXPERIENCE

- 900** Miles of Sanitary Sewer
- 250** Miles of Storm Water
- 800** Miles of Water Main
- 40** Water Treatment Plants
- 70** Wastewater Treatment Plants
- 1,000** Miles of Highways & Roads
- 100** State, County & Local Parks
- 300** Miles of Trails
- 40** Libraries
- 15** Assisted Living Facilities
- 1.5 M** SF of Medical Facilities
- 125** Schools and Universities
- 20** Industrial Parks
- 2.5 M** SF of Manufacturing Facilities
- 100+** VA Projects
- \$800** million in grants and loans





## SERVICES

-  Architecture
-  Civil Engineering
-  Construction Admin.
-  Electrical Engineering
-  Interior Design
-  Landscape Architecture
-  Mechanical Engineering
-  Structural Engineering
-  Transportation
-  Water/Wastewater



**C2AE was vital to the project in initial planning, cost estimating, funding acquisition assistance, public information, and design and construction services. The firm also provided key assistance in obtaining a \$3.2 million EDA grant, the first in northeast Michigan in over a decade.”**

Marc Dedenback, Chair  
Beaver Creek-Grayling Twp.  
Utilities Authority





# PROJECT UNDERSTANDING



**Whitewater Township is seeking a consultant to assist in evaluating a clean water (sanitary sewer) collection system and drinking water distribution system to serve specific districts within the township.**

The purpose of the evaluation is to understand the economic and environmental benefits, the financial obligations and funding sources, and collection, operations, and maintenance considerations of these systems. The outcome of the evaluation will be the determination of a go/no-go of each system, locations, approximate capacities, phasing of system elements, and timelines.

The intended use of the proposed utility extension is to provide a permanent solution to failing septic systems, provide municipal sanitary sewer and drinking water utilities to areas designated as high-density residential, and provide utilities to areas designated as commercial and/or industrial to spur economic development and growth.

Initial thought is that both the sanitary sewer collection and drinking water distribution systems will be owned and operated by Whitewater Township, with wastewater treatment and drinking water supply being provided through an agreement with the Grand Traverse Band of Ottawa and Chippewa Indians (Tribe). The new township systems will connect to supply and treatment systems

located at the Turtle Creek facility. Operations and maintenance services for the Township owned system will either be self-performed or contracted out to a qualified service provider.

Preliminary needs are estimated to service approximately 250 end users with consideration for future growth up to 1,200.

Although the initial phase of this project is limited to an evaluation and feasibility determination, C2AE has outlined potential future steps if the determination is a go:

1. Project evaluation and feasibility study
2. Quality based selection (QBS) procurement
3. Preliminary engineering report and funding securement
4. Initial project design and construction
5. Future expansions

The purpose of including potential future steps is to provide Whitewater Township with a better understanding of the typical path projects like these follow.



# SCOPE OF SERVICES

## 1. PROJECT EVALUATION & FEASIBILITY STUDY

### Costs: \$20,500

The proposed project has unique elements that make a project evaluation and feasibility study desirable, as the study may result in a “no-go” determination. The project evaluation and feasibility study limits Whitewater Township’s investment until an educated determination can be reached. If a “go” is determined, the results of the project evaluation and feasibility study can be used in future steps. Step I will include the following tasks:

- Evaluate the clean water and drinking water needs of Whitewater Township
- Advise the township’s board and administrators to the available financial sources (loans and grants) and commitments related to these sources, including focusing on those with:
  - Failing systems and environmental needs
  - Associations to federally-recognized Indian Tribes
  - Associations to rural communities and developments
  - Associations to median household income
  - Associations to economic development
- Provide preliminary cost opinions and recommendations to project phasing, including
  - Initial phase and cost opinions

- Initial phase scheduling
- Subsequent phases and cost opinions
- Subsequent phase scheduling/capital improvement planning
- Assist Whitewater Township in developing draft agreements with the Tribe to satisfy state and federal regulators, such that the Whitewater Township has an understanding of the relationship between all parties

Upon completing the tasks under Step I, Whitewater Township officials will have a better understanding of potential costs, the potential terms and financial obligations, and a high level understanding of the environmental and economic benefits associated with the sanitary sewer and drinking water systems. A general understanding of agreements with the Tribe will also be clearer.

From here, Whitewater Township officials will be able to make an informed, educated decision on whether and how to proceed.





# SCOPE OF SERVICES

## 2. QUALITY BASED SELECTION/AS-NEEDED SERVICE CONTRACT

### Costs: \$0

Qualification based selection (QBS) is a procurement process established by the United States Congress for the use by public agencies and local units of government in the selection of architectural and engineering services for public construction projects.

QBS is a competitive contract procurement process whereby consulting firms submit qualifications to Whitewater Township, which later negotiates the project scope of work, schedule, budget, and consulting fees. The process is a means to ensuring that Whitewater Township receives the highest technical architect and engineering services from the most qualified firms at a fair and reasonable cost. The use of QBS is often a requirement for local units of government receiving federal funding, including grant and loan programs, for any portion of a project.

Completing QBS for a consulting firm will position Whitewater Township to respond quickly to federal and state funding opportunities.

Just because Whitewater Township has an agreement with a consulting firm does not prevent the township from going out for services in an alternative competitive means if the source of the funding does not require the use of the QBS process.

Considering Whitewater Township has or will have multiple assets, such

as a drinking water system, a sanitary sewer system, possibly a stormwater management system, local streets, fire stations, township offices, parks, pavilions, trails, and other recreational and municipal facilities, it may be advantageous to seek a full-service architectural, engineering, and municipal consulting firm capable of assisting with any of these assets.

