



PROPOSAL FOR

2025 Lead Service Line Replacements

Racine Water Utility

▶ AUGUST 9, 2024 — No. RFP-A-24



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Client Focused

We strive to always give our clients the best solutions



Integrity

We do the right thing in an ethical, fair, and sustainable way.



Collaboration

We bring a diverse and inclusive team, working together toward technical excellence.



Innovation

We strive to create new and better ways to solve our clients' toughest challenges.



August 9, 2024

Mike Gitter, PE, Water Utility Director
Chad Regalia, PE, Water Utility Chief Engineer
800 Center Street
Room 227
Racine, WI 53403

Subject: Response to Request for Proposals (RFP) for 2025 Lead Service Line Replacements Project | Project ID No.: RFP-A-24

Dear Mr. Gitter/Mr. Regalia:

TYLin, contracting as T.Y. Lin International Great Lakes, Inc., is pleased submit our qualifications to the City of Racine Water Utility (Utility) for the 2025 Lead Service Line Replacements Project.

We have partnered with communities to develop their initial inventories, create replacement plans and oversee service line replacements as stand alone projects, and in coordination with watermain replacement and roadway reconstruction projects. Since 2017, we have worked side-by-side with utilities in our communities to address this critical need and get the lead out. We look forward to bringing our experience delivering successful projects and acting as a trusted advisor to the City of Racine to advance your efforts on the Lead Service Line Replacement program.

Our key staff is familiar with Racine's Water Distribution System and the requirements for Wisconsin Department of Natural Resources. We have a thorough understanding of the U.S. Environmental Protection Agency's current and proposed Lead and Copper Rule Improvements. Our team is focused on providing robust planning, design, and construction management practices so that you can be confident lead service lines are removed and the work is completed accordance with the regulations and contract requirements.

Our team will be supported by the following sub-consultants:

- ▶ Arora Engineers, Inc. (Arora) is a certified MBE engineering firm experienced assisting communities with GIS mapping for lead service line replacements and modeling.
- ▶ Bloom Companies, LLC (Bloom) is a certified DBE engineering firm with experience in construction management and specializing in underground utilities.

We are confident the TYLin team can successfully deliver the City of Racine Water Utility's Lead Service Line's project, meeting the Utility's goals for the project schedule, budget estimates, and quality. If our firm can provide any further information, please do not hesitate to contact me directly.

Sincerely,

Lawrence Mestan, PE, CCM
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Project Manager
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Description of the Consultant's LSL Replacement Design and Management Experience

TYLin delivers award-winning engineering, architecture, and consulting expertise solely dedicated to providing sustainable engineering solutions for a broad range of water, wastewater, and solid waste challenges. TYLin has staff working in close proximity to Racine currently in Ashland and Wakeusha.

TYLin's staff includes design and construction management staff experiences with the requirements for Racine, and Wisconsin's requirements for water, sewer, and other utility relocations and related roadway, ADA, and restoration standards.

From our experience around the country, our team has become an expert addressing the challenges in lead service line replacement. The TYLin team provides inspection services for service line replacement, water main replacement, and water main relocation projects that involve replacing lead service lines on both the public and private sides of the water main. Since 2017, TYLin has been the trusted advisor for American Water in Indiana in implementing a their first pilot program starting with the replacement of 300 lead service lines as part of systematic water main rehabilitation. We have been working side-by-side with American Water to replace over thousands of lead service lines across Indiana to date.

Our team has the capacity to complete this project on the proposed schedule and is committed to the success of RWU's program.

Our Subconsultants

To augment our in-house staff, we will draw on our well established team of subconsultants who are well known and widely considered authorities in their particular fields of expertise. For this project, our specialized engineering will be further enhanced by the participation of **Arora Engineers, Inc. (Arora)** and **Bloom Companies, LLC (Bloom)**.



For over 38 years Arora has specialized in providing engineering services tailored for clients in transportation, aviation, education, and the commercial sectors. Arora maintains a highly qualified team of GIS/ BIM/CAD professionals that collectively have decades of experience in the aviation, surface transportation, and local state government markets. The Geospatial team is currently engaged in over 20 Geospatial projects for customers across the country. **Arora utilizes GIS knowledge to assist communities with GIS mapping for lead service line replacement and modeling.** Arora is also MBE-certified in the state of Wisconsin.

Arora will provide GIS Mapping support on this project.



Bloom is an emerging leader in engineering and construction management, with a specialized focus on underground utilities. As a certified DBE/MBE/SBE firm, Bloom is committed to providing innovative and sustainable solutions. Since our founding in 1998, the firm has been dedicated to providing cost-effective, high-quality design and construction services. Bloom specializes in underground utilities for municipal clients in the greater Milwaukee area, delivering comprehensive survey, design, and construction administration services. Their commitment to safety is unwavering, with adherence to stringent protocols and holding all necessary OSHA and NAASCO certifications to maintain a compliant work environment.

Bloom will provide inspection support on this project.

DBE Utilization Goal

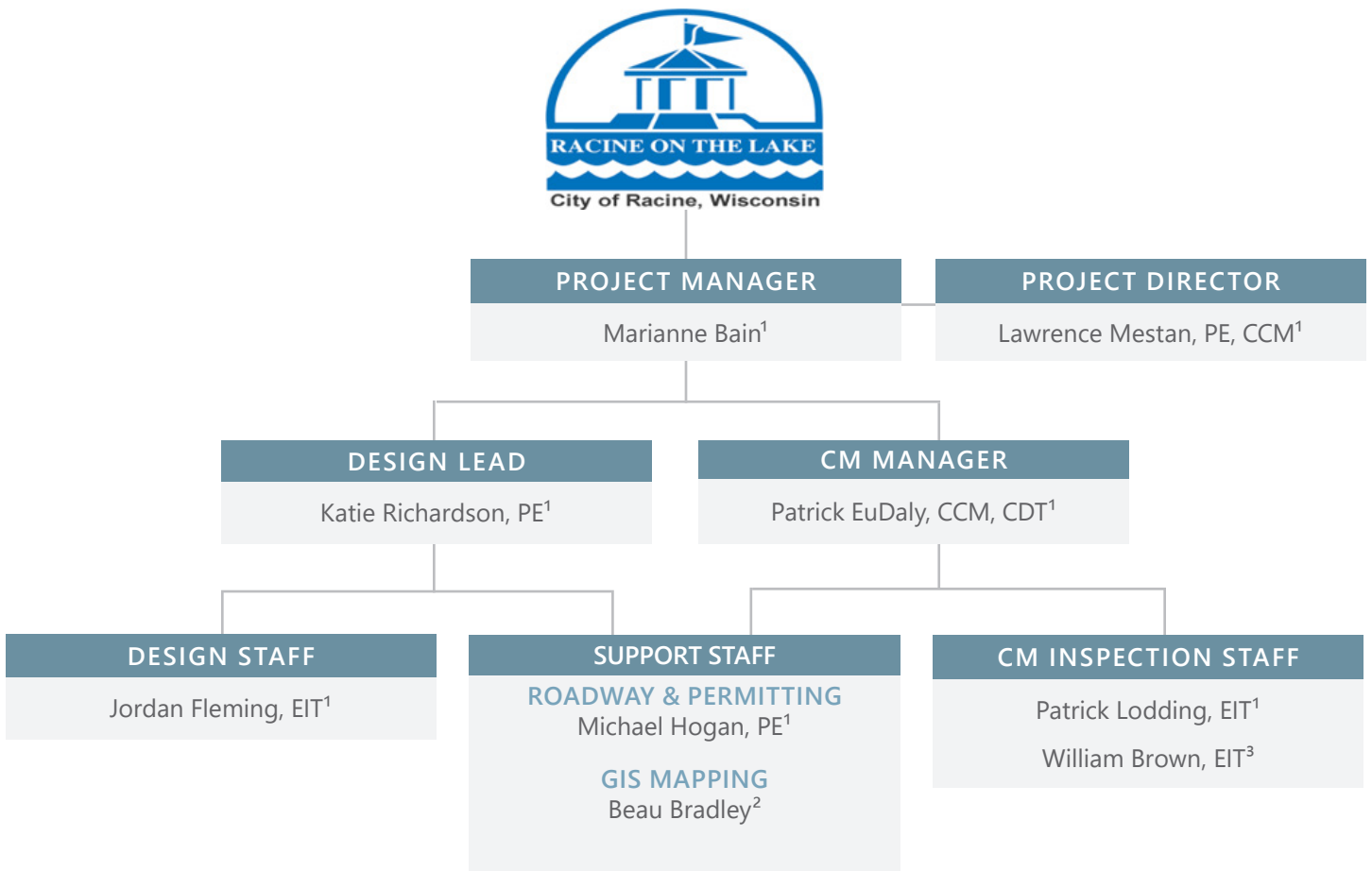
TYLin has a long-standing commitment to partnering with local DBE firms to create jobs that benefit our community. We are genuinely committed to partnering with qualified and experienced minority and women-owned businesses to foster real and beneficial opportunities for these businesses to grow and thrive. Our ultimate goal is to provide RWU with outstanding service by partnering with local firms to create a single and unified team that is readily accessible and has the flexibility, depth and mix of technical skills to meet your project needs. Our team includes trusted partners Arora and Bloom. **We will leverage their support throughout the design and construction phases, fully understanding your program and committing to a 15% DBE goal with a strong desire to exceed it to provide meaningful roles for our partners.**

Qualifications of Key Personnel

TYLin’s career-long dedication to the success of City projects affirms our understanding the City’s ambitions, objectives, expectations, and processes. The combination of our community involvement, local knowledge of the City’s system, and prior experience working with the City of Racine ensures a smooth process and successful project execution with added benefits in terms of time and cost.

