Hazen

Responsive Local Team

Cane Run
Town Branch
Lexington
North Elkhorn
Wolf Run
South Elkhorn
West Hickman
East Hickman

Proposal For

Sanitary Sewer Remedial Measures Plan Program Management Consulting Services

RFP #56-2022 | October 7, 2022

Hazen and Sawyer
230 Lexington Green Circle, Suite 520
Lexington, KY 40503 • 859.219.1126

October 7, 2022

Mr. Todd Slatin, Director
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, 3rd Floor
Lexington, KY, 40507

Re: Proposal for Sanitary Sewer Remedial Measures Plan Program Management Consulting Services (RFP #56-2022)

Dear Mr. Slatin:

Hazen and Sawyer (Hazen) is pleased to submit our Proposal for Sanitary Sewer Remedial Measures Plan Program Management Consulting Services. Hazen is solely focused on water pollution control, providing safe drinking water, and stormwater management services; and is uniquely qualified in program management related services.

Hazen has significant experience managing this program for the last 11 years, as well as programs for other communities with similar scope and complexity. We are retaining our experienced Responsive Local Team that has a history of successful Remedial Measures Plan (RMP) project implementation and a wealth of institutional knowledge. As DWQ's current program manager, we are highly knowledgeable about LFUCG's RMP and Consent Decree, and DWQ's infrastructure and staffing challenges.

As outlined on our organizational chart, for this project we are proposing Kurt Zehnder as the overall Project Manager as well as the Project Implementation Manager where he will provide direct oversight of all the individual RMP projects. I will serve in the Program Manager role. Both Kurt and I have successfully served DWQ in similar roles on the current program.

Our project management team will be supported by Hazen's deep bench of engineers and technicians that will augment DWQ staff by serving as project managers for the individual RMP projects and providing general program management services. All Hazen's project managers have experience managing RMP projects and will continue to provide the high-quality project management services that DWQ has grown to expect.

To achieve success on this phase of the program, Hazen will continue to focus on the following five broad objectives:

- **Protect the Schedule**: Hazen's team will validate the schedule revisions for all remaining RMP projects, proactively take steps to accelerate the schedule for the remaining projects, and initiate new projects sooner in the schedule to allow more time for full implementation.

- **Optimize the Budget**: Hazen's focus will be to optimize the budget of every RMP project in order to continue to keep the overall program costs under budget.

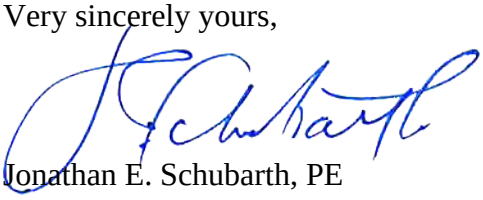
- **Public & Regulatory Issues**: Hazen will continue to assist DWQ in the coordination with the individual property owners and stakeholders affected by RMP construction activities and will continue to coordinate with state regulators with respect to individual project reviews and approvals.

- **Reporting and Tracking**: Hazen will continue to assist DWQ on the quarterly and annual reporting requirements associated with the Consent Decree. Additionally, Hazen is proposing to introduce improved project tracking via several visualization dashboards.

- **Quality Control**: Hazen will continue to focus on quality control measures which include 1) performing the DAO workshops prior to initiation of project design, 2) ensuring that each design consultant performs their own quality control reviews prior to every milestone submittal, and 3) conducting peer reviews at specific project milestones during design.

We very much appreciate the opportunity to present our Proposal to LFUCG for this project. As you review our Proposal, we hope that you will agree that Hazen's extensive experience on this program makes Hazen uniquely qualified to continue to serve DWQ with this critical Consent Decree Program.

Very sincerely yours,



Jonathan E. Schubarth, PE
Vice President

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Section 1 | Firm Overview

Section 1

Firm Overview

Hazen and Sawyer is a nationally-recognized environmental engineering firm, built on a strong foundation of technical and professional excellence. We provide the strength and depth of a national firm, along with the local presence and relationships that will make a difference to the successful outcome of Division of Water Quality (DWQ) Sanitary Sewer Remedial Measures Program (RMP).

Water Environment Specialists

Hazen has a staff of more than 1,400 professional engineers, scientists, and support personnel who specialize in a wide range of engineering disciplines focused in the field of water and wastewater. Our professionals are experienced in the design of sanitary sewer systems, sanitary sewer treatment plants, pumping stations, SSO mitigation, wet weather storage tanks, stormwater management systems, and rehabilitation plans.

Since our founding in 1951, we have focused on helping our clients provide safe drinking water to their customers, control water pollution and its effects on the environment, and address urban stormwater management issues. Our focus brings us extraordinary challenges and makes us home to many of the world's most knowledgeable and experienced environmental engineers and scientists.

The firm has grown steadily over the years, from the original six-person office established by Richard Hazen and Alfred W. Sawyer to a present total staff of more than 1,400 throughout 61 offices. Hazen maintains a growing presence throughout the Midwest states. Our Cincinnati office serves as the Regional Headquarters, with branch offices in Lexington; Louisville; Nashville, TN; Memphis, TN; Chattanooga, TN; Knoxville, TN; Columbus, OH; Akron, OH; Cleveland, OH; Detroit, MI; and Minneapolis, MN.

Hazen's Lexington and Louisville offices serve the central Kentucky region, and draw on ample resources from all over the Midwest to aid in the timely execution of projects.

all things water®

According to ENR, Hazen has continually ranked as one of the top firms devoted entirely to water and wastewater.

Industry Experts

Known for providing top technical expertise, we maintain the industry's largest research portfolio and help our clients make smart, forward-thinking decisions.

Trusted Advisors

Our client engagement typically lasts decades, as we help a community keep pace with changing regulations, shifting populations, and advances in technologies.