Typical QBS/as-needed service contracts are set up for five years and can be reasonably extended several more years. Minimum QBS are established for one year and most initial contracts do not extend beyond 10 years.

C2AE holds several QBS and as-needed service contracts with the federal government, state government, and local units of government and can provide you with examples of QBS advertisements and agreements. Among the many clients we serve or have served on an as-needed basis are:

- MDOT Grand Rapids TSC
- MDOT Detroit TSC
- MDOT Muskegon TSC
- USDA Forest Service IDIQ
- US Department of Veterans Affairs
- American Center for Mobility
- Capital Region International Airport
- 30+ municipal governments



### 3. PRELIMINARY ENGINEERING REPORT

#### Costs: To be determined during Project Evaluation Phase

A preliminary engineering report is a planning document required by state and federal funding agencies as part of the process of obtaining financial assistance for development of drinking water and clean water (wastewater) systems. The purpose is the lending institutions want to ensure the borrower has an accurate understanding of the project from a design and construction point of view. Lending institutions also use this process to determine if funding is available for a project to move forward.

The report will build on work completed under Step I and result in a more accurate description of scope, costs and schedule, but is limited to design development and not construction documents. Design and construction documents are developed under Step IV once funding is secured. The preliminary engineering report process will often include these tasks:

- Prepare and assist in submitting preliminary intentions
- Prepare and assist in submitting necessary preliminary plans
  - Public participation meeting

- Alternative analysis
- Environmental impact evaluation
- Cost opinion and life cycle cost analysis
- Project plan submittal
- Application for grants if available

Often lending institutions require notification of intent to borrow in January and preliminary engineering reports due to the lending institutions near mid-year. It typically takes 90 to 120 days to prepare a preliminary engineering report.

Engineering fees for these services vary greatly depending on site specific factors, but do range between \$25,000 and \$100,000. Since Whitewater Township's project includes both drinking water and clean water, are the first within the Township, and will require agreements with the Tribe, it is likely the fees will be in the high mid to top of this range. Understanding that these engineering costs may be required prior to Whitewater Township receiving funding from the lending institution, efforts should be made to investigate grant opportunities. The results from Step IV will be expanded upon under Step V.

### 4. INITIAL PROJECT PHASE DESIGN

#### Costs: To be determined during PER Phase

Once funding sources are secured, the design and construction phase of the project can begin. Based on conversations, the initial phase of the project(s) will accommodate approximately 250 properties, but designed for expansion up to 1,200 properties.

Design, bidding, construction, and construction administration will need to follow instructions of all lending institutions, for which there may be multiple sources of funding.

Often terms are 20, 30, and even 40 years on loans. Construction, typically begins 12 to 24 months from notifying a lending institution of the intent to construct. Terms are best determined by evaluating the useful life of elements of the system, such that long term contracts are not sought for short term elements. Construction schedules vary significantly depending upon multiple factors, but become clearer once a better understanding of the scope is developed.

# PROJECT EXPERIENCE



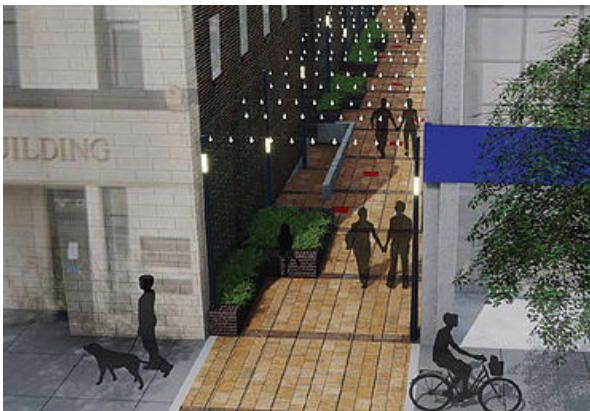
## Beaver Creek - Grayling Township Utilities Authority

C2AE completed a study and conceptual design of new municipal water and sewer services to the Four Mile Road corridor and completed funding applications for the work. The BCGTUA was awarded a \$3.2 million EDA grant and a \$4.1 million RD loan. The water system included water wells, distribution and transmission mains, and water storage. The wastewater treatment system included gravity sanitary sewers, pump stations, force mains, and a wastewater treatment plant.



## Village of Elk Rapids Ames Street Corridor Improvement Plan

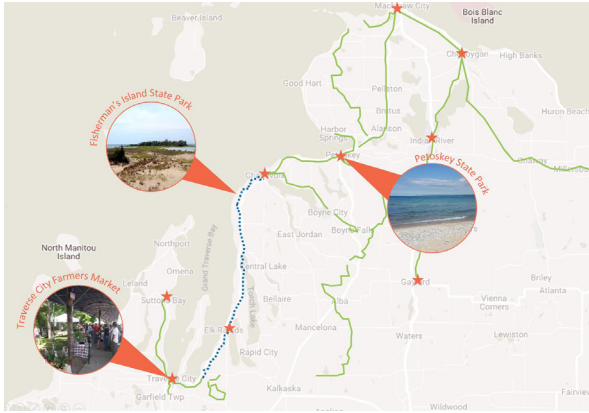
The Village of Elk Rapids' plan for corridor improvements is based on data and input from businesses and homeowners. It looks to improve safe, non-motorized amenities, ADA accessibility, street design, parking, lighting, trail connectivity, the US-31 underpass, and other infrastructure. Work is focused on bringing more businesses into the area. C2AE is leading the effort to gain stakeholder input and develop a comprehensive plan that will include possible funding sources.



## Kalkaska Downtown Development Authority Cedar Street Alley Planning

The Village of Kalkaska DDA's downtown alley concept plan for the redevelopment of an alley west of Cedar Street and between 3rd and 4th Streets aims to create a more inviting plan with better pedestrian accessibility. The plan involves an attractive rear entrance area for businesses to draw visitors directly from parking. Outdoor seating and exhibit spaces may be included.





