



REQUEST FOR PROPOSALS

FACILITY ASSESSMENT, FEASIBILITY STUDY, AND LONG-TERM FACILITIES PLANNING FOR THE WASTEWATER TREATMENT FACILITY

February 7, 2025



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SCHAUMBURG, IL 60195
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CHASTAINENGINEERS.COM



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02/07/2025

Julie Schmelzer
Village Administrator
2383 Maple Drive
Sister Bay, WI 54234

LAND DEVELOPMENT
MUNICIPAL ENGINEERING
SURVEYING
STRUCTURAL ENGINEERING
TRANSPORTATION ENGINEERING
COMMUNITY PLANNING & FUNDING

RE: RFP FACILITY ASSESSMENT, FEASIBILITY STUDY, AND LONG-TERM FACILITIES PLANNING FOR THE WASTEWATER TREATMENT FACILITY SISTER BAY, WISCONSIN

Dear Julie-

Chastain & Associates is committed to developing a cost-effective long-term plan for the operations, resiliency, and sustainability of Sister Bay's Wastewater Treatment Facility. This will result in a Capital Improvement Plan (CIP) for the facility, which Chastain will develop by leading the following efforts:

- **Assessment of current conditions and capital needs over a 20-year planning period.**
- **Detailed inspection of existing infrastructure.**
- **Analysis of current treatment efficiency and compliance.**
- **Evaluation of operational and historical data.**

With the information collected, we will be able to develop a comprehensive and implementable CIP that includes recommendations for improvements to the facility over the next 20 years and ensures sustainable and cost-effective processes. Additionally, the CIP will be paired with an implementation plan that will guide the Village's budgeting and planning for projects which includes cost estimates, phased plans, and funding strategies developed by our in-house engineering and funding experts.

Throughout the process we will prioritize clear communication with the Village, ensuring smooth collaboration. Our project timeline includes the four (4) on-site meetings requested by the Village and deliverable dates ensuring that the CIP is completed within 2 months from contract signing. Our proposed team has the capacity and availability to successfully see this project through.

Sincerely,



F. Thomas Mathews, P.E.
Project Manager, Chastain & Associates, LLC

Chastain & Associates LLC is a company that offers a wide range of professional services, including land surveying, urban and land planning and development, civil engineering, water/wastewater engineering, construction, and structural engineering. Our team comprises expert surveyors, civil engineers, construction professionals, structural engineers, planners, grant writers, and administrative staff dedicated to providing high-quality solutions that meet the needs of our clients. We take pride in empowering our clients with informed engineering solutions that align with our environmental commitment and sustainable infrastructure values. Our portfolio features projects of all sizes, from simple lot pinning to large-scale design and construction endeavors.

With 70 years of experience, we have been dedicated to enhancing community infrastructure by designing better highways and roadways, creating structures that connect communities, surveying land, and building futures through planning and development. *We bring communities together where they live, work, and play.*

HOW WE WORK

Integrate Client as part of the Design Team

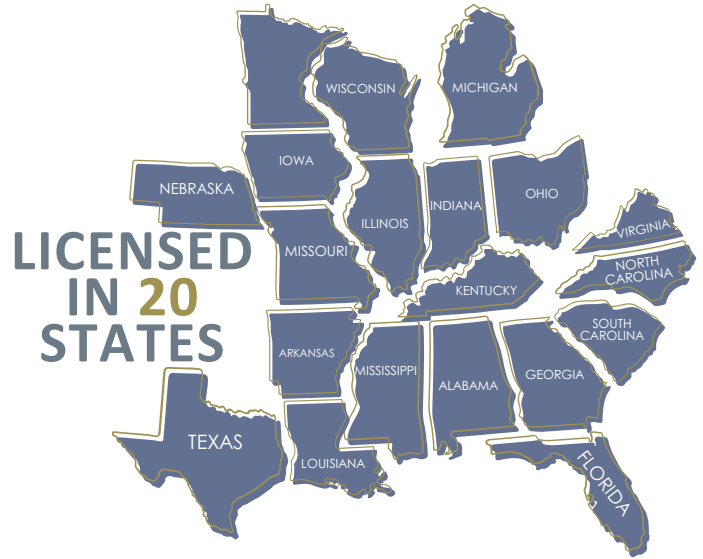


OUR CORE VALUES

- AUTHENTICITY**
We Do What We Say.
- EXCELLENCE**
We Do What It Takes.
- INTEGRITY**
We Operate With Integrity.
- WILLINGNESS**
We Have An Outward Mindset.