Areas of Service

Stormwater | Water Resources | Conveyance | Drinking Water | CSO | Reuse | Wastewater | Environmental Planning | Biosolids

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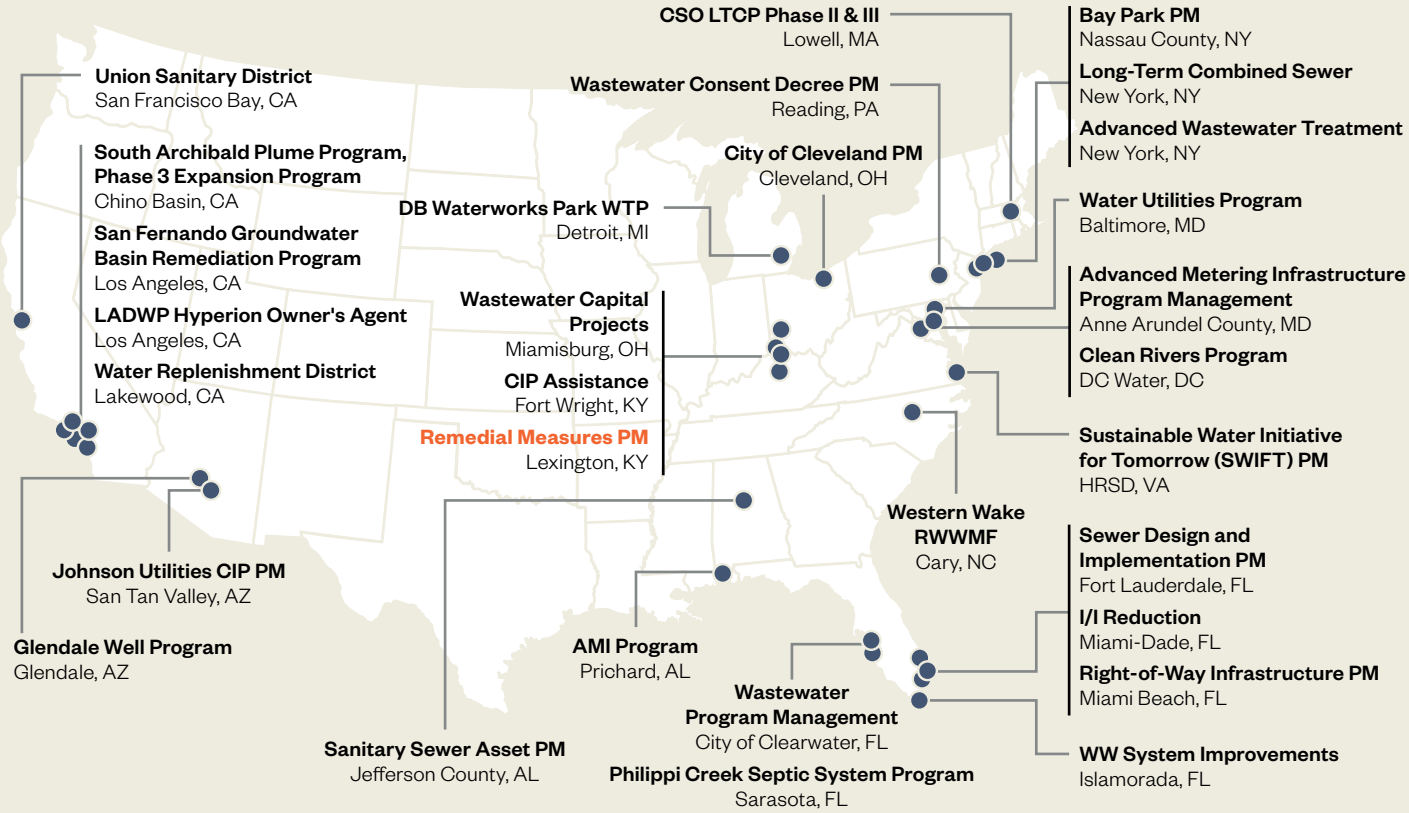
Technical Capabilities

Hazen has maintained some of the industry's leading expertise in wastewater collections, wet weather storage, and pump station designs for over 70 years. We have completed thousands of successful projects throughout the U.S. and abroad, often merging our expert's knowledge with the latest technologies. Many of the firm's technical specialists in these areas are located in the offices directly serving the RMP program and are well-known to DWQ staff.

Program Management Proficiency

Hazen's water focus and experience managing complex programs for some of the nation's largest utilities has made us an industry leader in collections and wastewater infrastructure program management and capital planning implementation. Hazen is adept at managing all elements of large-scale capital improvement programs. The map below points out over 30 programs where we have served clients as their program manager.

Our Program Management Business Group Coast-to-Coast Experience



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Through these programs, we have gained the specific tools and tactics to manage the scheduling, budgeting, and public outreach to facilitate successful capital program implementation. Our detailed reporting and tracking will create an advance roadmap of design, outreach, permitting, and funding milestones for both DWQ staff and other stakeholders. Further, we understand the heightened importance of scheduling and funding with compliance-driven programs and are skilled at navigating these added challenges in today's post-COVID world.

History with LFUCG

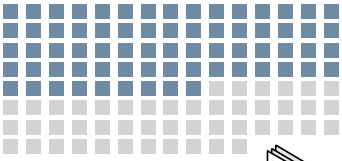
We are proud to include LFUCG among our program management clients. Hazen has served as Program Manager of the RMP program for the past 11 years. Over this time, we have developed a strong working relationship with DWQ staff and gained a deep understanding of your program, infrastructure, and challenges.

When the RMP program initiated in 2011 , the LFUCG collection system had 111 reoccurring sanitary sewer overflows (SSO). Since this time, the dedicated DWQ / Hazen team has successfully completed 69 of 116 capital projects, including the construction of over 73 million gallons (MG) of wet weather storage (WWS) through planning, design, and construction of seven wet weather storage tanks throughout the collection system. These seven tanks, the accompanying pump stations, and the miles of interceptor sewer replacements have led to 78 of 111 SSOs abated as of June 30, 2022 and over 1 billion gallons of wastewater out of the creeks in Lexington. Further confirmation of program success comes from positive comments we've received from local citizens groups, stating that testing of the local waterways shows a decrease in E-coli and an improvement of the water quality since the start of the program.

RMP Program Accomplishments

78 of 111 SSOs abated

> 1 Billion Gallons of wastewater stored and kept out of the creeks of Lexington



69 of 116 capital projects completed

> 73 Million Gallons of WWS constructed

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Characteristics Required for Successful LFUCG Program Management

Our experience as RMP Program Manager has given us insight into the specific qualifications required to deliver a highly successful program to LFUCG. Our proposal highlights all skills and challenges we've overcome before, and our plan for progress during the next phase of the RMP. Below are the RFP selection criteria, the strength of the Hazen team for each criterion, and the corresponding section of the Proposal in which we prove that strength.