## Networks Northwest Nakwema Trailway

The Traverse City to Charlevoix 26-mile extension of this trail will combine shared-use paths, shared roadways, bike lanes, and boardwalks to promote the physical and economic health of the three counties, seven townships, two cities, and the Village of Elk Rapids. New infrastructure will be owned and maintained by local government agencies. C2AE is performing initial feasibility and route selection services for each segment of trail, which is critical for funding analysis and coordination with Networks Northwest, TART Trails, Top of Michigan Trails Council, the MDNR, and MDOT.



## Tawas Utility Authority CWSRF Project Plan

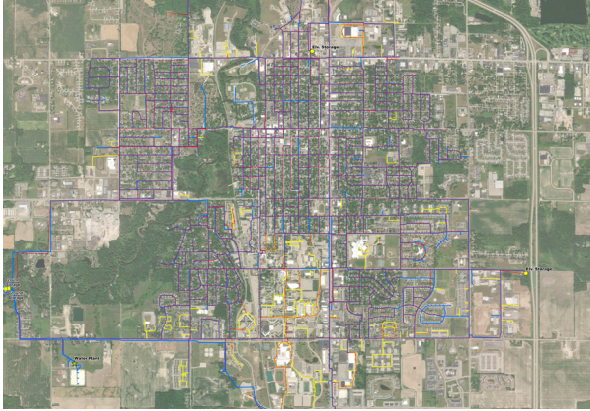
C2AE is in the process of evaluating the existing wastewater treatment facility and developing a CWSRF Project Plan to fund necessary capital improvements. This work will be consistent with the requirements of the State of Michigan Department of Environment, Great Lakes and Energy (EGLE) and the CWSRF funding program, and the Tawas Utility Authority's timeline for a 2021 application.



## City of Traverse City Wastewater Treatment Plant Digester #3

The rehabilitation of the wastewater treatment plant's third digester involved installing an Ovivo mixer, spot repairing the concrete, replacing the access hatch, reapplying a protective coating, and replacing the pipes and support.

# PROJECT EXPERIENCE



## City of Mt. Pleasant Water Reliability Study Update

This reliability study of the City of Mt. Pleasant's water treatment and distribution systems included creating system and hydraulic maps, inventorying assets, developing a capital improvement plan and an emergency response plan, and producing a report to meet EGLE regulatory requirements.



## Village of Tupper Lake Sanitary Sewer Improvements Study

A study of the infiltration and inflow into the New York Village of Tupper Lake's existing wastewater system determined what, if any, improvements the village needed to make. C2AE submitted a final report on the study's findings and recommended several alterations to the wastewater treatment facility and pump stations between 2019 and 2030.



## City of Owosso Wastewater Asset Management Plan

A three-year effort located and identified every asset at the City of Owosso's wastewater treatment plant. C2AE evaluated all asset conditions and approximated their remaining useful life determined. A 5-, 10-, and 20-year capital improvement plan was developed to address system needs and identify asset improvements. C2AE performed similar services for 27 other communities throughout Michigan between 2014 and 2020.



Wastewater Treatment Facility	SRF Facility Plan	RD PER	Multiple Projects	New Plant	Upgrade/Expansion	WWTP Asset Mgmt.	Feasibility Studies	Raw Sewage Pumping	Equalization	Induced Vortex Grit Rem.	Fine Screening	Primary Treatment	Bio. Secondary Treatment	Adv. Secondary Treat.	Chem. Phosphorus Removal	Disinfection (UV/Chem.)	Odor Control	Biosolids	Lagoon (Aerated/Facultative)	Spray Irrigation/Rapid Infil.	Structural/Architectural	Elec./Instrument/Backup	Facility Decommissioning
Beaver Creek/Grayling Twps UA		•		•			•							•					•	•	•	•	
Bessemer Area Sewer Auth.		•			•		•						•		•			•	•				•
Boyer City	•				•	•		•						•	•	•			•		•	•	
Charlotte			•		•		•	•	•	•		•	•	•	•	•	•	•			•	•	•
Cheboygan					•		•						•										
Clark Township		•	•		•		•	•											•			•	
Delta Township			•		•		•	•	•	•		•	•	•	•	•	•	•			•	•	•
Durand			•		•	•	•	•						•							•	•	•
Eaton Rapids	•				•			•	•	•		•			•	•		•			•	•	•
Escanaba	•				•	•	•			•	•	•	•	•	•	•		•			•	•	•
Gaylord					•	•		•	•	•				•				•					
Gladstone	•				•	•	•					•	•		•	•		•			•	•	
Gobebic Iron WW Auth.					•		•			•	•	•								•	•	•	•
Greenville					•		•						•		•	•					•	•	•
Hannahville Indian Community				•			•				•		•		•			•			•		•
Higgins Lake UA	•			•				•											•	•		•	
Holly (Village)			•		•		•	•	•	•		•	•	•	•	•	•	•			•	•	•
Ionia	•				•		•	•	•	•		•	•	•	•	•	•	•			•	•	•
Iron Mountain/Kingford					•							•	•										•
Jackson					•										•	•		•			•	•	•
Jonesville		•			•			•		•	•	•	•	•	•	•		•			•	•	•
Laingsburg			•		•	•	•	•											•				•
Mackinac Island					•							•	•		•							•	
Mackinaw City		•				•	•																
Manistique		•			•	•	•				•	•	•					•			•		•
Maple Rapids (Village)					•		•												•				
Mt. Pleasant					•							•				•							
Newberry (Village)	•				•	•	•					•	•		•			•			•		
Ogdensburg					•	•	•							•									
Onaway		•			•	•	•					•	•		•			•	•		•		
Otsego					•		•									•		•			•	•	
Owosso					•		•					•									•		
Perry					•		•								•				•			•	
Portland					•		•		•	•	•					•		•			•	•	
Pottsville					•		•								•				•			•	
Reed City	•		•		•		•	•	•			•		•	•			•			•	•	
Rogers City		•			•	•		•		•		•		•	•	•		•			•	•	
Romeo (Village)			•		•		•	•	•	•		•	•	•	•	•		•			•	•	•
Sault Ste. Marie	•				•	•	•			•	•	•	•					•				•	
St. Ignace	•	•			•	•	•				•	•	•		•	•		•	•			•	•
St. Johns			•		•		•	•	•	•	•	•	•	•				•			•	•	•