The TYLin Team has been trusted by communities across the nation to develop and manage their LSLR projects. We have been doing this work continuously for the past decade. With your goals in mind, TYLin has assembled an experienced team with advanced expertise in lead service line replacement work to ensure program success. Through our expertise and work on similar projects, we have a unique ability to provide efficient and cost-effective engineering services.

Organizational Chart



LEGEND	1 TYLin
	2 Arora Engineers, Inc. (MBE)
	3 Bloom Companies, LLC (DBE)



Marianne Bain | Project Manager

Marianne has over 37 years of experience leading multi-disciplinary construction inspection teams for various water and wastewater projects. Since 2017, Marianne and her team have been focused on replacing 1,000's of lead service lines as part of watermain replacement and relocation projects. She is also a lead service line inventory expert as she is helping communities nationwide meet the EPA guidelines for LSL Replacement.

FIRM: TYLin (Prime)

#YRS. EXPERIENCE: 37

Marianne is AWWA Inspection Certified and a member of the AWWA Lead Service Line Replacement Committee. She will provide technical oversight and support on this project.



Katie Richardson, PE, ENV SP | Design Lead

Catharine (Katie) brings unique experience to the team having degrees in both Communications and Engineering. She brings 20 years of experience; the last 14 years have been working with utilities. She brings a collaborative working style to lead and drive effective program management and program management experience on major programs that have included significant public out-reach including the development of LSL inventory and outreach programs. She has designed and managed the construction of many miles of pipeline, including route studies, permit applications, preparing detailed design drawings, developing hydraulic calculations and opinion of probable construction costs and funding strategies, grant applications, and rate studies, and has served as field technician to evaluate the construction progress for water systems.

FIRM: TYLin (Prime)

#YRS. EXPERIENCE: 20



Patrick Eudaly, CCM, CDT | Construction Management (CM) Manager

Patrick has 36 years of experience in the operation, maintenance, startup and troubleshooting of wastewater treatment facilities. He has developed and provided training programs for operations and maintenance personnel and has prepared operation and maintenance manuals in both hard copy and electronic formats. Patrick has also been involved in the construction aspects of wastewater treatment projects including inspection, startup planning and coordination, and providing operations assistance.

FIRM: TYLin (Prime)

#YRS. EXPERIENCE: 36



Jordan Fleming, EIT | Design Staff

Jordan is a Civil Engineer with seven years of experience. Her experience as a project engineer includes hydrologic and hydraulic modeling, hydraulic analyses, bid coordination, development of Opinions of Probable Project Cost and Opinions of Probable Construction Cost, data infrastructure management, development of rate models, drafting in AutoCAD, creating maps in ArcGIS, financial management, client and customer outreach, project management, and permitting.

FIRM: TYLin (Prime)

#YRS. EXPERIENCE: 7



Lawrence Mestan, PE, CCM | Project Director

Larry has over 20 years of experience in construction engineering as a Resident Engineer and Project Manager. As the national leader for construction management of Water projects, Larry is responsible for bringing best practices to all of our assignments, coordinating resources, and seeing that we provide the best value to our clients. Larry oversees the performance of Construction Management (CM) services by Resident Engineers on multiple projects for clients to maintain project schedules, ensure adequate staffing, and verify that quality processes are being uniformly implemented across the group. With over 20 years of both construction and design experience, he understands how constructability issues influence the design process.

FIRM: TYLin (Prime)

#YRS. EXPERIENCE: 23



Michael Hogan, PE | Roadway and Permitting Support

Michael is a civil engineer with more than five years of civil design experience and eight years in the design and construction industry. Michael has experience in drainage design and stormwater management systems, roadway design, utility coordination, and civil site design, and has previous experience working in construction project management.

FIRM: TYLin (Prime)

#YRS. EXPERIENCE: 8



Patrick Lodding, EIT | CM Inspection Staff

Patrick has ten years of experience in construction engineering. He serves as a staff engineer responsible for construction engineering support. Patrick has worked as Resident Engineer (RE) on various Chicago Department of Water projects ranging from sewer lining to open trench new construction. As RE his duties consisted of requesting utility locating, coordinating material deliveries, inspecting and documenting daily work activities in compliance with contract requirements, reviewing submittals and material samples, tracking quantities for payment, as well as providing record drawings to the client.

FIRM: TYLin (Prime)

#YRS. EXPERIENCE: 10



William Brown, EIT | CM Inspection Staff

William has over three years of experience in multiple disciplines of engineering including transportation, geotechnical, environmental, and general civil projects. Responsibilities have included but are not limited to technical assistance, surveying assistance, and design.

William has experience assisting clients from state, municipal and private facilities. He is developing skills, understanding, and experience in trenchless sewer rehabilitation, infrastructure condition assessments, surveying, civil site and utility design, and construction inspection. Equipment experience includes nuclear density testing, Trimble GPS and Total Station, and confined space entry equipment. Software experience includes MicroStation and AutoCAD Civil 3D.

FIRM: Bloom

#YRS. EXPERIENCE: 3



Beau Bradley | GIS Mapping Support

Beau has over two decades of experience as a GIS professional with deep practice in private, public, non-profit and academic sectors. He has a depth and range of experience deploying GIS for operational solutions and providing decision support for executives, policy makers and project managers. He has managed projects focused on asset data collection and quality assurance, site location spatial analysis, and application development.

FIRM: Arora

#YRS. EXPERIENCE: 20+

Description of Past Work (Utility Contracts) and Familiarity with the Racine Water Distribution System

TYLin, through Greeley and Hansen Water Solutions, has worked with the City of Racine on various projects going back over 20 years. Our team evaluated and provided recommendations regarding pump noise and performance on two 5-mgd axially split, booster pumps at the Perry Avenue Pump Station in Racine, Wisconsin. The study determined that the pumps were cavitating and recommendations were made to trim the impellers to better meet the hydraulic conditions. Through our work with the Waukesha Water Utility, we coordinated installation of the new piping through Racine, working with the community to mitigate impacts and address concerns related to the program. We are currently starting an assignment with the Racine Wastewater Commission that would provide professional engineering services to develop a roadmap for specific goals related to energy reduction. These goals will first need to be specifically defined so that a scope of services for a larger Strategic Plan for Energy can be developed. The findings of the scoping study will then be presented to the Commission for consideration and direction on creation of the "roadmap."

Great Water Alliance Program

Waukesha Water Utility, WI // 2016-2023

The Waukesha Water Utility (WWU) Great Water Alliance (Program) is an historic program to transition from groundwater wells to a surface water supply for the City of Waukesha, which is home to more than 71,000 residents. After receiving unanimous approval from the Great Lakes Compact Council, WWU subsequently commissioned the firm and their team of consultants to implement the Program to transition Waukesha's water supply from groundwater to Lake Michigan water. The purpose of the Program is to plan, design, and construct infrastructure with a 100-year useful life necessary to transition Waukesha's water supply and provide a long-term and sustainable drinking water source. The Program is the first of its kind to access Great lakes water through the Great Lakes Compact. Successful implementation of the Program will set industry precedence for solving water quality and water scarcity challenges for at-risk water supplies in other Great Lakes communities. As part of the Program, approximately 13 miles of transmission main, referred to as the Water Supply Pipeline, and pumping facilities, storage, and chemical treatment will deliver potable water from Lake Michigan to Waukesha from a connection to the City of Milwaukee. A pumping station located at the wastewater treatment plant, known as Waukesha's Clean Water Plant (CWP), and 23 miles of force and gravity main, referred to as the Return Flow Pipeline, are required to achieve a net zero water balance in the Great Lakes–St. Lawrence River Basin by discharging highly treated effluent to the Root River, which ultimately discharges into Lake Michigan. During the project, the team coordinated with Racine on potential impacts the program might have on their community. Open houses were held to understand potential concerns from Racine, the community, and surrounding communities.



Description of Past Completed LSL Replacement Design and Management Projects of Similar Size and Scope

Lead Service Line Replacement Program Management

Citizens Energy Group, IN // Construction Cost: \$87,234 // Jamie Shultz, Construction Manager, 317.429.3929, jshultz@citizensenergygroup.com // 2022-2024 // Services: Construction Services

TYLin teamed with Citizens Energy Group, Indianapolis, IN to replace service lines across Indianapolis. The team is providing assistance and oversight of their lead service line replacement program. Our initial project was a pilot program to customer outreach, data collection and construction procedures. Our role has grown into Program Management as we assist CEG with the implementation of their program. We are working with them on customer outreach by utilizing local community organizations to provide customers with information about the program and to assist in securing replacement agreements. We are also working with both the Contractor and Inspection Consultant to both oversee the work being done and to mentor both groups in an effort to grow the local workforce in the area. Our team is also overseeing the utilization of SRF funds ensuring CEG is meeting all funding requirements and the Contractor is also meeting their requirements such as Davis Bacon Compliance and BABAA requirements. By bringing together our management experience and our field experience in lead service line replacement, we are working to create a successful program.