RMP Requirement / Criteria	Hazen's Strength	Section in the Proposal Where we Demonstrate Hazen's Strength
Estimated Cost of Service	History and in-depth experience with LFUCG's RMP Program eliminate any need to "get up-to-speed" which will result in significant cost savings to DWQ. Additionally, Hazen is offering competitive hourly rates that are comparable to other firms in the industry.	Hourly Rates and Past Performance
Specialized Experience and Technical Competence	In-depth experience in both large-scale program management and the technical areas of the individual RMP projects.	Firm Qualifications and Project Approach
Demonstrated Capacity of the Firm	Uniquely staffed to provide the required capacity of experienced engineers required for the Program Management services.	Project Team and Appendix A
Past Record and Performance	Developed all required protocols, procedures, and structural elements necessary for successful program implementation.	Past Performance
Familiarity with Details of the Project	Developed the original RMP document that identified the projects necessary to meet Consent Decree compliance. Served as Program Manager for over a decade. As Program Manager, continued to complete Preliminary Engineering Reports (PER) and Conceptual Design Technical Memorandum (CDTM) to guide upcoming projects in the RMP.	Project Approach and Past Performance
Degree of Local Employment	Experienced Lexington-based team with widespread support throughout the region and the firm.	Local Office

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Section 2 | Project Team

Section 2

Project Team

Hazen's experienced, highly responsive Program Management Consultant team features a diversified staff to continue to meet all LFUCG's program goals. Our Lexington-based team, known and trusted by DWQ's RMP staff, is also supported by leading national wastewater collection system experts.

Hazen's proposed Program Management Consultant (PMC) team has extensive experience with DWQ's current RMP program and associated RMP projects. This knowledge and experience provides Hazen with unique insight into how DWQ operates, and the level of quality and dedication expected by DWQ. For DWQ, this insight will translate into no learning curve for Hazen staff, an immediate continuation of our close partnership with DWQ, and cost-effective implementation.

The Hazen team will be led by Kurt Zehnder in our Lexington office. Kurt will also serve as the Project Implementation Manager where he will oversee the individual Project Managers and be responsible for the implementation of all RMP-related projects. Jon Schubarth will serve as our Project Director where he will oversee the project's management, uphold adequate quality control reviews, and ensure Hazen's team has all the resources necessary to successfully deliver this program. Jon will also serve as the RMP Program Manager with overall responsibility for the successful planning, monitoring, reporting, and controlling of this project.

Our experienced, local project management team will be supported by Hazen's deep bench of engineers that will augment DWQ staff and serve as Project Managers for the individual RMP projects. Kurt Zehnder, Seth Bradley, Mike Asalon, Worth Ellis, and Tyler Bridges all have experience managing RMP projects and will continue to provide the highest quality project management services that DWQ has grown to expect.

Once projects are in construction, the project managers will be supported by Odus Baker, who will provide general oversight during the construction of all RMP projects working with the various resident project representatives (RPRs) assigned to the projects to ensure all projects are meeting the specific RMP details and specifications. Hazen has also identified several individuals that could (if needed) serve as RPRs on select RMP projects.

For the purposes of this proposal, we are only highlighting our local and regional resources available for this project. However, Hazen is a national

All individual project managers on Hazen's team have the capacity to manage RMP projects, and will oversee individual design consultants to ensure integrated deliverable completion from project inception through construction and operation.

Jon and Kurt's experience and roles are further defined and summarized on the next page – Cohesive Project Management.

The organization chart for the Hazen team is included on page 3 of this section.

Further information on our Kentucky-based and nearby supplemental resources are detailed in Section 5: Local Office.

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firm with national expertise in wastewater collection systems. If, during the execution of this Program, the need for Hazen's national experts arises, DWQ will have full access to all Hazen experts.

Cohesive Project Management

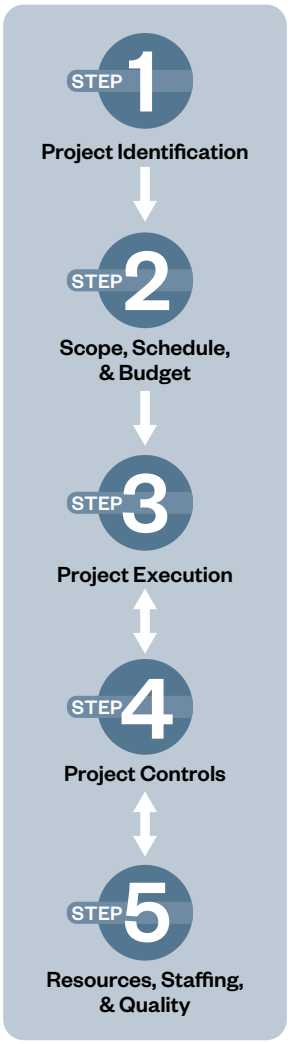
As previously mentioned, Kurt Zehnder will serve as overall Project Manager for the PMC team and serve as the primary point of contact for DWQ's RMP staff. Kurt will also serve as the RMP's Project Implementation Manager. Kurt has over 18 years of experience in the planning, design, and construction of wastewater projects including collector and interceptor sewers, pump stations, wet weather storage tanks, and wastewater treatment plants. Additionally, over the last 5 years Kurt served as the Assistant Project Manager for DWQ's RMP Implementation Program and was an integral member of the design team for two of the largest RMP projects designed under the Program.

As Project Implementation Manager, Kurt will provide direct oversight on all individual RMP projects. As a part of the PMC team, Kurt will oversee all designs, milestone peer reviews, standard documents, and construction oversight for all individual RMP projects.

Jon Schubarth will serve as both the Project Director and RMP Program Manager. Jon has over 29 years of experience in both private sector consulting and public sector utility engineering. As a public sector utility manager, he managed, designed, and operated public water and wastewater systems including implementation of large capital improvement programs. As a consultant and for the last 11 years, Jon has served as the DWQ Sanitary Sewer Program Manager, Project Manager for DWQ's RMP Implementation Program, and the Project Manager for DWQ's Capacity, Management, Operations, and Maintenance (CMOM) Program.

As the Program Manager for the PMC team, Jon will continue to oversee all RMP Programmatic Services. Specifically, Jon will oversee all RMP program scheduling, project tracking, and required Consent Decree Quarterly and Annual Reporting. Additionally, Jon will also oversee all conceptual designs for the individual RMP projects and all necessary procurement.

Project Management Approach



Having worked successfully on the current RMP Implementation Program for several years, Jon and Kurt have seamlessly supported DWQ during two RMP Program Manager staff transitions and are well-suited and prepared to continue to serve DWQ through the final years of this critical Consent Decree program.