- MUNICIPAL ENGINEERING
- TRANSPORTATION ENGINEERING
- STRUCTURAL ENGINEERING
- CONSTRUCTION ENGINEERING
- LAND DEVELOPMENT
- SURVEYING
- LAND ACQUISITION
- COMMUNITY PLANNING & FUNDING
- GRANT WRITING

For a full listing of our services, please visit www.chastainengineers.com/our-services



12 ACEC

AMERICAN COUNCIL OF ENGINEERING COMPANIES
of Illinois

ENGINEERING EXCELLENCE AWARDS
EMINENT CONCEPTOR AWARD HONOR AWARD
MERIT AWARDS FOR SPECIAL PROJECTS
CONSTRUCTION ENGINEERING & INSPECTION

\$40M OF GRANTS & LOW-INTEREST LOANS (IN THE LAST 5 YEARS)

Secured to offset public infrastructure costs

OVER 70 YEARS OF ENGINEERING EXCELLENCE

Decatur, IL | Schaumburg, IL | Rockford, IL
Paris, IL Lafayette, IN | Metropolis, IL

1.833.4Chastain | chastainengineers.com





CHASTAIN

organizational chart



CHASTAIN



Project Manager
F. Thomas Mathews, P.E.

CHASTAIN



Professional Engineer
Tom Okite, P.E., CFM

CHASTAIN
SUPPORT
STAFF

— *Client Liaison & Urban Planner*
Sophie Parr

— *Grants & Funding Manager*
Stephanie Brown, AICP



PROJECT

staff



Thomas Mathews, P.E.

Project Manager

PROJECT EXPERIENCE

About

Licensed Professional Engineer with over 21 years of expertise in planning, analyzing, designing, permitting, and managing the construction of civil infrastructure projects. These projects include wastewater treatment, water treatment, conveyance systems, stormwater treatment systems, and environmental compliance. He has worked with municipal and industrial clients to address various challenges, including assessments and evaluations, hydraulic analysis, treatment process analysis, process improvement, and detailed design. Mr. Mathews joined our firm in 2023.

Education

1981| Rutgers University
Master of Business Administration
1974| Purdue University
B.S. in Civil/Environmental Engineering

Professional Registration

Professional Engineer, Illinois, 062-54862
Professional Engineer, Indiana, PE60020701
Professional Engineer, Wisconsin, #44040

PROJECT MANAGER:

VILLAGE OF ST. NAZIANZ, WI

Prepared a toxicology study on the WWTP effluent that resolved a 10-year non-compliance issue with phosphorus.

VILLAGE OF EASTMAN, WI

Design of process improvements to convert the 1 MGD facility into an enhanced biological nutrient removal facility. Applied for and secured financing for project.

CITY OF LOCKPORT, IL

Project Manager responsible for the project to upgrade the city's WWTP. Responsible for the plans and specifications and construction oversight. The project included grit removal facilities, influent pumps, aeration facilities, aerobic digestion, biosolids thickening facilities, biosolids dewatering facilities, and biosolids storage facilities. The WWTP was expanded from 3.4 mgd to 5.0 mgd.

VILLAGE OF WATSEKA, IL

Project Manager for an excess flow treatment facility at a wastewater treatment plant. Responsible for the plans and specifications. The facility was designed to remediate numerous sanitary sewer overflow locations within the Village.

FACILITY PLANS

Village of Mindoro, WI*
Village of Unity, WI*
Village of Waumandee, WI*
Village of Norwalk, WI*
Village of Ettrick, WI*
Village of Cazenovia, WI*

SANITARY SEWER DESIGN

City of Paris, IL - Sanitary Sewer Plant Upgrade Design
Village of Westfield - Sanitary Sewer Collection & Treatment Design

WATER TREATMENT PLANT DESIGN

Village of Argenta - Water Treatment Plant Design (IEPA Loan)
Village of Forsyth - Water Treatment Design
Sargent & Lundy - Industrial Water & Wastewater Treatment Facilities Design*
Digester Renovation, Water/Wastewater Treatment Plan*
Clear Creek Systems, Rockford, IL *
Village of Frankfort, IL - Wastewater Treatment Improvement Project*

*experience previous to joining Chastain



Tom Okite | P.E., CFM

Professional Engineer

About

Tom is a licensed Professional Engineer with a broad background in technical design, project engineering, and project management. He is experienced in municipal, commercial, and residential civil engineering projects. Mr. Okite specializes in stormwater management and erosion control, traffic and transportation engineering, water distribution systems, lift and pump stations, construction observation, and residential & commercial subdivision site planning and design. He is a Certified Floodplain Manager. Mr. Okite is a Project Manager in our Rockford office and has been with Chastain since 2020.