# TEAM ORGANIZATION



**Larry Fox, PE**  
*Project Manager*



**Mike Faeth, PE**  
*QA/QC*



**Jim Minster, PE**  
*Water/Wastewater  
Engineer*



**Matt Britton, PE**  
*Water/Wastewater  
Engineer*



**Jacob Haapapuro**  
*Water/Wastewater  
Engineer*



**Mandy Poynter, PE**  
*Civil Engineer*



**Kyle Smith**  
*Civil Engineer*



**Mike Jantz**  
*Funding*



**Randy Scott, PE**  
*Tribal Liaison*





## LARRY FOX, PE

Project Manager

*Larry has provided advising, design, and project management for a variety of projects. He has accumulated decades of expertise in road improvement, sanitary sewers, pump stations, force mains, utilities, wastewater systems and treatment plants, and construction inspection and administration both for MDOT and for municipalities throughout Michigan.*

## YEARS OF EXPERIENCE

41

## EDUCATION



Bachelor of Science, Civil  
Engineering: Michigan  
Technological University, 1980

## REGISTRATIONS

Professional Engineer: MI - 1984

## PROFESSIONAL AFFILIATIONS

National Society of Professional Engineers (NSPE)

Michigan Society of Professional Engineers (MSPE)

Water Environment Federation (WEF)

## HIGHLIGHTED EXPERIENCE

### Beaver Creek/Grayling Township Utility Authority New Water Treatment System

Project manager for the design and construction of a new municipal water system for the Four Mile Road corridor near Grayling Township. The water system includes water wells, distribution and transmission mains, and water storage.

### Beaver Creek/Grayling Township Utility Authority New Wastewater Service

Project manager for the design and construction of a new municipal sewer service to the Four Mile Road corridor, including gravity sanitary sewers, pump stations, force mains, and a wastewater treatment facility.

### Networks Northwest Traverse City to Charlevoix Trail

Project manager for the design of a new 46-mile trail to extend from Traverse City to Charlevoix along northern lower Michigan's scenic coastline. The combined shared-use paths, shared roadways, bike lanes, and boardwalks will be coordinated across multiple municipalities. This work is designed to attract more tourism to the region.

### City of Rogers City Sewer and Wastewater Treatment Facility Improvements

Project manager for upgrades including influent screening revisions, sludge pumping, conversion of pre-aeration tanks to anaerobic selectors, replacement of ultraviolet disinfection equipment, a new U.V. structure, renovation of anaerobic digesters, construction of a new liquid biosolids storage tank, miscellaneous structural repairs, building heat, light, and architectural upgrades and electrical and control upgrades. The project was used RD grant contingency funds.

### City of Rogers City Water and Sewer System Improvements

Design and construction administration services for upgrades to the City's water system, sanitary sewer system and wastewater treatment facilities including over 3 miles of new water mains, a new 400,000 gallon elevated water tower and improvements to the wastewater treatment facility. Funded by Community Development Block Grant and Rural Development.

### Little Traverse Bay Bands of Odawa Indians Mitchell Road Rehabilitation

Project manager for the design of two miles of roadway rehabilitation on Mitchell Road for LTBBOI in conjunction with and preparing bidding documents for the Emmet County Road Commission. Work included HMA base crushing/shaping, trenching, culverts, earth excavation, embankment, culvert replacements, MDNRE Permit application, aggregate base, concrete curb and gutter, intersection improvements, HMA paving, HMA curb, slope restoration, and pavement markings. Project funds were provided through the Bureau of Indian Affairs.

### City of West Branch Wastewater Treatment Facility Improvements

QA/QC for the design and construction for the SRF Project Plan preliminary treatment facility, the replacement of the facility's instrumentation and control system, and improvements to large areas of the sanitary sewer and manhole lining. Funded by Rural Development.



## MIKE FAETH, PE

QA/QC Engineer

*Mike has provided engineering and management for numerous municipal utility service projects of significant complexity and many phases. He works primarily on contracts with government bodies and other agencies specializing in water and wastewater projects.*

### YEARS OF EXPERIENCE

36

### EDUCATION



Bachelor of Science, Civil  
Engineering: Michigan State  
University, 1984

### REGISTRATIONS

Professional Engineer: MI - 1993, CA

### PROFESSIONAL AFFILIATIONS

Michigan Water Environment Association

Water Environment Federation

## HIGHLIGHTED EXPERIENCE

### City of Mt. Pleasant Water Reliability Study

Civil engineer for the ongoing reliability study of the City of Mt. Pleasant's water treatment and distribution systems. Work included creating figure/hydraulic maps, inventorying assets, developing a capital improvement plan and an emergency response plan, and producing a report.

### City of Escanaba State Revolving Fund Wastewater Treatment Plant Improvements

Civil engineer for the evaluation of alternatives and the recommendation of water system improvements. The report targeted lost water reduction through system management and water main replacement, and also included elevated tank and water treatment plant improvements.