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Consultants
- Hazen and Sawyer
- Third Rock (WBE)
- Civil Design, Inc. (WBE)
- Jackson Group (VOSB)
- Geotechnology

Locations
- Lexington, KY
- Louisville, KY
- Cincinnati, OH
- Columbus, OH
- Nashville, TN
- Fairfax, VA
- Birmingham, AL

Project Management

Project Director — Jon Schubarth

Project Manager — Kurt Zehnder

Technical Advisor — Sean FitzGerald

QA / QC — Ross Horvath

*Along with our strong local staff, **over 90 water professionals** within a 90 minute drive of LFUCG project sites are available to support this program as needed.*

Program Manager

Jon Schubarth

PROGRAM MANAGEMENT SERVICES

Procurement
- Jon Schubarth
- Kurt Zehnder

Funding Assistance
- Kurt Zehnder
- Rhonda Baker

Reporting
- Jon Schubarth
- Kurt Zehnder

Scheduling
- Mike Asalon
- Renato Nojadera
- Daniel Honeycutt

Conceptual Designs
- Worth Ellis
- Tyler Bridges

Project Tracking
- Mike Asalon
- Vivek Sai
- Marissa Golgosky

Project Implementation Manager

Kurt Zehnder

INDIVIDUAL PROJECT MANAGERS
- Kurt Zehnder
- Tyler Bridges
- Mike Asalon
- Seth Bradley
- Worth Ellis

CONSTRUCTION SERVICES

Oversight
- Odus Baker

RPR (As Needed)
- Jim Dierig
- Chip Gill

DESIGN PEER REVIEWS

Process / Mechanical
- Tom Schaffer
- Bo Copeland

Instrumentation and Control
- Jason Advani

HVAC / Plumbing
- Richard Van Dyke
- Thomas Nolan

Electrical
- Brett Bueltel
- Nathan Stewart

Structural
- Will Leadbitter
- Parker Seuss

Support Services

CAD
- Kevin Robinson

Environmental/ Permitting/ Cultural Resources
- Jackson Group
- Third Rock

GIS
- Marissa Golgosky
- Evan Nathan

Surveying
- Civil Design, Inc.

Geotechnical
- Geotechnology

Trenchless
- Sean O'Rourke

PACP / MACP
- Paula Glasford

A full list of states in which staff are licensed as professional engineers can be found on resumes.

Responsive Local Team

Hazen is offering the same responsive local team that has provided long-term consistency to DWQ's RMP implementation.

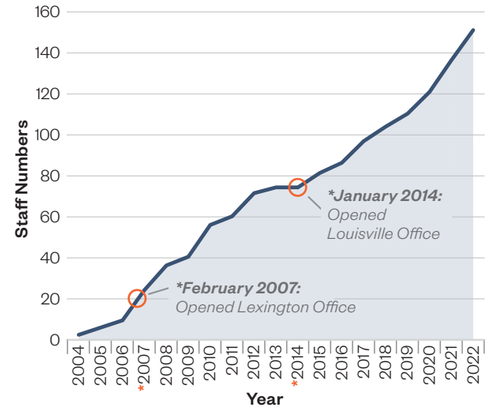
Hazen was the primary author of the three Sanitary Sewer System Assessment (SSSA) Final Reports and three wastewater system and WWTP Remedial Measures Plans (RMPs); therefore, has served DWQ with their RMP efforts since its inception almost 14 years ago.

For the last 11 years Hazen has served as DWQs Program Management Consultant (PMC) assisting with the implementation of the RMP projects. Through that time, Hazen has supported DWQ during two RMP Program Manager staff transitions while maintaining program stability and without slowing the program down.

Hazen's growth in the Midwest Region has been consistent over our 15-year local history (see chart below). Our Kentucky growth follows a similar trend, demonstrating the firm's commitment to the development and advancement of the bluegrass region and providing additional expert resources to all our local clients.

Hazen regional staff, and the firm as a whole backs the PMC team in their commitment to continuing to serve DWQ to our full capacity.

Hazen and Sawyer's Consistent Midwest Growth



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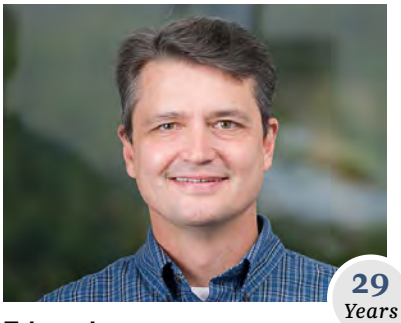
Jon Schubarth, PE

PROJECT DIRECTOR



29 *Years*

Education

MSEnvE, Georgia Institute of Technology, 1993

BSE, Georgia Institute of Technology, 1992

Licenses

Professional Engineer: KY, NY

Project Commitments

- 20% LFUCG RMP
- 5% LFUCG Non-RMP
- 75% Non-LFUCG

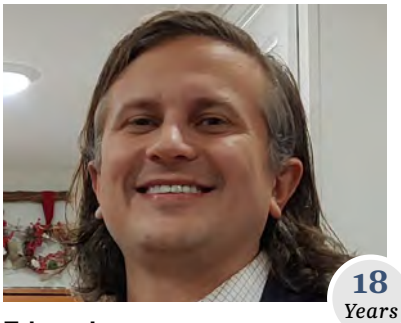
With nearly 30 years of work dedicated to wastewater, collections, pumping, and capital planning work, Jon has been integral to Hazen's long-term delivery of high-quality initiatives for DWQ.

Key Experience

- Project Manager for several large LFUCG initiatives, including the previous LFUCG RMP Implementation Services, Program Management Services, and CMOM Implementation Services projects
- Managed numerous capital improvement planning and wastewater system operations projects for both Bowling Green and Winchester, KY
- Implemented capital plans for both Winchester and Warren County as a public sector engineer

Kurt Zehnder, PE

PROJECT MANAGER



18 *Years*

Education

BSCE, University of Kentucky, 2003

Licenses

Professional Engineer: KY, OH

Project Commitments

- 45% LFUCG RMP
- 5% LFUCG Non-RMP
- 50% Non-LFUCG

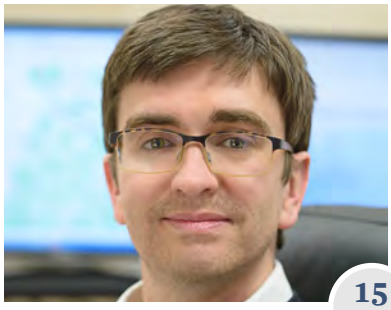
Kurt is an experienced project manager specializing in collection system planning and design. His work includes interceptor and collector sewers, wet weather storage tanks, pump stations, and wastewater treatment.