Education

2006 | Northern Illinois University
Masters in Business Administration

1998 | University of Wisconsin - Madison
Bachelor of Science, Civil Engineering

Professional Registrations

Illinois Professional Engineer; 2007, 062-059584

Iowa Professional Engineer; 2010, 19898

Wisconsin Professional Engineer; 2021, 48310-6

Continuing Education

IDOT Erosion and Sediment Control Module III:
Inspection

IDOT STTP-S33 Soils,
#3472065

Software Proficiencies

CMMS

e-Builder

Professional Organizations

Illinois Society of Professional Engineers

Wisconsin Society of Professional Engineers

Illinois Association for Floodplain & Stormwater
Management

PROJECT ENGINEER:

CITY OF ROCKFORD

ARDEN COURT DRAINAGE POND, ROCKFORD, ILLINOIS

Chastain provided engineering services related to the urban flooding analysis at the Chelsea Avenue/Arden Court Drainage Pond in the City. The Arden Court Pond has a documented history of flooding problems when the pond overtops it overflows to several streets and related properties. Chastain analyzed the drainage pond to understand further the source and scope of the urban flooding issue affecting this area. The study utilized Bentley's CivilStorm and PonPack software to model the existing conditions and to perform the alternative analysis. The scope of service included a written drainage study report with exhibits, concept plans of the proposed improvements with possible public outreach. The engineer's estimate of cost was \$1.5M. The project was completed in 2020.

RIVERCREST ENGINEERING, INC.

CALVERT CITY WASTE WATER TREATMENT PLANT

Chastain provided survey and engineering services for an upgrade to its existing sewer treatment plant (STP). The STP is an aerated lagoon system that discharges to a cascade aerator that then discharges to the Ohio River. Care had to be taken to balance the necessary effluent pumping rate vs. the river stage to ensure that there are no issues during flood stage. The project replaced the existing off-site influent pumping station and moved it to a location on the STP site, requiring the relocation and extension of collection system sewers to the new pump station site. The project also included work on the existing effluent pump station and force main. The scope of services included traditional topographic surveying; drone surveying; site engineering for new structure locations and access; civil/mechanical engineering for replacement pumps for the existing effluent pump station; structural engineering for the new influent pump station; floodway engineering for a Letter of Map Revision based on Fill (both CLOM-R and LOMR-F); electrical design; and control systems design. Chastain also performed bidding analysis services, shop drawing review, construction staking and limited construction observation. Chastain was a subconsultant to Rivercrest Engineering. This project was funded through a loan from the Kentucky Infrastructure Authority that was secured by Calvert City. Rivercrest Engineering managed the KIA loan administration and permitting.

CITY OF MARSHALL, IEPA WELL DESIGN

Planning services to determine scope of work for Well Design for IEPA Loan.

VILLAGE OF KINCAID, IEPA WATERMAIN IMPROVEMENTS

Design and construction of water main improvements per Project Plan developed under project 7964.00 with funding through the IEPA State Revolving Loan Program.

VILLAGE OF LEE, IEPA WATER IMPROVEMENTS

Engineering services for preparation of loan application and design of water system improvements for a new well, relocation of an existing water tower, and watermain within the Village of Lee, per the Project Plan approved by the IEPA on May 20, 2020.

VILLAGE OF SHABBONA

Phase II design plans for the replacement of 1200 feet of water main, as well as Phase III construction observation services.



PROJECT *approach*

UNDERSTANDING

The Village of Sister Bay's Wastewater Treatment Plant originally opened in 1990 and was recently updated in 2021. Despite the updates, the facility still faces challenges with sludge processing and disposal, specifically because of its geographic location and the geological composition of Door County. Fortunately, Sister Bay has been able to utilize other treatment facilities in the area to assist with sludge processing and disposal but with the growth of the county outpacing its infrastructure in many of the communities, it is critical to begin pursuing more sustainable and effective methods of processing the biosolids.

The Village wants to develop a Capital Improvement Plan (CIP) that will address facility shortcomings, identify infrastructure that has or will reach its useful life soon, and develop solutions that will address the biosolids processing and disposal program. It is clear from the RFP that the Village wants to determine new methods to implement to assist with the current challenges facing sludge processing and disposal. The CIP will help the Village prioritize the necessary improvements to the facility and plan for future growth, all with a focus on long-term operations, resiliency, sustainability, and cost-effectiveness.