### City of Mt. Pleasant Water Treatment Plant Improvements

Civil engineer for the ongoing addition of a sulfuric acid feed system at Mt. Pleasant's existing water treatment plant.

### Village of Brushton Wastewater System Improvements Phase I

Civil engineer for the study, design, and construction of a new sanitary sewer collection system and wastewater treatment plant to replace comprehensive individual septic systems. City of Escanaba State Revolving Fund Wastewater Treatment Plant Improvements Civil engineer for the evaluation of alternatives and the recommendation of water system improvements. The report targeted lost water reduction through system management and water main replacement, and also included elevated tank and water treatment plant improvements.

### Village of Parish Wastewater Treatment Plant Improvements

Civil engineer for the ongoing planning of improvements at the wastewater treatment plant, which currently has equipment nearing the end of its useful service life and has exceeded SPDES effluent limits. The team is in the process of coordinating with the Village of Parish to refine the scope of work, preparing a preliminary engineering report, coordinating environmental review in accordance with funding agency requirements, and seeking funding for the improvements.

### Village of Tupper Lake Collection/Wastewater Treatment System Improvements

Civil engineer for upgrades to 4.5 MGD wastewater treatment plant. Work included converting disinfection to sodium hypochlorite system, adding effluent dechlorination, and refurbishing clarifiers and clarifiers. The conveyance capacity of the collection system was increased, a parallel force main was installed, and the interceptor sewer discharging to the plant was upgraded.

### Genesee County District 3 Wastewater Treatment Plant Expansion\*

Resident engineer overseeing construction of an expansion that increased capacity from 7.2 to 11 MGD and added enhanced solids processing capacity and UV disinfection. The project included an addition of clarifiers, an aeration tank, sludge pumping, and solids process using a centrifuge. In addition, Mike acted as project engineer during the design for site work, grading, sediment control, storm sewer modifications, and site plan permitting.

\*Completed prior to joining C2AE





## JIM MINSTER, PE

Water/Wastewater Engineer

*Jim's design work includes numerous sanitary sewer, water, and storm water projects as well as highways and land developments. He has assisted dozens of Michigan communities in planning, funding, and implementing a variety of infrastructure systems.*

### YEARS OF EXPERIENCE

29

### EDUCATION



Bachelor of Science, Civil  
Engineering: Michigan  
Technological University, 1992  
*Summa cum laude*

### REGISTRATIONS

Professional Engineer: MI, CO

### PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE)

American Water Works Association  
(AWWA)

Michigan Water Environment Association  
(MWEA)

### HIGHLIGHTED EXPERIENCE

#### City of Owosso Wastewater Asset Management Plan

Civil engineer for a three-year effort to locate and identify every asset at the wastewater treatment plant. Asset conditions were evaluated and remaining useful life determined. A 5, 10, and 20 year capital improvement plan was developed to address system needs and identify asset improvements.

#### City of Mt. Pleasant Wastewater Treatment Plant Improvements

Lead designer for the installation of an ultraviolet disinfection system in the existing effluent channel along with the relocation of existing ferrous chloride tanks. This project followed a previous contract for the design of a new combined chemical containment system.

#### Village of Tupper Lake Collection/Wastewater Treatment System Improvements

Lead designer for upgrades to 4.5 MGD wastewater treatment plant. Work included converting disinfection to sodium hypochlorite system, adding effluent dechlorination, and refurbishing clarifiers and clarifiers. The conveyance capacity of the collection system was increased, a parallel force main was installed, and the interceptor sewer discharging to the plant was upgraded.

#### Beaver Creek/Grayling Township Utility Authority New Wastewater Service

Civil engineer for the design and construction of a new municipal sewer service to the Four Mile Road corridor, including gravity sanitary sewers, pump stations, force mains, and a wastewater treatment facility. City of Owosso 2019 Wastewater Treatment Plant Improvements Lead designer for improvements for the wastewater treatment plant, as identified in the City's capital improvement plan. The MDEQ provided a low-interest State Revolving Fund loan to assist the community.

#### City of Traverse City Wastewater Treatment Plant Improvements

Civil engineering services for the rehabilitation of the wastewater treatment plant's third digester, which involved installing an Ovivo mixer, spot repairing the concrete, replacing the access hatch, reapplying a protective coating, and replacing the pipes and support.

#### Village of Holly Wastewater Treatment Plant Grit Tank Improvements

Project manager for improvements to the wastewater treatment plant, including a new grit tank, two new containment rooms, mechanical and electrical system upgrades, and digester evaluations and improvements.

#### Bath Township Wastewater Asset Management Plan

Project manager for preparing an Asset Management Plan for the Township's wastewater collection system consistent with MDEQ requirements and expectations. City of Portland Wastewater Treatment Plant Upgrades Project manager for the complete wastewater treatment plant upgrades including influent pumping, headworks screening, conversion of existing tankage to equalization basin, aeration basin upgrades, clarifier upgrades, sludge handling improvements and mechanical equipment improvements.



## MATT BRITTON, PE, ENV SP

### Water/Wastewater Engineer

*Matt is passionate about using his training and talents as a civil engineer to improve people's lives and better the world we live in. He is experienced in process engineering design and specification, hydraulic and process modeling, engineering economics, strategic planning, and more.*

### YEARS OF EXPERIENCE

6

### EDUCATION

PU

Master of Science, Environmental Engineering: Purdue University, 2015

PU

Bachelor of Science, Environmental and Ecological Engineering: Purdue University, 2014

### REGISTRATIONS

Professional Engineer: MI

### PROFESSIONAL AFFILIATIONS

American Water Works Association (AWWA)

Michigan Water Environment Association (MWEA)

Envision Sustainability Professional 2019

## HIGHLIGHTED EXPERIENCE

### City of Traverse City Wastewater Treatment Plant Improvements

Civil engineer for the rehabilitation of the wastewater treatment plant's third digester, which involved installing an Ovivo mixer, spot repairing the concrete, replacing the access hatch, reapplying a protective coating, and replacing the pipes and support.