Key Experience

- Previously managed over 17 projects for LFUCG RMP Implementation Services
- Past designs include duplex, triplex, and 4-plex sanitary pump stations and force mains within Kentucky and Ohio. Integral to the design and installation of equalization basins for Wet Weather Flow Storage and Pumping Facilities in Lawrenceburg, Liberty, and at the Corbin, KY WWTP to control peak wet weather overflows

Seth Bradley, PE

INDIVIDUAL PROJECT MANAGER



15 *Years*

Education

MSCE, University of Kentucky, 2007

BSCE, University of Kentucky, 2005

BA, Northern Kentucky University, 2004

Licenses

Professional Engineer: KY

Project Commitments

- 25% LFUCG RMP
- 0% LFUCG Non-RMP
- 75% Non-LFUCG

Seth has 15 years of experience in collection system modeling, design, construction, and operations, and has assisted with the implementation of LFUCG's RMP for over 5 years.

Key Experience

- Served as a Project Manager for the LFUCG RMP Implementation Services
- Assisted several utilities in the development of plans to address consent decree mandates, and implement and track progress towards those objectives
- Served as Project Engineer for the implementation of CMOM related programs mandated by LFUCG's Consent Decree

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Tyler Bridges, PE

INDIVIDUAL PROJECT MANAGER

11 *Years*

Education

MEES, University of Florida, 2013

BSCE, University of Kentucky, 2010

Licenses

Professional Engineer: KY

Project Commitments

- 30% LFUCG RMP
- 0% LFUCG Non-RMP
- 70% Non-LFUCG

Tyler has managed and designed projects relating to wastewater pump stations, force mains, interceptor sewers, collector sewers, and treatment plants, as well as water distribution, pumping, and treatment facilities.

Key Experience

- Served as a Project Manager for the LFUCG RMP Implementation Services and has significantly contributed to over 10 RMP projects
- Completed several preliminary engineering reports and conceptual design memorandum for upcoming RMP projects
- Served as Project Manager on several similar projects throughout Kentucky

Mike Asalon, PE

INDIVIDUAL PROJECT MANAGER

17 *Years*

Education

BSCE, University of Kentucky, 2003

Licenses

Professional Engineer: KY, TX, VA, MD, DC

Project Commitments

- 30% LFUCG RMP
- 5% LFUCG Non-RMP
- 65% Non-LFUCG

Mike has participated in the RMP Program Management as a Project Manager on several projects that are currently in the design phase as well as assisting on technical memos and reports as requested by LFUCG.

Key Experience

- Served as Project Manager on several projects for LFUCG RMP Implementation Services
- Provided LFUCG with evaluations for the Corman/ Louden/7th Street Trunk and Wet Weather Storage projects included on the RMP project list
- Assisted LFUCG in compiling the 2022 Consent Decree Schedule Extension Report

Worth Ellis, PE

INDIVIDUAL PROJECT MANAGER

15 *Years*

Education

MBA, Indiana Wesleyan University, 2015

BSCE, University of Kentucky, 2007

Licenses

Professional Engineer: KY

Project Commitments

- 25% LFUCG RMP
- 5% LFUCG Non-RMP
- 70% Non-LFUCG

Worth has experience with handling project design and management from beginning through construction. He succeeded as a design engineer on several RMP projects including the UK Trunks CDE project through the middle of Lexington and UK's campus.

Key Experience

- Worked in the RMP at LFUCG DWQ as a Project Engineering Coordinator
- Developed the Plan Production Standards for the LFUCG RMP Implementation Services
- Project Manager for design and construction on three Remedial Measures Program projects and assisted as a Project Engineer prior to that on one of the first projects bid in the program

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Marissa Golgosky, EIT

GIS/MAPPING

2 *Years*

Education

BS, Biological Systems Engineering, University of Nebraska, 2020

Licenses

Engineer-In-Training: KY

Project Commitments

- 35% LFUCG RMP
- 0% LFUCG Non-RMP
- 65% Non-LFUCG

Marissa has Civil3D, GIS, and modeling experience managing data, geoprocessing data, and creating figures to accurately represent data. Marissa is located in the Lexington Office and is ready to assist the RMP team with any mapping or data analysis requests.

Key Experience

- Assisted with several tasks on the LFUCG RMP Implementation Services over the past two years on several different projects
- Created maps and conceptual design drawings for RMP projects
- Assisted in the creation and perpetual updating of the RMP Standard Details, General Notes and Project Specific Notes

Daniel Honeycutt, EIT

SCHEDULING

6 *Years*

Education

BSCE, University of Kentucky, 2021

BS, Biology, University of Kentucky, 2012

Licenses

Engineer-In-Training: KY

Project Commitments

- 40% LFUCG RMP
- 5% LFUCG Non-RMP
- 55% Non-LFUCG

Daniel has experience in water resources engineering with projects on conveyance and hydraulics that utilized modeling software and scheduling. For the RMP, he helped on the schedule and planning modifications, and has assisted in the creation of preliminary design reports and CDTM documents on RMP conveyance and wet weather storage facility projects.

Key Experience

- Completed updates to Standard Detail Drawings and Specifications for RMP projects in response to market changes, client preferences, and updated technologies
- Preliminary design of alternatives on several projects for LFUCG
- Assisted in the RMP planning and schedule revisions and time extension submittal to EPA

Odus Baker

CONSTRUCTION MANAGEMENT

14 *Years*

Education

BS, Landscape Architecture, University of Kentucky, 2009

Project Commitments

- 95% LFUCG RMP
- 0% LFUCG Non-RMP
- 5% Non-LFUCG

Odus has experience with field inspections of sanitary sewer, storm sewer, detention basins, erosion control, and storm water facilities. His responsibility is to observe, document, and report to design Engineers and Owners of the proper construction, installation, and backfilling of sanitary sewer as per approved construction drawings and RMP specifications.

Key Experience

- Trusted partner on all construction activities
- Completed construction RPR services on over 15 RMP projects
- Provided weekly project status updates to the RMP team and LFUCG staff
- Assisted in the RMP RPR training class

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MWDBE Involvement

Hazen is committed to providing properly skilled technical staff for every project and every role. We are also committed to meeting LFUCG's MWDBE participation goals by including select DBE and Veteran-owned Small Business (VOSB) firms on our PMC team. As with the past and current DWQ projects, our MWDBE subcontractors will contribute to critical elements of this project. Hazen strives to help our partners build capacity and to assist them in developing staff resources through work on our projects. For this program, Hazen will be supported by:

- Civil Design, Inc. (WBE): Surveying Services
- Jackson Group (VOSB): Environmental and/or permitting assistance, cultural resources
- Third Rock Consultants (WBE) Environmental permitting assistance, cultural resources