Lead Service Line Investigation, Inventory and Replacement

American Water, Various Locations // Construction Cost: \$5M // Jackie Byland, jacquelyne.bylnad@amwater.com, 317.807.2462 // 2017 - 2024 // Services: Construction Inspection/Management

TYLin has been working with American Water since 2017 on its full LSLRP and Inventory which is part of the national effort of American Water to remove lead from their systems. Our initial project was in Indiana and involved the replacement of approximately 300 lead lines. Since that time, we have removed thousands of lead lines in multiple communities across the state. We continue to work with Indiana American Water to grow and improve the program in the field. Our team works with customers in the project area to help them understand the replacement program and secure agreements for replacement. Once agreements are secured, we provide oversight of the Contractor to ensure the work is done to the standards of Indiana American Water. The project data is collected through a GIS app which make data collection in the field more efficient by providing the client with real time data as lines are replaced. This information is utilized for completing the pay applications and tracking replacements for regulatory requirements.



Our work with American Water also includes work in Illinois, Pennsylvania and Virginia. Our work with Illinois American Water involved working in various communities across the state to confirm the location of lead service lines for water quality sampling. Our team has been working with Pennsylvania American Water since 2022 to complete the Lead Service Line Inventory for over 700,000 customers across the state. By utilizing our experience with lead service line replacement, we worked to create an inventory process to collect service line information from customers across the state utilizing QR codes for self-identification and offering in-home inspections for customers needing assistance.

Lead Service Line Replacement

American Water, Various Locations, IN // Construction Cost: \$3.8M // Jackie Byland, jacquelyne.bylnad@amwater.com, 317.807.2462 // 2022-2023 // Services: Lead Service Line Replacement & Construction Inspection/Management

Throughout the 2022-2023 Construction season, the TYLin team worked with Indiana American Water (INAW) to replace lead service lines in a large part of the Richmond, IN community. The project included working the contractor to confirm service line materials for replacement or retirement, community outreach to secure replacement agreements and inspection during the replacement process. Our team worked with the INAW as the project grew from an anticipated 250 LSLRs to over 800 LSLRs. Agreements were secured ahead of the Contractor to stay ahead of two city paving project in the replacement area and to keep the project moving forward. Challenges were encountered and our team worked together with INAW and the Contractor to ensure replacements were completed with minimal interruption to the clients water service.

Lead Service Line Experience

The table below is a sampling of our lead service line experience that have features similar to this program.

Project / Client	Collaborate with Construction Team	QA/QC Support Firms PO/Billing	QA/QC LSLRP Field Process	QA/QC GIS Data	Coordinate Site Support	Monitor Field Communications	QA/QC Daily Construction Records	Support for Flushing/Sampling	QA/QC Contractor Pay Apps	Meetings and Outreach	QA/QC As-Built Records	ROW Permit Oversight	Punch List/Customer Concerns Oversight	Utility Design and Construction in Urban Settings
LSL and Watermain Replacement Projects Indiana American Water, Multiple Communities, IN	•		•	•	•	•	•	•	•	•	•	•	•	•
Lead Service Line Replacement Indiana American Water, Richmond, IN	•		•	•	•	•	•	•	•	•	•		•	
Lead Service Line Replacement Program Inventory Henrico County, VA		•	•	•	•					•				
CEG Lead Service Line Program Management Citizens Energy Group, Indianapolis, IN	•	•	•	•	•	•	•	•	•	•	•	•	•	
ILAW Lead Service Line Inventory Illinois American Water, IL		•	•		•	•	•			•	•		•	
Lead Service Line Inventory Program Pennsylvania American Water, PA			•		•	•	•			•				•
Great Lakes Water Supply Program Waukesha Water Utility, Waukesha, WI	•	•		•	•	•	•	•	•	•	•	•	•	•



Project Understanding and Approach


The TYLin Team will partner with you to execute the 2025 Lead Service Line Replacements, continuing the City’s program to replace all lead services in the community. Our team strives to meet your needs and goals building on your knowledge of the community and our experience with lead service line replacement. We have been working to replace lead service lines since 2017 and understand the challenges and rewards associated with lead service line replacement. We will bring our lessons learned to help build a successful program for your community.


Each service line is its own little construction project, each with unique successes and challenges. With each of these our team will learn, adapt, document and mentor. We will document the process and create a history of experience that can be used throughout RWU’s program. We will not only remove the lead from the water system, but also work to create a successful team of field staff and Contractors along the way. The projects will be documented to create a legacy of information that can be used for updating the lead service line inventory and the water utility records.


We have structured our approach to speak directly to the design and construction management services shared in the Request for Proposals.



► Project Management


 **Design and Bid Support Services** – We understand the challenges of lead service line replacement and the need for accurate design drawings and bid documents. With each replacement being its own construction project, it is important to write the specifications so that all items are sufficiently detailed to ensure accurate pricing and minimize change orders. Our team will provide extensive LSL replacement experience, GIS knowledge and understanding of Racine standards together to provide a comprehensive replacement design. We will provide a complete package including design drawings and specifications, bid packages and all necessary support services to deliver a successful project.


 **Collaborate with Construction Team** – We will bring our extensive inspection experience with LSLRP and utilize this to manage the process and mentor support firms to ensure each replacement meets RWU’s Standards. Inspectors will be mentored and guided through the replacement process. This will include providing them with documented procedures and establishing appropriate lines of communication to ensure their success in the field.

 **Compliance with Funding Requirements** – Our team knows firsthand that procedures and documentation combined with a thorough understanding of the requirements of each funding source will be critical to maintain and prove compliance with the BIL grant and loan funding sources. Establishing the documentation requirements at the onset and linking submittal, pay application and other approvals to the receipt of documentation provides a means of maintaining compliance throughout the program for each funding source. A process will be documented so that our team will have a process in place to ensure funding compliance and review replacements and associated project numbers to ensure funds are being used effectively and accurately.


We understand that the growth and development of local small and diverse firms is an important aspect for any Capital Improvement Program. We support this goal and have a legacy of being a partner to the local DBE firms we work with through providing meaningful roles and collaborating on staffing needs.


► Design Services

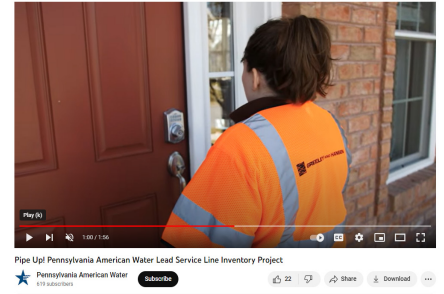
 **Design Approach** – We will bring our experience with lead service line replacement and combine it with the local knowledge of the system to create a design that.


 **Existing GIS Data** - Our team understands that the City has their water system information in their GIS system. We have partnered with Arora Engineers who have extensive experience working with municipal GIS data to prepare this for use in the contract documents.

► Community Outreach

 **Meetings and Outreach** – Every member of the TYLin Team is experienced in both setting up and leading meetings. We are also experienced in conducting public outreach meetings and have met with thousands of homeowners regarding their service line replacements. We will establish templates for standard meetings to ensure consistency and ensure all parties involved are prepared. Our team will have staff ready and available for all types of meetings that will occur throughout the project, so that we have the right person available when needed

 **Community Engagement** – Our team understands that the program’s success is dependent on participation of community members. Building upon long-standing partnerships with community leaders and groups will be a critical part in achieving the required metrics for the LSLRP. Our team’s primary approach to engaging residents will be to identify community advocates and leverage their presence in their communities to receive community buy-in. Through our experience with other agencies, our team has recognized that neighborhood participation is often a barrier to success of the program. To alleviate this barrier, TYLin recommends an approach to identify neighborhood organizations and leaders to act as community advocates throughout the planning and implementation phase of this work. We have learned early engagement can help mitigate concerns and bring the public on-board with the goals of the project. Through careful planning and recognition of the impact this work can have on neighborhoods and individuals, we can bring these improvements to people with the minimum adverse impact possible.





 **Monitor Field Communication** – Due to the scale and crucial nature of this project, the communication plan will need to evolve as the project grows. In addition to monitoring field inspector communications, the TYLin Team will also assist RWU in monitoring interactions among inspectors, contractors, and residents. Our team will work with RWU, Stakeholders and the Contractors to create a plan that allows flexibility to address changing and evolving circumstances. A few considerations of strategic communication to ensure project success are included below:


- Having extensive knowledge and understanding of the community’s demographics such that the outreach plan developed is specifically tailored to that community’s needs. This will also prove beneficial when identifying community advocates for the neighborhood.
- Establishment and consistent delivery of key messages throughout, including development of information, and materials in support of project spokespersons to keep all on the same page. This will include close coordination with RWU as this singular messaging will be critical to the success of the project.
- Creation of methods that ensure two-way communication and the ability of stakeholders to provide input and feedback is important to confirm that the communications and instructions to community members for participation throughout the entire LSLRP and future replacement project process are being communicated clearly and are understood by the community.

Our team will conduct a verification of success through reviews of community engagement once replacement is completed for a particular community. Our team proposes the creation of a feedback loop such that we are able to recognize the unique challenges during outreach and incorporate solutions in the next cycle of neighborhood engagement.