### City of Mt. Pleasant Wastewater Treatment Plant CDBG Improvements

Civil engineer for the development of construction plans, specifications, and construction cost estimates in preparation for an application for Community Development Block Grant funding, which would be used for improvements at the deteriorating plant.

### City of Gladstone Infiltration and Inflow Study

Civil engineer for a study to define the nature and quantity of infiltration and inflow reaching the wastewater treatment plant. The assessment involved multiple meetings to coordinate progress with the city, sewer televising, assessment of collected and existing data, and final recommendations for cost effective actions with a written report.

### City of Owosso 2019 Wastewater Treatment Plant Improvements

Civil engineer for improvements for the wastewater treatment plant, as identified in the city's capital improvement plan. The MDEQ provided a low-interest State Revolving Fund loan to assist the community.

### Town of Louisville Water Treatment Plant Improvements

Civil engineer for the ongoing replacement or improvement of five existing diatomaceous earth filters for 500,000 GPF water treatment facility with SCADA/controls upgrade, pump/VFD upgrades, and miscellaneous piping retrofit.

### Village of Parish Wastewater Treatment Plant Improvements

Civil engineer for planning improvements at the wastewater treatment plant, which currently has equipment nearing the end of its useful service life and has exceeded SPDES effluent limits. The team is in the process of coordinating with the Village of Parish to refine the scope of work, preparing a preliminary engineering report, coordinating environmental review in accordance with funding agency requirements, and seeking funding for the improvements.

### Village of Tupper Lake Little Simon Pond Water Treatment Plan Evaluation and Improvements

Civil engineer for the initial evaluation of the existing Little Simon Pond water treatment plant to identify necessary improvements and treatment options to reduce DBPs as well as the completion of an environmental review of identified improvements in conformance with SEQR and NEPA requirements.

### Village of Tupper Lake Collection/Wastewater Treatment System Improvements

Civil engineer for upgrades to 4.5 MGD wastewater treatment plant. Work included converting disinfection to sodium hypochlorite system, adding effluent dechlorination, and refurbishing clarifiers and clarifiers. The conveyance capacity of the collection system was increased, a parallel force main was installed, and the interceptor sewer discharging to the plant was upgraded.





## JACOB HAAPAPURO

Water/Wastewater Engineer

*Jacob has spent his time at C2AE working with the firm's most experienced and skilled engineers and bringing the insight learned into his municipal projects. His high concentration of work in and around Michigan's beautiful lake towns makes him a great fit for this project.*

## YEARS OF EXPERIENCE

4

## EDUCATION



Bachelor of Science, Civil  
Engineering: Michigan  
Technological University, 2017

## HIGHLIGHTED EXPERIENCE

### Beaver Creek/Grayling Township Utility Authority New Water Treatment System

Civil engineering services for the design and construction of a new municipal water system for the Four Mile Road corridor near Grayling Township. The water system includes water wells, distribution and transmission mains, and water storage.

### Beaver Creek/Grayling Township Utility Authority New Wastewater Service

Civil engineering services for the design and construction of a new municipal sewer service to the Four Mile Road corridor, including gravity sanitary sewers, pump stations, force mains, and a wastewater treatment facility.

### City of Escanaba State Revolving Fund Wastewater Treatment Plant Improvements

Civil engineering services for the evaluation of alternatives and the recommendation of water system improvements. The report targeted lost water reduction through system management and water main replacement, and also included elevated tank and water treatment plant improvements.

### City of Gladstone Wastewater and Stormwater Asset Management Plans

Civil engineering services for the collection of wastewater and stormwater asset data and the development of asset management plans outlining maintenance, improvement, removal, or replacement of assets over the course of several years using SAW grant funding.

### City of Onaway Wastewater and Stormwater Asset Management Plans

Civil engineering services for the collection of wastewater and stormwater asset data and the development of asset management plans outlining maintenance, improvement, removal, or replacement of assets over the course of several years.

### City of Boyne City Storm Water/Wastewater Asset Management Plan

Civil engineering services for the preparation of an Asset Management Plan for the city's wastewater and stormwater systems consistent with MDEQ requirements and expectations. The plan recommended utility system improvements for the next several years based on information determined during data collection.

### City of Bessemer Water and Wastewater System Replacements

Civil engineering services for the replacement of water and wastewater piping beneath US-2 concurrent with an MDOT roadway improvements project. The work was supported in part with USDA-RD funding.

### Town of Sterling Water District #2

Civil engineering services for the design of a new water district, which will serve approximately 120 housing units. An evaluation of the town's infrastructure and resources recommended the installation of 51,000 LF of 8-12 in. distribution water main to transport water purchased from the Village of Fair Haven. New fire hydrants and gate valves will be installed along the water main approximately 600 and 800 feet apart respectively. In addition, the Town of Sterling will construct a new well and a water tank with the capacity of 415,000 gallons.



## MANDY POYNTER, PE

Civil Engineer

*Mandy provides and manages civil design for a range of projects, including city streets and streetscapes, county roads, MDOT Local Agency Projects, water distribution systems, wastewater collection systems, storm sewer and storm water retention systems, and site developments. She also performs construction administration.*

### YEARS OF EXPERIENCE

21

### EDUCATION

**UM** Bachelor of Science, Civil Engineering, University of Michigan, 2000

### REGISTRATIONS

Professional Engineer: MI

### HIGHLIGHTED EXPERIENCE

#### Beaver Creek/Grayling Township Utility Authority New Wastewater Service

Civil engineer for the design and construction of a new municipal sewer service to the Four Mile Road corridor, including gravity sanitary sewers, pump stations, force mains, and a wastewater treatment facility.