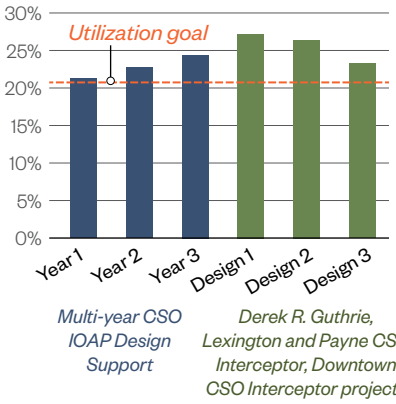
Hazen has a strong track record in meeting MWDBE goals with LFUCG and other Hazen clients throughout the region. Examples include:

- Louisville MSD
- Cincinnati – GCWW and MSDGC
- Northeast Ohio Regional Sewer District (NEORSD)
- Columbus, Ohio Division of Sewerage and Drainage

Project-Specific Diversity Business Development Plan

In support of LFUCG's MWDBE Program, Hazen will team with the above firms to provide the services listed as required for specific RMP projects and requested by DWQ RMP staff. Our Project Manager, Kurt Zehnder, will be responsible for the implementation of the Diversity Business Development Plan. Where appropriate, and through effective project management and frequent communication, Kurt will involve our MWDBE partners in key project decisions, client meetings, and discussions. Throughout the project, Hazen will continue to evaluate further opportunities to expand our partner's roles.

Small Business Utilization



Hazen strives to exceed SBE utilization goals, such as this example of long-term partnerships with our subconsultants over multiple years and projects for Louisville MSD.

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Section 3 | Past Performance

Section 3

Past Performance

Hazen has extensive experience providing PMC Services throughout the firm. For LFUCG, Hazen has served as DWQ's RMP PMC for the last 11 years. Over that time, Hazen, in conjunction with DWQ RMP staff, has seen many accomplishments on which we can build future success, as well as challenges that we can address and improve in the future.

The Hazen team has extensive experience with DWQ's RMP and has proven success in Program Management, Design Management, Quality Control, and Construction Oversight; with an emphasis on designs that optimize operating cost and capital expenditures. Numerous protocols and procedures related to RMP project implementation were established and implemented on all DWQ RMP projects to track and ensure proper documentation of each project. Some of which have been implemented on other DWQ projects. Hazen consistently monitors and modifies these procedures to ensure the intent of the RMP program is being met in the most cost-effective and efficient manner.

Program Implementation Protocols and Procedures

Due to the large size and complexity of DWQ's RMP Program, Hazen assisted in the development of numerous protocols and procedures necessary for successful program implementation. Hazen contributed to the development and application of the following protocols and procedures for all RMP projects.

- The approved RMP identified projects that are very conceptual in nature and lacked enough detail to immediately move into detailed design. Therefore, Hazen assisted DWQ with project initiation and scoping. For the most complex projects, Hazen jointly conducts a **Design Alternative Optimization (DAO) Workshop** with DWQ staff in order to identify the key issues, concerns, and goals for an individual project. Upon completion of the DAO Workshop, Hazen codifies the findings in a **Conceptual Design Technical Memorandum (CDTM)** that is included in each Request for Proposal (RFP) and distributed to the various design consultants as a scope of work on which to base their proposals. This detailed project scoping ensures that the individual designs will meet the original intent identified in the approved RMP.
- Prior to initiation of any wet weather storage (WWS) tank or pump station designs, Hazen developed **"Guidance for Design – Wet Weather Storage Tanks, Pump Stations, and Flow Diversion Structures"** – commonly referred to as the Design Guidelines. These design guidelines are used by the design consultants to prepare Contract Documents for all WWS facilities and pump stations associated with the DWQ's RMP projects. The design guidelines ensure operational and design consistency for the RMP projects.
- Hazen provides **Peer Reviews** of the design consultant designs at various project milestones. These reviews ensure DWQ is receiving Contract Documents that meet their expected quality and the original intent of the project is being captured. Ensuring quality in the Contract Documents has

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proven to produce lower construction bids, fewer bidding questions and addenda during bidding, and fewer construction change orders during construction.

- Hazen assisted DWQ with the **Easement Acquisition Protocol** needed to provide consistent acquisition and documentation of easements required for the construction of RMP projects. The easement protocol has proven effective for accurately documenting the easement acquisition process. The pandemic changed the difficultly of easement acquisition, and Hazen is consistently working with DWQ to refine and improve the easement acquisition process in order to expedite easement procurement.
- Hazen developed a detailed and comprehensive **Project Closeout Checklist** that identifies 43 individual tasks that must be completed to properly closeout an RMP project after construction with DWQ and the Kentucky Infrastructure Authority (KIA) (as needed). In order to properly document the project, and ensure proper "hand-off" to DWQ's operations staff, the closeout checklist includes all items necessary to be completed by the contractor, the design consultant, and DWQ RMP staff. Hazen continues to update and refine this closeout checklist to ensure a consistent and proper project closeout.
- Hazen developed two plan sheets of **General Notes** that are applicable for all RMP projects. These general notes cover general construction related items that DWQ desires to see completed for every RMP project. Additionally, Hazen developed an Outline for Project Specific Notes used by the design consultant for each RMP project. This outline ensures that the designs of each RMP project address numerous project specific issues that have been experienced during the implementation of previous RMP projects. These general notes and project specific notes outline are updated as needed and distributed to the various design consultants for use or inclusion in their Contract Documents.
- Hazen developed and updates **Standard Specifications** for use in all RMP projects. Standard specifications were developed for line projects, WWS tanks, and pump station projects, as well as separate front-end documents for KIA funded projects (modified for new COVID-19 procedures) and projects funded solely by LFUCG. These standard specifications are updated as needed and distributed to the design consultants for use in their Contract Documents. Although created for RMP projects, design consultants are required to modify the standard specifications for their specific project(s).
- Hazen developed the **Tunneling Protocol** for all trenchless construction that is a part of any RMP project. Depending on the specific location, this protocol includes up to six standard specification sections based on tunneling method and specifies up to three phases of potential geotechnical investigation that are needed to reduce risk to LFUCG, identify the most cost-efficient and practical tunneling method for each site-specific location. The tunneling protocol is distributed to each design consultant for use during detailed design.
- Hazen assisted in the development of **General Plan Format Guidance Document** which identifies the software requirements, sheet layouts, and the general form and format of the design drawings for RMP projects. This document is distributed to each design consultant and required to be followed during the preparation of their Contract Documents and is another way Hazen strives to ensure consistency on the RMP projects.
- Hazen developed a **detailed report on Consent Decree Implementation** for DWQ that was submitted to the United States Environmental Protection Agency and the Kentucky Energy and Environment Cabinet which will likely result in a material modification to LFUCG's Consent Decree. In this report, LFUCG requested three primary items associated with the Consent Decree 1) Extension of the RMP's Full Compliance Deadline, 2) Elimination of Interim Milestones, and 3) Modification of Reporting Requirements.