► Construction Administration

 **QA/QC LSLRP Field Process** – It is important to understand the different types of material – lead, galvanized, copper, poly – that have been used over the past 100 years to ensure accurate identification. This is a critical part of the process that needs to be documented to verify that a line is to be replaced – full replacement or partial replacement – and what size service line will be installed during the process. Our team will review this data for accuracy and provide assistance as needed when challenges arise.

 **Schedule and Cost Management** – The TYLin team has led the replacement of 1,000s of lead service lines and understand the need for coordination with the Contractor. We will work with the contractor to develop a detailed and understandable schedule that will track progress through the replacements. Each location will be reviewed to verify that the necessary approvals, permits and agreements are in place. A schedule that tracks and identifies the start of work in an area through installation of a new service, testing, and site restoration will be required. This schedule will track the contractor’s progress and be utilized to inform RWU and stakeholders of progress. We will also monitor contractor resources to track that work can be completed within the timelines being committed to. This will include the notification by the LSLR Contractor regarding scheduled replacements. The customer information such as date of replacement, contact information and any necessary documentation regarding finished basements and water meter locations will be tracked and recorded. The LSLR contractor schedule for home replacements will be tracked and monitored with the team so that communications can be maintained.


 **Coordinate Site Support** – The construction administration team will be guided through the process of being the liaison between the Contractor and the customer. This process requires that resolutions are consistent for the parties involved as the project moves through communities. The team will have an understanding of how to resolve issues, with the goal of resolving issues at the lowest appropriate level and when to escalate issues to a higher level. A procedure will be documented to ensure that concerns are addressed and documented consistently. The support team will be structured to resolve as many issues as possible so that the contractor can focus on LSLRP.


Securing the Right of Entry can be one the most challenging aspects of service line replacement. Our team understands that a successful community outreach program is critical to the program success. Securing agreements typically requires multiple at-tempts reaching out to customers. We will utilize our experience with similar projects, build on relationships developed during design, and engage community advocates to enhance the success of this crucial process. As customers are contacted and lead lines are confirmed, the field team will take the time to explain the flushing process to homeowners and provide necessary information for scheduling and post re-placement follow up. The flushing after replacement is critical to removing any residual lead from interior service lines. The field staff will then provide the filter pitcher and replacement filters for the homeowners. This will also be a time to discuss the 6-month sample with the goal of every customer utilizing this service to reinforce that their water is safe.


As each ROE is returned, it will be reviewed for accuracy and completeness. Our process will be to review these daily as they are required to start the replacement. We will work with the LSLR contractor and verify that homeowners understand the replacement process.


Since 2017, Indiana American Water has trusted TYLin to help develop their LSLRP and work with them to refine and grow the program every year.



 **QA/QC Daily Construction Records** – The TYLin Team is intimately aware of the need for complete and accurate reporting for construction projects. This priority will be addressed with all field support staff to ensure accurate records are maintained for each replacement. This will be reviewed for completeness and accuracy in a timely manner. This will allow for process improvements as needed.

 **Permitting and Restoration** – Our team is familiar with the requirements for work within the Right-of-Way and tracking that the Contractors are performing work in accordance with permit restrictions. With the scattered site work inherent to LSLR projects, it is key that the team be organized in tracking active permits, and that site restoration be monitored. This work has the potential to impact the roadway, parkways, sidewalks and private property. Accurate record of existing conditions, and holding the contractor accountable for restoration and maintain a tidy site are a major factor in delivering a successful project.

 **Punch List/Customer Concerns Oversight** – With every project in a community, there is the potential for both a punch list and concerned customers. This LSLRP is no different. Educating both the contractors and Support Firms on the restoration required for this type of project is critical. Establishing a consistent standard and expectation across the project will benefit everyone involved. For those items that are of a concern for the Customer, the Support Firm will be made aware of the standard of care that is to be provided to RWU customers. They will also know that the TYLin Team is available as needed for those more challenging situations. The process will also include a clear procedure for escalation in the event an issue cannot be easily resolved with the customer.

 **QA/QC Support Firm PO/Billing** – We will create a process, schedule and structure for the Contractor and RPR staff to follow so that all invoices are submitted timely and accurately in a manner compliant with Bipartisan Infrastructure Law (BIL) funding through the Drinking Water State Revolving Fund (DWSRF) requirements. With various projects utilizing funding from various sources, we will ensure that invoices are properly tied to the correct project number ensuring accurate financial record keeping and a streamlined compliance & auditing process for RWU.



TYLin has been developing, managing and leading lead service line replacement projects and programs in Indiana since 2017, and are performing this work for agencies across the country. We strongly believe in the mission of this work everyday as it directly impacts the health and livelihood of families we care about. Our team is ready to start work and is motivated to be a part of this critical project. We are eagerly excited about the opportunity to assist the City of Racine in providing safe and clean drinking water to our community.

Description of Proposed Approach and Timeline for Accomplishing the Project Tasks

The timeline included as a baseline to demonstrate the design services tasks including advertising, reviewing the bids, recommendations and awarding can be accomplished with the time frame required by Racine Water Utility. If selected to complete both projects, the timelines will be similar, with adjustments made to allow for review by Racine Water Utility staff and accommodate bidding advertisement needs.

Taking into consideration the short time from for the East Side project, the design services can be accelerated to provide additional time for construction on the Wisconsin Avenue portion depending on the finalized City Public Works schedule. Please see the following page for the proposed project timeline.

Proposed Project Timeline



Itemized Cost Estimate of Contract Tasks for Each 2025 LSL Replacement Project Utility Planned Phase

We have provided three estimates as requested in the RFP based on our interpretation of the information provided and requirements of each project.

Fee Estimate Combined East and West Side Projects

Racine Water Utility 2025 Lead Service Line Replacements
 Consultant Fee Estimate Combine East and West Side Projects

Task Description	Cost
Task 1 - Design and Bidding	\$ 40,114.36
Review as built/GIS data for design LSL Contracts	\$ 22,750.00
Design Development	\$ 10,212.12
Cad Technician	\$ 6,000.00
Plan Review	\$ 4,495.16
Contract Bid/Award/Contract	\$ 2,657.08
Task 2 - Outreach and Notification	\$ 19,702.58
Revise and edit document	\$ 1,482.60
Mail notifications - up to three times - estimate 589 total	\$ 5,909.50
Coordination with local Contacts	\$ 4,352.88
Inspection/ROE form and data tracking - spreadsheet	\$ 7,957.60
Task 3 - Consturction Administration	\$ 394,194.44
Monthly Progress Meetings and meeting notes	\$ 5,953.44
Permit assistance	\$ 3,461.72
Inspection - ROE, Coordination, Tracking, Filter Pitchers, Final Walkthrough	\$ 301,099.48
Pay Applications including Davis Bacon Interviews	\$ 83,679.80
Additional Outreach	\$ 8,676.24
Additional Outreach Corridnation	\$ 8,676.24
Total Subcontractor Markup (5%)	\$ 3,961.14
Direct Reimbursable Expenses	\$ 75,000.00
TOTAL	\$ 6,961

\$ 469,649

MBE/DBE Participation	
GIS MBE Subconsultant	\$22,750
Inspection DBE Subconsultant	\$63,221.81
MBE/DBE Percentage	18.31

Fee Estimate East Side Project Only

Racine Water Utility 2025 LeadService Line Replamcements
 Consultant Fee Estimate East Side Project

Task Description	Cost
Task 1 - Design and Bidding	\$ 27,410.68
Review as built/GIS data for design LSL Contracts	\$ 17,500.00
Design Development	\$ 5,515.56
Cad Technician	\$ 3,000.00
Plan Review	\$ 2,657.08
Contract Bid/Award/Contract	\$ 1,738.04
Task 2 - Outreach and Notification	\$ 16,251.62
Revise and edit document	\$ 1,482.60
Mail notifications - up to three times - estimate 589 total	\$ 3,909.50
Coordination with local Contacts	\$ 2,901.92
Inspection/ROE form and data tracking - spreadsheet	\$ 7,957.60
Task 3 - Consturction Administration	\$ 218,297.34
Monthly Progress Meetings and meeting notes	\$ 5,953.44
Permit assistance	\$ 2,887.16
Inspection - ROE, Coordination, Tracking, Filter Pitchers, Final Walkthrough	\$ 142,356.84
Pay Applications including Davis Bacon Interviews	\$ 67,099.90
Additional Outreach	\$ 8,676.24
Additional Outreach Coordination	\$ 8,676.24
Total Subcontractor Markup (5%)	\$ 1,950.00
Direct Reimbursable Expenses	\$ 61,500.00
TOTAL	\$ 4,950

Total Fee	\$ 275,586
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MBE/DBE Participation	
GIS MBE Subconsultant	\$17,500
Inspection DBE Subconsultant	\$31,000.00
MBE/DBE Percentage	17.60