#### Beaver Creek/Grayling Township Utility Authority New Water Treatment System

Civil engineer for the design and construction of a new municipal water system for the Four Mile Road corridor near Grayling Township. The water system includes water wells, distribution and transmission mains, and water storage.

#### Networks Northwest Traverse City to Charlevoix Trail

Civil engineer for the design of a new 46-mile trail to extend from Traverse City to Charlevoix along northern lower Michigan's scenic coastline. The combined shared-use paths, shared roadways, bike lanes, and boardwalks will be coordinated across multiple municipalities. This work is designed to attract more tourism to the region.

#### City of West Branch Infrastructure Improvements

Project manager for 3,600 LF of street reconstruction in the City of West Branch, including Second, Third, Fifth, and Eighth Streets, using Community Development Block Grant funding. Street, curb and gutter, and concrete sidewalk were replaced. New water mains and services, new directional drilled water main beneath Ogemaw Creek, new storm sewer, select areas of sanitary sewer replacement were also included in the work. Permits were obtained via MDEQ, MDNR, and MDOT.

#### Village of Quincy Water Main Replacement

Civil engineer for the replacement of approximately 3,900 ft. of water main on East Jefferson, Fulton, Colfax, and Orange Streets using CDBG ICE funding. Sections of each road were reconstructed along with the water main replacements.

#### City of Rogers City Utility Improvements

Project manager for upgrades to the water system, sanitary sewer system and wastewater treatment facilities including over 3 miles of new water mains, a new 400,000 gallon elevated water tower and improvements to the wastewater treatment facility.

#### Little Traverse Bay Bands of Odawa Indians Paradise Lake Pilot Boat Washing Station

Civil engineer for the design and construction of a boat washing station at the MDNR Resources Access Site on Paradise Lake in an effort to prevent the spread of invasive species. The design included the site layout of the entrance and exit drives, vehicle stacking lanes, boat washing station configuration, and wash water infiltration basins as well as building, signage and equipment selections, and water well sizing. C2AE assisted with permit applications and coordination with the local health department, Emmet County Road Commission, and MDEQ. The team closely monitored the schedule and budget to ensure compliance with the GLRI grant.



## KYLE SMITH

Civil Engineer

*Kyle provides civil and transportation design utilizing AutoCAD software for a variety of municipal roadway and utility projects.*

### YEARS OF EXPERIENCE

3

### EDUCATION



Bachelor of Science Construction  
Engineering: Western Michigan  
University, 2017

### HIGHLIGHTED EXPERIENCE

#### Beaver Creek/Grayling Township Utility Authority New Water Treatment System

Civil engineering services for the design and construction of a new municipal water system for the Four Mile Road corridor near Grayling Township. The water system includes water wells, distribution and transmission mains, and water storage.

#### Beaver Creek/Grayling Township Utility Authority New Wastewater Service

Civil engineering services for the design and construction of a new municipal sewer service to the Four Mile Road corridor, including gravity sanitary sewers, pump stations, force mains, and a wastewater treatment facility.

#### City of Bessemer Water and Wastewater System Replacements

Civil engineering services for the replacement of water and wastewater piping beneath US-2 concurrent with an MDOT roadway improvements project. The work was supported in part with USDA-RD funding.

#### Village of Mackinaw City Wastewater and Stormwater Asset Management Plans

Civil engineering services for the development of a GIS base mapping database and GPS survey of the assets and manhole inventories. The Mackinaw City system includes approximately 200 sanitary manholes and 380 storm manholes and catch basins. Televising was completed for approximately 52,000 feet of sanitary sewer and 30,000 feet of storm sewer. The wastewater plant is a 0.8 mgd aerated lagoon system with continuous discharge to Lake Huron. The treatment system also has chemical phosphorus removal, clarification and chlorination/dechlorination.

#### City of Petoskey Wastewater/Storm Water Asset Management Plan

Civil engineering services for the preparation of an asset management plan for the city's wastewater systems consistent with MDEQ requirements and expectations. The plan recommended utility system improvements for the next several years based on information determined during data collection.

#### City of Cadillac New Municipal Well Field Phase I and II

Civil engineering services for DWSRF funding applications and the design and construction of two new municipal well fields, including six new water wells with a total of 6,000 gpm capacity, new well houses, service buildings, chemical treatment systems, and SCADA/control upgrades. Phase II also includes a new water department headquarters and garage complex. Funding included DWSRF loans and Green Project Reserve principal forgiveness.

#### Otsego County Iron Belle Trail New Segment

Civil engineering services for a 13-mile trail through Otsego County. The trail connects to the existing North Central State Trail. This project was designed within the right of way of an active rail corridor. Funding comes from a MDOT TAP grant, two MNRTF grants, a RTP grant, an IBT grant, and local share contributions by two townships and the County.





## MICHAEL JANTZ

### *Funding Assistance*

*Mike leads efforts in business development and marketing to C2AE's governmental clients and prospects. Much of his daily work load is focused on assisting C2AE clients in capital project funding including federal, state, local, non-profit, philanthropic, and public-private partnerships.*

### YEARS OF EXPERIENCE

33

### EDUCATION



Bachelor of Science Civil  
Engineer: Michigan Technological  
University, 1987

### HIGHLIGHTED EXPERIENCE

Mike brings a unique 33 years' experience, divided evenly into design, construction, and environmental cleanup and programming. He was a licensed professional engineer for 20 years, a Series 6 and 7 licensed financial planner under the Financial Industry Regulatory Authority, and a licensed residential builder. Mike has also taught asset management programming, green building, and at economic development seminars. In addition, he has been involved in benefit cost analyses for clients.