As we develop the CIP we will prioritize the following:

- *Categorization of proposed projects based on urgency (immediate needs, near-term, and long-term)*
- *Consideration of environmental impacts and regulatory compliance*
- *Assessment of cost-effectiveness and potential return on investment*
- *Recommendations specific to selected projects*

APPROACH

The key elements of the Wastewater Treatment Plant Capital Improvement Plan project will include:

- *Assessment of current conditions, near-term requirements, and capital needs over a 20-year planning period.*
- *Detailed inspection of existing infrastructure, including all pumps, tanks, pipes, equipment, and electrical systems to identify potential failure mechanisms and areas for improvement.*
- *Analysis of current treatment efficiency and compliance with discharge permits.*
- *Evaluation of operational data, including flow rates, pollutant levels, and energy consumption. Review of the historical and projected 20-year flows, influent loadings, and solids production values as well as the volume of hauled-in waste and loadings.*
- *Recommendations for alternatives to existing biosolids processing and disposal program.*

The final CIP will result in a comprehensive analysis of the facility and a path forward for the village to ensure resiliency, sustainability and cost-effectiveness. The CIP will provide recommendations for improvements to the facility as well as funding options and an implementation plan. These three areas are expanded on below:

ANALYSIS & RECOMMENDATIONS

Chastain will complete review and analysis of the following areas and prepare recommendations for improvements:

1. **Preliminary Treatment**
 - a. *Inspection of influent fine screen*
 - b. *Inspection of grit removal system*
2. **Secondary Treatment**
 - a. *Propose new high efficiency aeration equipment for increased efficiency*
 - b. *Inspection of secondary clarifiers*
 - c. *Review of cost-effective IFAS technology to increase flow capacity and reduce biosolids production at nominal cost*
 - d. *Review of biological phosphorus removal to reduce the treatment cost and lessen the production of biosolids*
3. **Tertiary Treatment**
 - a. *Review of installation of tertiary filtration systems for enhanced solids removal and improved disinfection*
 - b. *Inspection of recently installed disinfection equipment*
4. **Biosolids handling**
 - a. *Inspection of sludge pumps*
 - b. *Upgrading the sludge digester aeration system for increased efficiency*
 - c. *Review of the implementation of dewatering technologies to reduce the sludge transportation cost*
 - d. *Preparation of three (3) alternative sludge disposal methods and evaluate each method*
5. **Infrastructure Improvements**
 - a. *Repairing or replacing aging pipes and conduits*
 - b. *Upgrading electrical systems*
 - c. *Improving site drainage and landscaping*

FUNDING

In addition to the facility analysis and recommendations, we will prepare strategies to help fund the recommendations and projects. This will include identifying potential funding sources like low interest loans, grants, bonds, and utility rate adjustments. We will develop a financial plan to support project implementation over the planned timeframe.

IMPLEMENTATION PLAN

The CIP will provide the village with detailed project timelines and milestones as well as a contingency plan for unforeseen issues.

COMMUNITY ENGAGEMENT

Involving stakeholders to understand concerns and priorities as necessary. This includes plans for business expansion and growth, new housing developments, and other growth factors which could directly impact the needs of the treatment facility.

ENVIRONMENTAL IMPACT ANALYSIS

Assessing potential environmental effects of proposed projects.

REGULATORY COMPLIANCE

Ensuring selected projects meet all applicable discharge standards.

OPERATIONAL EFFICIENCY

Prioritizing projects that enhance facility performance and reduce operating costs.

PROJECT MEETINGS

We will prepare for and attend four (4) on-site meetings:

1. Project initiation and site visit/condition assessment
2. CIP and alternatives review meeting
3. Draft report review
4. Presentation to the Sister Bay Utility committee

GRANT FUNDING

As a full-service infrastructure consulting firm, Chastain provides grant writing assistance to clients to help ensure funding is obtained for projects. We can assist with the preparation of exhibits and resources as well as complete project narratives and write-ups to help secure funding for everything from developing the CIP to pursuing the recommended projects. We have a skilled team of grant writers and in the last five years our company has helped secure over \$40 million in grants and low-interest loans for our client communities. Our goal is to help our clients get their projects done, from start to finish.



REFERENCES *and experience*

VILLAGE OF ST. NAZIANZ, WI**PROJECT MANAGER: F. Thomas Mathews, P.E.**

Prepared a toxicology study on the WWTP effluent that resolved a 10-year non-compliance issue with phosphorus.

CONTACT: Mike Schueler, Public Works Manager
(920) 323-4869
villageofstnazianz@tds.net

VILLAGE OF EASTMAN, WI**PROJECT MANAGER: F. Thomas Mathews, P.E.**

Design of process improvements to convert the 1 MGD facility into an enhanced biological nutrient removal facility. Applied for and secured financing for project.