Fee Estimate West Side Project Only

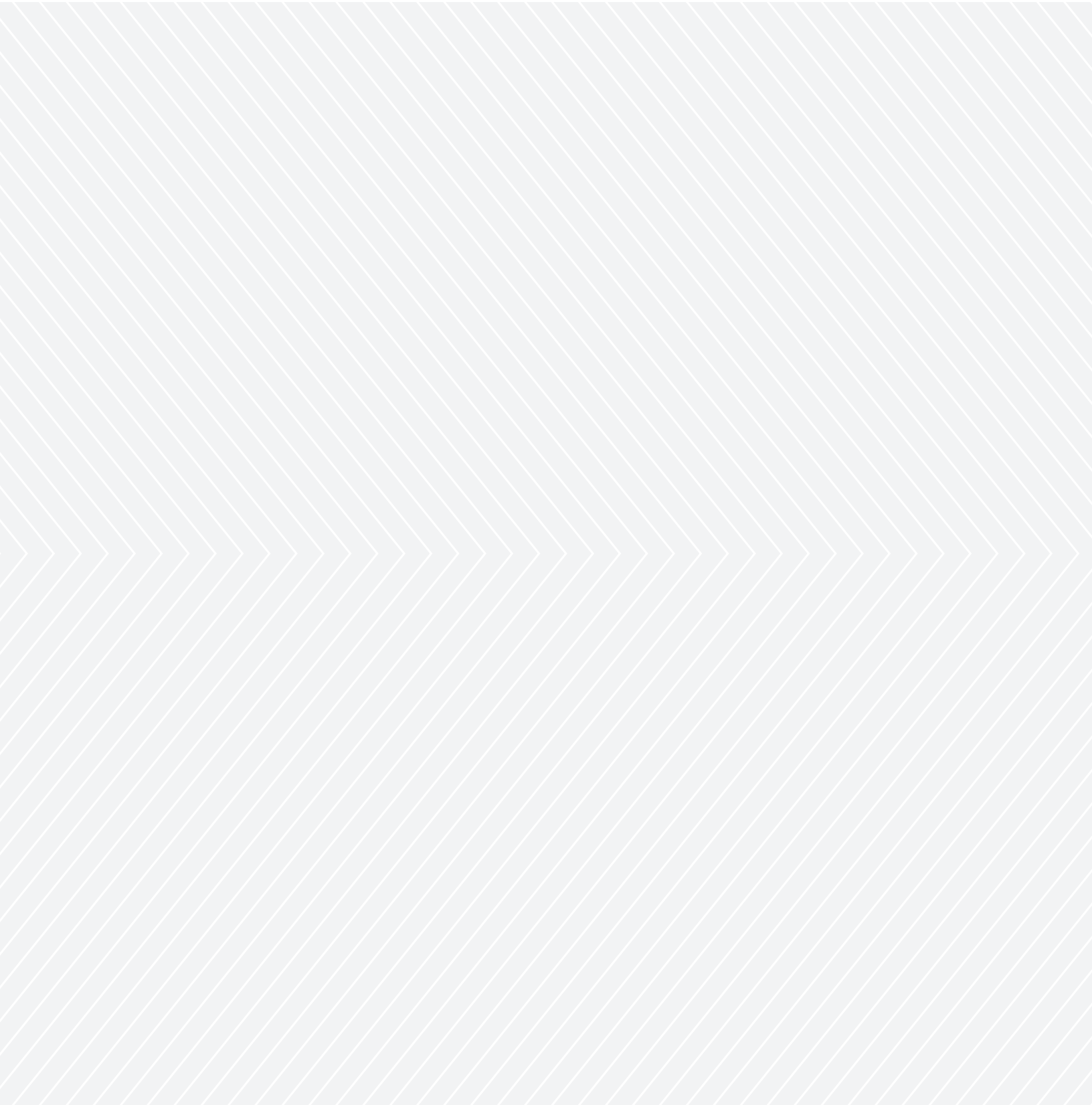
Racine Water Utility 2025 Lead Service Line Replacements
 Consultant Fee Estimate West Side Project

Task Description	Cost
Task 1 - Design and Bidding	\$ 27,410.68
Review as built/GIS data for design LSL Contracts	\$ 17,500.00
Design Development	\$ 5,515.56
Cad Technician	\$ 3,000.00
Plan Review	\$ 2,657.08
Contract Bid/Award/Contract	\$ 1,738.04
Task 2 - Outreach and Notification	\$ 14,751.62
Revise and edit document	\$ 1,482.60
Mail notifications - up to three times - estimate 589 total	\$ 3,909.50
Coordination with local Contacts	\$ 2,901.92
Inspection/ROE form and data tracking - spreadsheet	\$ 7,957.60
Task 3 - Consturction Administration	\$ 231,145.50
Monthly Progress Meetings and meeting notes	\$ 5,953.44
Permit assistance	\$ 2,887.16
Inspection - ROE, Coordination, Tracking, Filter Pitchers, Final Walkthrough	\$ 215,205.00
Pay Applications including Davis Bacon Interviews	\$ 67,099.90
Additional Outreach	\$ 8,676.24
Additional Outreach Coordination	\$ 8,676.24
Total Subcontractor Markup (5%)	\$ 2,200.00
Direct Reimbursable Expenses	\$ 61,500.00
TOTAL	\$ 5,200

Grand Total	\$ 287,184
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MBE/DBE Participation	
GIS MBE Subconsultant Auroua	\$17,500
Inspection DBE Subconsultant Bloom Companies	\$36,000.00
MBE/DBE Percentage	18.63

| Resumes





Marianne Bain

Project Manager

PROFESSIONAL EXPERIENCE

Marianne has over 36 years of proven experience leading multi-discipline construction inspection teams for numerous water main replacements and relocations, water and wastewater treatment plant renovations, wastewater lift station and force main projects. She takes a hands-on approach and continuously observes the work to maintain progress of the work and its quality. Marianne is experienced leading a team of specialty (discipline specific) inspectors and partnering with the Contractor to problem-solve in the field to maintain progress of the work.

RELEVANT EXPERIENCE

Project Manager for Lead Service Line Inventory - Pennsylvania American Water, PA.

As Project Manager for the LSL Inventory project, Marianne led a team of office and field staff through the inventory process for Pennsylvania American Water. This project started in 2022 and will be complete in 2024 and will inventory and document over 674,000 service lines owned by Pennsylvania American Water. The inventory will involve a review of existing material records, a process to match customer data to material data, community outreach through postcards, emails and door hangers. Customers will be able to report their own service line material via a QR code or they can request assistance by email or a toll-free number. The team assists customers over the phone or by providing in-home inspections for those needing assistance.

Project Manager/Inspector for US 27 North Water Main Relocation - Indiana American Water for the Richmond Sanitary District, IN.

This project consisted of approximately 1.5 miles of 10-inch diameter ductile Iron water main and 16-inch diameter ductile iron water main. Marianne inspected the installation, testing and multiple connections for the watermain and coordinated any modifications with INAW and INDOT. This project also included lead service lines which required coordination with a separate contractor for installation. For lead service lines, this included customer outreach, securing replacement agreements and coordination between contractors. All watermain and service line work was GPS'd and quantities tracked for verification with INDOT.

Project Manager for the Illinois American Water Lead Service Line Audit, IL.

An audit of approximately 3,000 service lines was completed to verify the presence of exterior lead service lines and interior copper plumbing. The services were locations that were used for lead and copper sampling and verification was required by the IL EPA. The project consisted of customer outreach and field verification. The customer outreach involved communications sent to customers to determine interior plumbing material, age of home and presence of water softeners. Follow up calls were made to customers and the information gathered was then entered into the ILAW Data Tracking System (MapCall). Field verification involved pot-holing water service lines to confirm the presence of lead. This information, including photographs, was also entered into MapCall. This information was then provided to IL EPA for lead and copper compliance sampling.

Project Manager for the 2019 Indiana American Water Main Replacement, Relocation and Lead Service Line Replacement Projects for Muncie, Richmond, Kokomo, Wabash, West Lafayette, Mooresville and Gary, IN.

The work consisted of managing a team of inspectors for water main replacement and relocation projects ranging in size from 2 to 16 inches in diameter, replacing services, valves and hydrants. Marianne also managed a team working on lead service line replacements. With a team of 5, Marianne managed this work to provide on-site inspection and project documentation. Each team member inspected their own project and all were successfully completed in a timely manner. Her team provide inspection services which included project documentation, record cards, GPS data collection for all services, valves and hydrants and testing of mains and pay applications.

Resident Representative for Stellar Streets Relocation and Service Line Replacement Projects for the Richmond Sanitary District, IN.

These two projects were coordinated with an INDOT Project to relocate sections of water main and replace any lead service lines within the project area. There were approximately 100 services in various stages of replacement.

YEARS OF EXPERIENCE

36

EDUCATION

M.B.A., Meredith College

B.S. Building Construction and Contracting, Purdue University

PROFESSIONAL REGISTRATIONS

INDOT Concrete Paving Certification:

INDOT Pipe Structures and Layout Certification

INDOT Construction Earthworks Certification

AWWA Inspection Certification



Catharine Richardson, PE, ENV SP

Design Lead

PROFESSIONAL EXPERIENCE

Catharine (Katie) brings unique experience to the team having degrees in both Communications and Engineering. She brings 20 years of experience; the last 14 years have been working with utilities. She brings a collaborative working style to lead and drive effective program management and program management experience on major programs that have included significant public out-reach including the development of LSL inventory and outreach programs. She has designed and managed the construction of many miles of pipeline, including route studies, permit applications, preparing detailed design drawings, developing hydraulic calculations and opinion of probable construction costs and funding strategies, grant applications, and rate studies, and has served as field technician to evaluate the construction progress for water systems.