This diverse experience has prepared him well as both a communicator and facilitator for governmental clients in their capital funding efforts. He is adept at articulating complex matters with understandable messaging. The most recent example of this strength is the May 15, 2020 MITTIN BUILD Grant application for the Village of Kalkaska. During an ongoing pandemic, Mike lead both C2AE staff and municipal stakeholders in the preparation of a \$8.72 million planning grant. Not only did the application include the MITTIN project narrative, but also five specific work plans that encompass MDOT freight rail, MDOT passenger rail, MDOT road, MDOT bus transportation, MDOT non-motorized trail, and Michigan Great Lakes shipping.

Most impressive during the stay at home executive order was Mike's ability to secure numerous letters of support for the BUILD Grant application from the likes of Federal Senator Gary Peters, Federal Representative Jack Bergman, State Senators Ed McBroom and Wayne Schmidt, State Speaker of the House Lee Chatfield, MDOT Director Paul Ajegba, PE, MEDC CEO Mark Burton, and numerous local elected officials, local and regional economic development organizations, and chambers of commerce.

#### [Village of Kalkaska BUILD Grant Application Preparation](#)

Lead grant application preparer for the BUILD grant application for Village of Kalkaska's Michigan Intermodal Transportation and Tourism Infrastructure Network (MITTIN) Plan. Assisted the Village in submitting an application for \$630 million of capital investment and drive long-term economic growth in northern Michigan and the Upper Peninsula.

#### [Village of Quincy TIGER Grant Application Preparation](#)

Grant application preparer for the TIGER grant application for the Village of Quincy's new trail system from Coldwater to Jonesville.



## RANDY SCOTT, PE

*Tribal Liaison*

*Randy is an accomplished senior professional with a background in providing project management and professional engineering services. Randy has served as construction, design, or public municipal engineer for numerous civil and environmental projects. He performs technical design work and quality checks, monitors ISO Quality Programs, and is trained in construction specification writing and construction contract language interpretation.*

## YEARS OF EXPERIENCE

43

## EDUCATION

**UM** Bachelor of Science in  
Environmental Science  
Engineering: University of  
Michigan

## REGISTRATIONS

Professional Engineer: MI, WI

## PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE)

American Water Works Association  
(AWWA)

Michigan Security Committee, AWWA  
Delta County Planning Commission

*\*Completed prior to joining C2AE*

## HIGHLIGHTED EXPERIENCE

### [Hannahville Indian Community Wastewater Improvements\\*](#)

Civil engineer for wastewater collection and treatment improvements funded USDA RD.

### [City of Sault Ste. Marie Combined Sewer Overflow Control Program Phase C-3](#)

Civil engineer for a multi-phase utility and roads replacement project, which included approximately 12,000 ft. of 8-15 in. sanitary sewer and 13,000 ft. of 8-12 in. water main. Work was SRF and DWRP funded.

### [City of Sault Ste. Marie Combined Sewer Overflow Control Program Phases C-1 and C-2](#)

Civil engineer for the design and construction of an \$11.9 million utility and roads replacement project, which included approximately 20,000 feet of 8"-15" sanitary sewer and 18,000 feet of 8"-12" water main, SRF funded.

### [Gogebic Range Water Authority Ironwood Township Water Supply](#)

Civil engineer for the design and construction engineering services for a water transmission main.

### [Gogebic Range Water Authority Water Main Installation](#)

Civil engineer for approximately 12,700 feet of 8" water main was installed primarily in the Ironwood Township area of the GRWA system plus the Indianhead pump station was completely rebuilt (serves the entire Indianhead Ski Area including lodges, recreational buildings and a housing area).

### [City of St. Ignace Storm Water and Wastewater Asset Management Plans](#)

QA/QC for preparing MDEQ approvable wastewater and storm water Asset Management Plans and Capital Improvement Plans.

### [City of Bessemer Storm Water and Wastewater Asset Management Plans](#)

QA/QC for preparing MDEQ approvable wastewater and storm water Asset Management Plans and Capital Improvement Plans.

### [City of Sault Ste. Marie Storm Water and Wastewater Asset Management Plans](#)

QA/QC for preparing MDEQ approvable wastewater and storm water Asset Management Plans and Capital Improvement Plans.

### [Bessemer Area Sewer Authority Wastewater Asset Management Plan](#)

QA/QC for preparing MDEQ approvable Asset Management Plan and Capital Improvement Plan.

### [City of Sault Ste. Marie Streetscape Improvements](#)

Funding assistance for streetscape improvements in conjunction with the CSO elimination projects on Ashmun, Portage, and Water Streets. Monies acquired from CDBG, State Revolving fund and the DDA.

### [City of Manistique Streetscape Improvements](#)

Funding assistance for streetscape improvements in conjunction with utility improvements on Cedar, Walnut, and Oak Streets. Monies were locally bonded.

## REFERENCES

### Cash Cook

DDA Director  
Village of Kalkaska  
231.258.9191

### Bryan Gruesbeck

Village Manager  
Village of Elk Rapids  
231.264.9274

### Brent Barringer

Co-Chair  
Tawas Utilities Authority  
989.362.6161

### Michael Cain

City Manager  
City of Boyne City  
231.528.0377

## FEE

### PHASE

Project Evaluation and Feasibility Study  
Quality Based Selection/As-Needed Service Contract  
Preliminary Engineering Report (PER)  
Initial Project Phase Design

\$20,500  
No cost  
Will be determined during Project Evaluation Phase  
Will be determined during PER Phase







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