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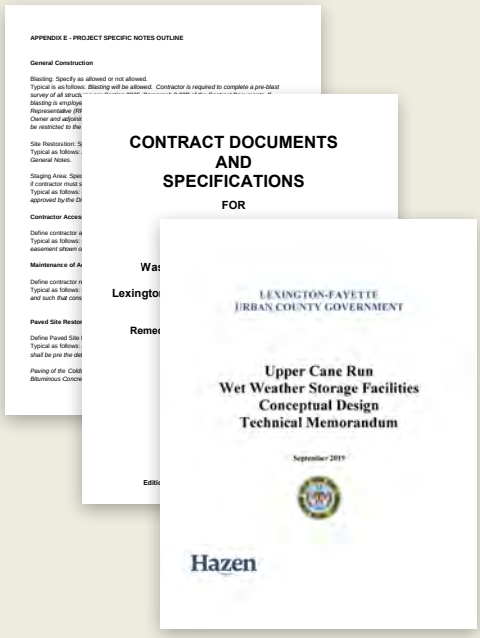

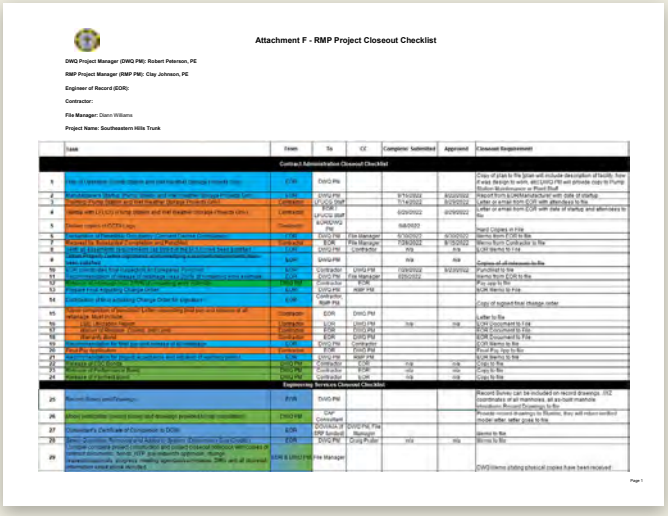

Some of the critical protocols and procedures that Hazen has helped to establish and that have had a tangible impact on the RMP program include the Design Alternative Optimization Workshop, the Conceptual Design Technical Memorandum, Design Guidelines, and the Closeout Checklist.

Cost Controls

During the initial development of the RMP it was assumed that DWQ would utilize below-grade cast-in-place concrete tanks to meet their WWS requirements. However, early in the RMP implementation phase, Hazen and the DWQ staff evaluated the various types of WWS tanks to determine the best tank type for DWQ. This evaluation considered initial WWS tank cost, ease of tank operation, long-term cost of tank maintenance, and speed of tank construction.

It was ultimately determined that above-ground prestressed concrete tanks were the most cost effective and easy to maintain tanks that could be constructed relatively quickly. To date, over 73 million gallons of WWS has been constructed and placed into service and LFUCG has paid approximately $1.84/gallon for the above ground prestressed concrete WWS which is under the original budgeted amount. DWQ has an 18 MG WWS currently under construction and approximately 14 MG of additional storage to be designed and constructed in the final years of the program. The program has seen cost increases on recently bid, conveyance, gravity sewer projects due to material pricing and supply issues. Hazen has and will continue to look for value engineering within the projects to help keep the Program under budget.

Additionally, though harder to quantify, cost savings have been realized due to the detailed peer reviews that have been conducted by Hazen for each RMP project. These peer reviews have resulted in better overall Contract Documents, more competitive bids, and fewer change orders.

To date, it is projected that DWQ is more than $104,180,000 under budget based on the original cost estimates in the RMP.

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Quality Control Measures

Hazen, in conjunction with the DWQ staff, has implemented strict quality control measures for all RMP projects. These quality control measures include:

1. Performing the DAO workshops (on select projects) prior to initiation of project design.
2. Ensuring that each design consultant performs their own quality control reviews prior to every milestone submittal.
3. Conducting peer reviews at specific project milestones during design.

Due to these quality control measures, the overall quality of the Contract Documents for the RMP projects is enhanced.

Reporting

As the current PMC for DWQ's RMP program, Hazen has completed all Quarterly and Annual Reporting required by LFUCG's Consent Decree. The quarterly reporting not only includes the RMP projects that are related to the collection system, but each quarter Hazen meets with DWQ staff that are implementing RMP-related wastewater treatment plant (WWTP) projects. Quarterly, Hazen solicits the status of the implementation of the WWTP projects and incorporates them with the status of the collection system projects.

Additionally, Hazen coordinates the required RMP portions of the Consent Decree annual report. Like the quarterly report, Hazen solicits input on the WWTP projects and incorporates the status of all RMP projects into the annual report.

Schedule Compliance

The original RMP developed an overall schedule laying out deadlines for design and construction for each RMP project including collection system, WWS, pump stations, and WWTP related projects. Since the completion of the original RMP schedule, Hazen has assisted DWQ with maintenance of this schedule and adjusted it several times based on approved material changes.

During the initial phase of implementation Hazen worked with the DWQ staff to plan; initiate; oversee the design, bidding, and construction; and properly report and close out of each RMP project.

In 2022 it became apparent that numerous project deadlines were not going to be met by the Full Compliance Deadline of 2026. The reasons for the schedule lapses are related to the global pandemic and include challenges with supply chain disruptions and material cost increases, workforce/labor shortages, and easement acquisition issues. Hazen recently assisted DWQ with a Consent Decree schedule extension request submission to EPA requesting an extension to 2030 (4 years) for the RMP program. In the **Project Approach** section, we will summarize how Hazen and DWQ staff have initiated plans to counteract these procurement and schedule issues.

We recognize the constraints on the schedule from resources and complexity of construction in congested areas and are reviewing alternate delivery strategies to expedite and accelerate project delivery.