RELEVANT EXPERIENCE

Project Director for Water Main Rehabilitation Project - Milwaukee Water Works, WI

MWW is responsible for rehabilitation and replacement of water mains that have reached the end of their useful life. MWW retained the services of the Firm to prepare the water main construction drawings. The purpose of the project is to design and prepare construction drawings for a little over two miles of water main that requires replacement and lead service line replacements in multiple locations.

Program Manager/Deputy Program Manager for Great Water Alliance Program - Waukesha Water Utility, WI

The Waukesha Water Utility (WWU) Great Water Alliance (Program) is a historic program to transition from groundwater wells to a surface water supply for the City of Waukesha, which is home to more than 71,000 residents. The St. Peter Sandstone aquifer, which has been the primary source of drinking water for not only Waukesha, but for communities throughout the Midwest, is being depleted in Southeast Wisconsin. Depletion of the St. Peter Sandstone aquifer has caused radium and other contaminants to become more concentrated. As a result, Waukesha needs a long-term, sustainable alternative to its existing water supply to protect public health and support future growth. The infrastructure includes two pumping stations, two pipelines and an outfall facility with electrical and I&C design to provide water to the City of Waukesha and return it to Lake Michigan reliably and in a way that effluent limitations are recorded and reported readily. Katie, as Deputy Program Manager/Program Manager, is responsible for achieving Waukesha Water Utility's program vision along with managing the program schedule, coordinating with the program task leaders, and overseeing the permitting tasks. She is also supporting the development of a pipeline design to last 100 years that can be operated efficiently and effectively.

Technical Advisor for Lead Service Line Audit, Illinois American Water, IL

An audit of approximately 3,000 service lines was completed to verify the presence of exterior lead service lines and interior copper plumbing. The services were locations that were used for lead and copper sampling and verification was required by the IL EPA. The project consisted of customer outreach and field verification. The customer outreach involved communications sent to customers to determine interior plumbing material, age of home and presence of water softeners. Follow up calls were made to customers and the information gathered was then entered into the ILAW Data Tracking System (MapCall). Field verification involved pot-holing water service lines to confirm the presence of lead. This information, including photographs, was also entered into MapCall. This information was then provided to IL EPA for lead and copper compliance sampling.

Technical Advisor for Lead Service Line Audit - Pennsylvania American Water, PA

An audit of approximately 674,000 service lines was completed to verify the presence of exterior lead service lines and interior copper plumbing. The services were locations that were used for lead and copper sampling and verification was required by the PA EPA. The project consisted of customer outreach and field verification. The customer outreach involved communications sent to customers to determine interior plumbing material, age of home and presence of water softeners. Follow up calls were made to customers and the information gathered was then entered into the PAAW Data Tracking System (MapCall). Field verification involved pot-holing water service lines to confirm the presence of lead. This information, including photographs, was also entered into MapCall. This information was then provided to PA EPA for lead and copper compliance sampling.

YEARS OF EXPERIENCE

20

EDUCATION

BS, Civil Engineer, University of Wisconsin

BA, Communication Studies, University of Minnesota

PROFESSIONAL REGISTRATIONS

Professional Engineer: Illinois and Wisconsin

Envision Sustainability Professional (ENV SP)

Lawrence Mestan, PE, CCM

Project Director

PROFESSIONAL EXPERIENCE

Larry has over 23 years of experience in construction engineering as a Resident Engineer and Project Manager. Larry oversees the performance of Construction Management (CM) services by Resident Engineers on multiple projects for clients nationwide to maintain project schedules, ensure adequate staffing.

RELEVANT EXPERIENCE

Senior Construction Manager for BP 5 & BP 7A Distribution Watermain Installation – Oak Lawn Regional Water Commission, IL

TYLin is providing construction inspection and management services and design services during construction for the installation of 16,000 linear feet of 60 inch welded steel watermain and 17,500 linear feet (LF) of 30 inch to 42 inch ductile iron pipe watermain. These \$90M construction projects are the final stages to complete a \$300M program establishing a new, redundant water source servicing a total of 12 communities who obtain drinking water from the City of Chicago through the Oak Lawn Regional Water Commission. The pipeline installation includes blow-off assemblies, butterfly valves up to 60 inch diameter, air release, air/vacuum, and vacuum breaker valve assemblies, cathodic protection, spur connections to member communities, and connection to previously constructed booster station #2. Upon installation of the pipeline, a total of 81,000 LF of the system will go through flushing and disinfection procedures so it can be put into operational service. Micro tunnel crossings of Stony Creek and the Illinois Tollway will minimize impacts to these critical assets. The project includes temporary and permanent traffic signal restoration at nine intersections, sewer relocation, private utility relocation, roadway, median, curb and gutter, sidewalk, and driveway reconstruction. Tree removal and replacements, upland restoration reestablishing the natural forest and grassland areas and urban landscaping will complete the project. As the Senior Construction Manager, Larry is responsible for management of the construction management team, overall quality control, budget and schedule management, and interfacing with the design review team.

Project Principal for Lead Service Line Inventory - Pennsylvania American Water, PA

Responsible for overall budget, quality control, and management of the team of field staff, subconsultants and office support. The project will inventory and document over 700,000 service lines owned by Pennsylvania American Water. They will include both company and customer side service lines. The project will develop an inventory through review and researching existing records, community outreach which includes in home site visits and pot holing as needed. All documentation will be reported to MapCall, an American Water database, in preparation of EPA reporting requirements for unknown services. This project also includes coordination with water quality, construction projects, maintenance projects and lead service line replacement projects across the state.

Project Manager for Chicago Department of Water Management Sewer Lining Program, IL

Responsible for the Chicago Department of Water Management, Sewer Lining (SML) Program under various task order assignments. The sewer lining program completes in excess of 50 miles of cured in place lining (CIP) of sewer mains ranging from 12-inch to 60-inch per year across all 50 wards in the City of Chicago. As part of the 2019 program, Larry worked with the Department to scope contracts, develop CM inspection procedures, prepare specifications, and present case study reports for geopolymer lining bringing a new technology to use within Chicago. Larry had led efforts to coordinate review of contractor liner designs and develop independent review calculations within TYLin's structural engineering group. TYLin has been selected to lead this program continuously since 2007, with the program growing from an initial 10 miles per year, and completing over 700 total miles lined since the program began. .



YEARS OF EXPERIENCE

23

EDUCATION

BS, Civil Engineering, Iowa State University, 2000

PROFESSIONAL REGISTRATIONS

Professional Engineer: Colorado, District of Columbia, Illinois, Indiana, Iowa, Kentucky, New Jersey, New York, and Oklahoma

Unmanned Aircraft System Remote Pilot Certificate

OHSA 30-Hour Construction Safety and Health

Illinois Department of Transportation (IDOT) Document of Contract Quantities

Construction Managers Association of America – Certified Construction Manager (CCM)



Patrick B. EuDaly, CCM, CDT

Construction Manager

PROFESSIONAL EXPERIENCE

Patrick has 36 years of experience in the operation, maintenance, startup and troubleshooting of wastewater treatment facilities. He has developed and provided training programs for operations and maintenance personnel and has prepared operation and maintenance manuals in both hard copy and electronic formats. He has also been involved in the construction aspects of wastewater treatment projects including inspection, startup planning and coordination, and providing operations assistance.

RELEVANT EXPERIENCE

Field Staff Manager for Lead Service Line Inventory - Pennsylvania American Water, PA

Responsible for coordinating field staff and assigning areas for inspection. The project will inventory and document over 700,000 service lines owned by Pennsylvania American Water. They will include both company and customer side service lines. The project will develop an inventory through review and researching existing records, community outreach which includes in home site visits and pot holing as needed. All documentation will be reported to MapCall, an American Water database, in preparation of EPA reporting requirements for unknown services. This project also includes coordination with water quality, construction projects, maintenance projects and lead service line replacement projects across the state.

Field Staff Manager for Lead Service Line Investigation - Illinois American Water Company, IL

Responsible for coordinating field staff, overseeing the pothole operations, maintaining daily logs of lead service lines discovered, and updating the MapCall database.

Project Engineer for Granular Activated Carbon Replacement - City of Michigan, IN

Responsible for reviewing and modifying the technical specifications and invitation to bid document.

Resident Project Representative for On-Shore Intake Replacement - City of Michigan, IN

The overall project involved the replacement of 2,500 feet of 42- and 48-inch diameter intake pipe with 48-inch ductile iron pipe and the construction of a new access structure. Responsibilities included overseeing the construction of the project, reviewing and approving contractor pay requests and reviewing submittals.

UP01 Project - City of Phoenix, AZ

This project included the construction of the UP01 wastewater treatment plant (WWTP), and the commissioning of the UP01 WWTP. Responsibilities included, completing construction of the projects, solving design and operation challenges, and operating a 40 MGD WWTP from the headworks through effluent.

Water Reclamation Facility - City of North Las Vegas, NV

Responsibilities included completion the start-up of the gravity belt thickeners, centrifuges and the load-out hoppers. Optimized the equipment, developed training material and trained the plant staff on the operation of the equipment. Developed the final punch list for construction and inspection.