CONTACT: John Payne, Wastewater Department
(608) 412-1634

CITY OF LOCKPORT, IL**PROJECT MANAGER: F. Thomas Mathews, P.E.**

Project Manager responsible for the project to upgrade the city's WWTP. Responsible for the plans and specifications and construction oversight. The project included grit removal facilities, influent pumps, aeration facilities, aerobic digestion, biosolids thickening facilities, biosolids dewatering facilities, and biosolids storage facilities. The WWTP was expanded from 3.4 mgd to 5.0 mgd.

CITY OF WINONA, MN**PROJECT MANAGER: F. Thomas Mathews, P.E.**

Design of process improvements for an energy saving aeration project. Design of anaerobic digester improvements at a 4 MGD municipal WWTP for a digester renovation project.

VILLAGE OF WATSEKA, IL**PROJECT MANAGER: F. Thomas Mathews, P.E.**

Project Manager for an excess flow treatment facility at a wastewater treatment plant. Responsible for the plans and specifications. The facility was designed to remediate numerous sanitary sewer overflow locations within the Village.

FACILITY PLANS

PROJECT MANAGER: F. Thomas Mathews, P.E.

the facilities plan to outline improvements to the WWTP to achieve compliance with phosphorus discharge regulations in the following Wisconsin communities:

- o Village of Mindoro, WI
- o Village of Unity, WI
- o Village of Waumandee, WI
- o Village of Norwalk, WI
- o Village of Ettrick, WI
- o Village of Cazenovia, WI

ADDITIONAL CONTACTS:

Village of Norwalk
Henry Vian, Head of Public Works
608-823-7760
Norwalkutility@centurytel.net

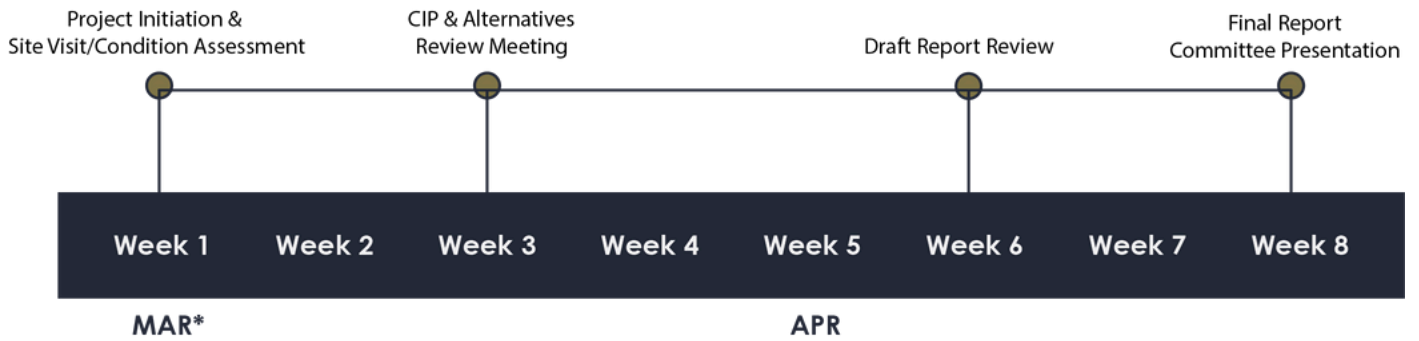
Village of Mindoro
Wendell Pfaff, Wastewater Operator
608-857-3919



PROJECT

timeline & budget

We anticipate a two-month time frame to complete the project. The following timeline outlines the expected timeframes for each requested meeting by the Village.



*Actual start date dependent on date of contract signing

The anticipated costs for the project are outlined below with associated rates.

				<i>Project Manager</i> \$197.76	<i>Urban Planner</i> \$138.43	<i>Grant Writing</i> \$172.80	<i>Professional Engineer</i> \$220.80
1	CIP Development	Budget	Hrs	Mathews	Parr	Brown	Okite
1.1	Administration & Management	\$2,768.60	20		20		
1.2	Meetings & Staff Communication	\$2,768.60	20		20		
1.3	Report Development	\$23,731.20	120	120			
1.4	QA/QC	\$2,649.60	12				12
1.5	Grant Writing*	\$ -					

*Rates for grant writing are included but are not a part of the project budget.

Labor Subtotals	\$31,918.08	172
Mileage & Reimbursables	\$3,068.80	
Project Total	\$34,986.88	

..... **THANK YOU**

CHASTAIN
CONSULTING ENGINEERS

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Schaumburg, IL 60195
773.714.0050
www.chastainengineers.com