YEARS OF EXPERIENCE

36

CERTIFICATIONS

Indiana Department of Transportation Certified Technician

- Concrete Paving
- Bituminous paving
- Bridge Construction and Deck Repair
- Construction Earthwork
- Traffic Items
- Construction Layout

Troxler Certified Nuclear Gauge Operator

Pipeline Assessment and Certification Program (PACP), NASSCO

Manhole Assessment and Certification Program (MACP), NASSCO

Certified Construction Manager from the Construction Manager Association of America

Contract Document Technologist from the Construction Specification Institute

Project Management Certification, IU Kelly School of Business

OSHA 10-Hr. Construction Safety

Jordan Fleming, EIT

Design Support

PROFESSIONAL EXPERIENCE

Jordan is a Civil Engineer with seven years of experience. Her experience as a project engineer includes hydrologic and hydraulic modeling, hydraulic analyses, bid coordination, development of Opinions of Probable Project Cost and Opinions of Probable Construction Cost, data infrastructure management, development of rate models, drafting in AutoCAD, creating maps in ArcGIS, financial management, client and customer outreach, project management, and permitting.

RELEVANT EXPERIENCE

Project Engineer for Lead Service Line Replacement - Columbus City Utilities, IN

Columbus City Utilities (CCU) provides water to nearly 20,000 customers across its service area. The firm has been engaged by CCU to conduct a full inventory of the service lines throughout Indiana for all CCU water users, create a plan to remove and replace lead, lead goosenecks, and galvanized service lines in compliance with federal and local EPA mandates. Jordan's responsibilities include assessing existing parcel, service and historical infrastructure data, coordinating with county officials, developing a framework to efficiently organize, assess and document service line and geographical data to inventory all service lines, and developing a technical report to document framework and guide subsequent steps.

Project Engineer for Lead Service Line Replacement - Pennsylvania American Water Company, PA

Pennsylvania American Water Company (PAWC) provides water to nearly 675,000 customers throughout the state of Pennsylvania. The firm has been engaged by PAWC to conduct a full inventory of the service lines throughout Pennsylvania for all PAWC water users, create a plan to remove and replace lead, lead goosenecks, and galvanized service lines in compliance with federal and local EPA mandates. Jordan's responsibilities include developing a framework to efficiently organize, assess and document service line and geographical data to inventory all service lines, lead customer outreach, including to low and moderate income areas, to ensure cooperation of property owners and community members via phone, email, mail and digital forms to streamline communication, coordination with contractors conducting potholing, leading workshops, and use and training of robust data entry infrastructure for effective harmonization of customer outreach and fieldwork data.

Project Engineer for Lead Service Line Replacement - Illinois American Water Company, IL

Illinois American Water Company (ILAWC) provides water to nearly 325,000 customers throughout the state of Illinois. The firm has been engaged by ILAWC to conduct a full inventory of the service lines throughout Illinois for 3,000 water users, create a plan to remove and replace lead, lead goosenecks, and galvanized service lines in compliance with Illinois House Bill 3739, the Lead Service Line Notification and Replacement Act, and position ILAWC for subsequent action. Although service line record data exists, it has become apparent through potholing and field testing that existing data and customer-reported data is inconsistent with actual public and private side lead service line data uncovered in the field. Jordan's responsibilities include customer outreach, including to low- and moderate-income areas, to ensure cooperation of property owners and community members and understanding of water sampling processes and results via phone, email, mail and digital forms to streamline communication, coordination with contractors conducting potholing, and use and training of robust data entry infrastructure for effective harmonization of customer outreach and fieldwork data.



YEARS OF EXPERIENCE

7

EDUCATION

MS, Civil Engineering, University of Illinois

BS, Mechanical Engineering, Northwestern University

LICENSES

Engineer-In-Training (EIT)

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE), Member

American Water Works Association (AWWA), Member

National Society of Black Engineers (NSBE), Member

Michael Hogan, PE

Roadway and Permitting Support

PROFESSIONAL EXPERIENCE

Michael is a civil engineer with more than five years of civil design experience and eight years in the design and construction industry. Michael has experience in drainage design and stormwater management systems, roadway design, utility coordination, and civil site design, and has previous experience working in construction project management.

RELEVANT EXPERIENCE

Project Engineer for Sewer Improvement Program TOR 23-04 - Chicago Department of Water Management (CDWM), IL

Provided civil engineering services for CDWM Task Order 23-04, including Project Numbers #7040A, #7486, #7507, and #7530. Michael is responsible for design and delivery of the full plan set submittal for CDWM in-house construction. This includes over 8400 feet of new sewer, utility coordination, removal of existing sewer infrastructure, maintenance of traffic, traffic signing and staging, drainage and grading improvements, ADA improvements, and pavement restoration.

Staff Engineer for Sewer Improvement Program TOR 20-05 - Chicago Department of Water Management (CDWM), IL

Provided Phase II civil engineering services for CDWM Task Order 20-05, including Project Numbers #7348, #7400, and #7439. Michael is responsible for supporting the design and delivering the full PS&E submittal package. This includes over 9500 feet of new sewer, utility coordination and conflict resolution, removal of existing sewer infrastructure, maintenance of traffic, traffic signing and staging, drainage and grading improvements, ADA improvements, and pavement restoration.

Project Engineer for Sewer Improvement Program - Chicago Department of Water Management (CDWM), IL

Provided Phase II civil engineering services for CDWM Task Order #7348, #7400, and #7439. Michael is responsible for supporting the design and delivering the full PS&E submittal package. This includes design of over 9500 feet of new sewer, utility coordination and conflict resolution, removal of existing sewer infrastructure, maintenance of traffic, traffic signing and staging, drainage and grading improvements, ADA facility improvements, and pavement restoration.

Project Engineer for Elgin O'Hare Western Access (EOWA) - Illinois Toll Highway Authority (ISTHA), IL

The Illinois Tollway's EOWA project includes the proposed I-490 as well as improvements to surrounding arterial roadways for proposed interchanges. Contract 4742 includes full roadway improvements for Green Street, Franklin Avenue, and County Line Road for widened roadways with upgrades to drainage, lighting, traffic signals, and coordination with utilities, railroads, the Villages of Bensenville and Franklin Park, and Cook County as well as other EOWA contracts. Contract 4743 includes over a half mile of proposed I-490, proposed ramps and the proposed Franklin Connector Road to Franklin Avenue. Michael is responsible for the drainage system design for both contracts.

Project Engineer for Auburn Park Station, Hubbard Woods Station, Homewood Station, 147th Street Station, Downtown Station Identifiers - Metra, IL

For a variety of Metra Station design and construction projects at various stages, Michael has provided civil engineering services including site development and geometry, utility and drainage design, site grading, and coordination with municipalities and permits.



YEARS OF EXPERIENCE

8

EDUCATION

BS, Civil Engineering, University of Notre Dame

LICENSE

Professional Engineer: Illinois

Patrick Lodding, EIT

Construction Management Inspection Staff

PROFESSIONAL EXPERIENCE

Patrick has ten years of experience in construction engineering. He serves as a staff engineer responsible for construction engineering support. Patrick has worked as Resident Engineer (RE) on various Chicago Department of Water projects ranging from sewer lining to open trench new construction. As RE his duties consisted of requesting utility locating, coordinating material deliveries, inspecting and documenting daily work activities in compliance with contract requirements, reviewing submittals and material samples, tracking quantities for payment, as well as providing record drawings to the client.

RELEVANT EXPERIENCE

Assistant Resident Engineer for BP 5 & BP 7A Distribution Watermain Installation – Oak Lawn Regional Water Commission, IL

TYLin is providing construction inspection and management services and design services during construction for the installation of 16,000 linear feet of 60 inch welded steel watermain and 17,500 linear feet (LF) of 30 inch to 42 inch ductile iron pipe watermain. These \$90M construction projects are the final stages to complete a \$300M program establishing a new, redundant water source servicing a total of 12 communities who obtain drinking water from the City of Chicago through the Oak Lawn Regional Water Commission. The pipeline installation includes blow-off assemblies, butterfly valves up to 60 inch diameter, air release, air/vacuum, and vacuum breaker valve assemblies, cathodic protection, spur connections to member communities, and connection to previously constructed booster station #2. Upon installation of the pipeline, a total of 81,000 LF of the system will go through flushing and disinfection procedures so it can be put into operational service. Micro tunnel crossings of Stony Creek and the Illinois Tollway will minimize impacts to these critical assets. The project includes temporary and permanent traffic signal restoration at nine intersections, sewer relocation, private utility relocation, roadway, median, curb and gutter, sidewalk, and driveway reconstruction. Tree removal and replacements, upland restoration reestablishing the natural forest and grassland areas and urban landscaping will complete the project. As Assistant Resident Engineer, Patrick/Brittany is responsible for daily inspection of the construction work, measurement of contractor quantities, material inspection and quality assurance inspection.

In-House Resident Engineer for Task Order Services - Chicago Department of Water Management (CDWM), IL

Patrick served as an In-House Resident Engineer for the City of Chicago Department of Water Management. Patrick worked with the Area Engineer to provide construction management, and technical assistance of the in-house sewer crews. His duties during construction include requesting utility location as well as coordinating material orders and deliveries while working closely with the city crews installing sewer pipe and sewer structures. In addition, Patrick was responsible for compiling daily progress reports, updating schedules, inspecting on-going work, providing technical assistance, preparing record drawings, and coordinating utility involvement.

Resident Engineer for 2019 Sewer Lining Program – South - Chicago Department of Water Management (CDWM), IL

The Sewer Lining Program consists of lining approximately 15 to 25 miles of sewer mains and catch basin outlets per year around the City located south of Roosevelt Road. This includes cleaning and lining of manholes, catch basins, and inlets with a resin impregnated felt tube cured-in-place liner. As part of the program, all sewers to be lined are cleaned, video inspected, evaluated, point repairs performed as needed, lined and final video inspection performed. Patrick served as a Resident Engineer for the cured in place sewer lining. As Resident Engineer, he was responsible for advance site reviews, oversight of contractor operations to verify compliance with contract requirements, review of material inspection and testing, review of as-completed video inspection, and overall tracking of quantities for payment.



YEARS OF EXPERIENCE

10

EDUCATION

BS, Civil Engineering, Bradley University

LICENSE

Engineer Intern: Illinois

CERTIFICATIONS

OSHA 8 Hr. - Confined Spaces - Construction Training

Illinois DOT (IDOT) Document of Contract Quantities #19-15514

Erosion and Sediment Control Workshop Module 1: Fundamentals Module 3: BMP

Confined Space Entry



Beau Bradley

GIS Project Manager

PROFESSIONAL EXPERIENCE

Beau has over two decades of experience as a GIS professional with deep practice in private, public, non-profit and academic sectors. He has a depth and range of experience deploying GIS for operational solutions and providing decision support for executives, policy makers and project managers. He has managed projects focused on asset data collection and quality assurance, site location spatial analysis, and application development.

RELEVANT EXPERIENCE

GIS Specialist for PAWC, GIS Services for Lead-Based Water Infrastructure, PA

Arora supported the development and implementation of a GIS Strategy to support the research and identification of Pennsylvania American Water Company (PAWC) customers that likely had lead-based water infrastructure. Arora's scope of services was provided virtually by Arora geospatial staff and included gathering, organizing, and analyzing parcel data from 36 counties and PAWC customer data. Arora provided a list of parcels and maps by municipality to support field investigation. Arora then coded PAWC GIS lines or points with an attribute to identify those that were investigated and assumed to contain lead. Arora developed a revised list based on field investigation that was then used to update applicable PAWC GIS line/point attribute. Arora worked closely with PAWC to develop project schema.

GIS Specialist for San Diego County Regional Airport Authority (SDCRAA), GIS Programming and Application Development Services, SDCRAA Airport, San Diego, CA

Arora provided Prime consultant services for San Diego County Regional Airport Authority (SDCRAA) to configure and deploy an ArcGIS OnLine (AGOL) application. The AGOL identified potential obstacles to navigable airspace around San Diego County airports. SDCRAA frequently received inquiries as to whether proposed permanent (e.g. buildings) or temporary (e.g., cranes) would penetrate Obstruction Identification Surfaces (OIS) designed to protect the safety of airspace around San Diego International Airport (SAN). Arora provided Geographic Information System (GIS) web applications that enabled stakeholders to perform precise and independent analysis.

GIS Specialist for City of Atlanta, Department of Aviation, ArcGIS Indoors, Hartsfield-Jackson Atlanta International Airport (ATL), Atlanta, GA

This was a multi-year contract with several operation use cases identified and defined to leverage the ArcGIS Indoors data to support maintenance, operations, properties, security, and other departments in a variety of scenarios. ArcGIS Indoors data is the foundation which ATL staff continue to leverage through stakeholder engagements to support an ever expanding group of GIS users within their organization. Arora migrated ATL's adjusted CAD data into the ArcGIS Indoors Information Model (AIIM). Numerous AIIM feature classes were created during this data development effort, and each set of features was symbolized based on industry best practices. Arora published data to web and mobile applications to demonstrate the POI search and wayfinding capabilities using Esri's configurable ArcGIS Indoors templates.

GIS Specialist for Paine Field Airport (PAE), GIS Services and Data Management System Implementation, Paine Field Snohomish County Airport (PAE), Everett, WA

Arora provided Prime GIS services to Snohomish County, Washington for the development of its GIS Program at Paine Field Airport (PAE). The Arora team completed a strategic plan for an integrated data management solution for the airport. As a result of this plan, Arora provided services that included several aspects of data management and application development. For the development of the GIS and CAD standards, best industry practices and Arora's experience were applied to align with and extend beyond the FAA's AGIS schema definition and mapping requirements for specific GIS feature classes, such as utilities and floor plans. Arora collected and used CAD files discovered during data assessment to develop a series of master (mCAD) drawing files to capture information related to PAE's floor plans, stormwater, roadway signage, and properties via Exhibit A. Next, Arora developed FMWs configured and designed to convert specified CAD geometry and objects created into GIS feature classes for loading into the mGDB developed for PAE.



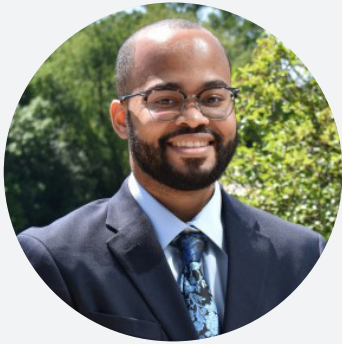
YEARS OF EXPERIENCE

20+

EDUCATION

MA, Geography, Temple University

BS, Political Science & History, University of Scranton



William Brown, EIT



Construction Management Inspection Staff

PROFESSIONAL EXPERIENCE

William has over three years of experience in multiple disciplines of engineering including transportation, geotechnical, environmental, and general civil projects. Responsibilities have included but are not limited to technical assistance, surveying assistance, and design.

William has experience assisting clients from state, municipal and private facilities. He is developing skills, understanding, and experience in trenchless sewer rehabilitation, infrastructure condition assessments, surveying, civil site and utility design, and construction inspection. Equipment experience includes nuclear density testing, Trimble GPS and Total Station, and confined space entry equipment. Software experience includes MicroStation and AutoCAD Civil 3D.

RELEVANT EXPERIENCE

City of Milwaukee, Milwaukee Water Works, 2024 Water Main Replacement | Milwaukee, WI

William performed survey tasks and lead design efforts for the City of Milwaukee in the relay of 14,480 linear feet of 8-inch and 6-inch of water main. Survey included the full topographic survey via total station and GPS for site locations through the full corridor (City ROW) and gathering information on existing sanitary, storm, and water utilities. Design includes processing survey data in AutoCAD Civil 3D and translating data into profile sheets in MicroStation.

City of Milwaukee, Milwaukee Water Works, 2023 Water Main Replacement | Milwaukee, WI

William performed survey tasks and lead design efforts for the City of Milwaukee in the relay of 17,820 linear feet of 8-inch and 6-inch of water main. Survey included the full topographic survey via total station and GPS for 22 site locations through the full corridor (City ROW) and gathering information on existing sanitary, storm, and water utilities. Design includes processing survey data in AutoCAD Civil 3D and translating data into profile sheets in MicroStation.

City of Mequon Sewer Inspection | Mequon, WI

William performed construction inspections for the City of Mequon for Riverland Drive Lift Stations "H" and "F", Sonde location of sanitary sewer laterals, installation of cleanouts for City Right-Of-Way and private residence, and grouting of sanitary sewer laterals. Will also performed survey task in addition to the location of sanitary sewer laterals and installation of cleanouts for the City of Mequon Riverland Drive Lift Stations "H" and "F".

City of Milwaukee Water Works, Howard Ave Purification Plant | Milwaukee, WI

Staff Site Engineer responsible for assisting with the survey and civil engineering for the pavement condition assessment, storm sewer condition assessment, and design plans. Deliverables provided to the city are 50%, 90%, and Final Plans and Specs and construction estimates. Along with these deliverables, Bloom completed a site topographic survey for the pavement area on site. Standards from the National Association of Sewer Service Companies (NASSCO) were followed to complete the CCTV assessment of the storm sewers on site, along with preparing the condition assessment report. On-site, there were approximately 3,00 linear feet of storm sewer ranging from 6" to 72" in diameter CCTV'd and analyzed.

DFD/WHS, Sanitary and Storm Sewer Repair Project, Wade House Historic Site | Greenbush, WI

William was the Civil Staff Engineer responsible for assisting the Engineering Design and Construction Management Teams on a Department of Facilities Development (DFD) project on the Wisconsin Historical Society's (WHS) Wade House Historic Site in Greenbush Wisconsin. The intent of this project was to evaluate the condition of existing storm and sanitary sewer infrastructure, determine sources of inflow and infiltration (I/I) into the sanitary sewer system, propose repairs, oversee constructions efforts, and evaluate the pre/post rehabilitation I/I reduction. The project included an evaluation of 1,962 LF of PVC sanitary sewer main, 1,167 LF of ductile iron sanitary laterals, 10 concrete sanitary structures, 866 LF of concrete storm sewer pipe, and 8 concrete storm structures. No as-built records were available for this site. The Bloom team led sub-contractor services for CCTV and flow monitoring efforts to aid in the design and system analysis. Will prepared all the plan sheets for the proposed improvements and provided onsite inspection of all construction efforts.

YEARS OF EXPERIENCE

3

EDUCATION

BS, Civil Engineer, Marquette University

LICENSE

Engineer-in-Training:
Wisconsin (#1515207)

CERTIFICATIONS

NASSCO ITCP CIPP, 2021

MMSD Pipe Fusion, 2022

NASSCO PACP | MACP | LACP,
2022



TYLin

TYLin.com