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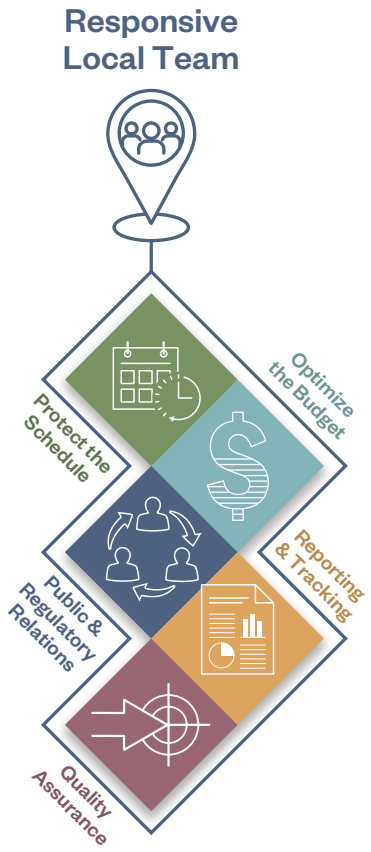
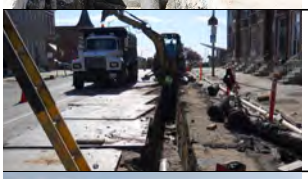
Similar Work

As highlighted in Section 1: Firm Qualifications, Hazen has extensive experience providing PMC services throughout the firm. Additionally, Hazen has had the opportunity to work on numerous capital program implementation projects for our clients. More specifically, the Hazen team being proposed to DWQ is the same team, with minor improvements, as the team that has been helping DWQ with RMP Implementation since the beginning of this program.

Our corporate, regional, and local experience with Program Management is featured in the table below and on the subsequent pages of similar projects. We have featured five relevant projects that illustrate Hazen's Program Management capabilities, state-of-the-art scheduling and tracking tools, and ability to provide tangible guidance to our clients. The following projects are described more fully on the following pages and represent the Program Management experience of Hazen.

Hazen invites DWQ to contact our references included in the following project descriptions and to review the identified Key Features Hazen accomplished for each client's project. The table below highlights the relevant features between our similar projects and DWQ's RMP PMC Services project.



Program	Relevance to DWQ's RMP Implementation	
 **Sanitary Sewer Program Management Services** *Jefferson County, AL*	• Consent Decree • Scheduling • Staff Augmentation	• Tracking Program Metrics • Regulatory Coordination • Design Peer Reviews
 **Project Management and Staff Augmentation** *Baltimore, MD*	• Scheduling • Staff Augmentation	• Reporting and Tracking
 **SD1 Consent Decree Compliance Support** *Ft. Wright, KY*	• Consent Decree • Regulatory Coordination • Scheduling	• Reporting • Staff Augmentation
 **Consent Order Program Management** *Ft. Lauderdale, FL*	• Consent Order with Strict Schedules • Staff Augmentation • Scheduling	• Regulatory Coordination and Reporting • Reporting and Tracking
 **Remedial Measures Plan Implementation** *Lexington, KY*	• Proven Track Record of past 11 years on the same Program	

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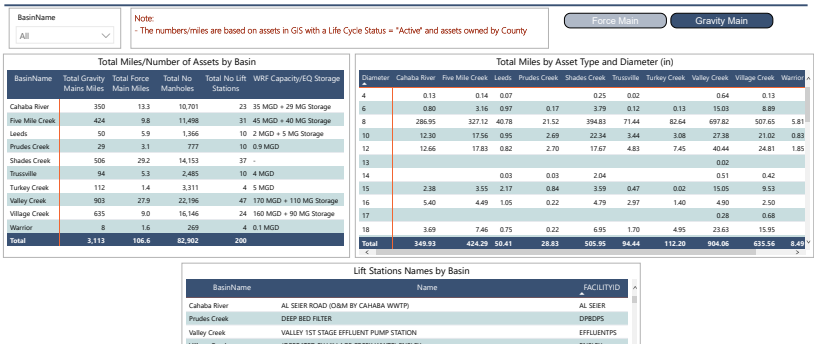
Sanitary Sewer Asset / Program Management Services JEFFERSON COUNTY, AL



Since 2012, Hazen has served as Jefferson County's sewer asset and Program Management team with the overall focus of reducing sanitary sewer overflows.

Jefferson County Environmental Services Department (JCESD) owns and operates 3,137 miles of sanitary sewer lines, 174 pump stations, and 81,000 manholes as part of their collection system.

Based on a successful asset management strategy and program development, Hazen's role expanded in 2014 to full implementation, including comprehensive program management services. Hazen's services include continued identification and prioritization of projects to eliminate sanitary sewer overflows, regulatory compliance and reporting, hydraulic modeling, management of more than 22 other consulting firms, construction management and inspection, development and implementation of a CMOM program, training of County staff, and program controls.

Hazen developed a master schedule using Oracle P6 for all capital projects. Hazen also developed dashboards to track sanitary sewer overflows (SSOs), sewer inspection and cleaning, and to provide data related to overflow locations and causes. These tools have helped to streamline the overall program.

Recent accomplishments as the Program Manager include:

- Managed 22 subconsultants for the design and construction inspection of sewer improvement projects and provided assistance with managing consultants contracted directly with the County
- Acted as Department technical resources for engineering issues
- Helped develop Key Performance Indicators (KPIs) to help set goals and track progress
- Developed Program dashboard to quickly show program metrics and KPIs
- Developed and implementing priority remedial measures that have significantly reduced SSOs

Key Team Members

Sean FitzGerald
Technical Lead

Renato Nojadera
Project Controls / Master Scheduler

Vivek Sai
Project Engineer

Project Profile

Design Completion:
Current contract estimated July 23, 2035

Construction Completion:
Current contract estimated July 23, 2035

Project Cost: $1.6B

Reference

Daniel White, PE
Deputy Director of Environmental Services
JCESD
(205) 214-8610
whited@jccal.org

Hazen: Delivering Core Objectives for JCESD

- Developed prioritized remedial measures
- Cash flow tracking linked to master schedule
- Implemented CAP tool to aid in review of development capacity requests
- Developed KPIs, dashboard to set goals and track progress
- Prepared 18 SOPs, training for O&M and construction crews

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Program Management Services and Staff Augmentation for the City's Water Utilities Program (Project #1212) BALTIMORE, MD

As Project 1212 Program Managers between 2015 and 2018, Hazen and Sawyer is proud to have assisted the City in exceeding their water main replacement goals within that period.

In 2015, Hazen and Sawyer was selected by the City of Baltimore to provide Program Management Services and Staff Augmentation for the Water Utilities program. In this role, Hazen provided staff to support multiple projects within the City's Capital Improvements Program (CIP), including water main rehabilitation and replacement projects, and AMI/R implementation. Project scopes typically consisted of rehabilitation and/or replacement of existing water mains ranging from 3 to 20 inches in diameter, replacement of various sized valves and fire hydrants, renewal of existing water services, meter vault replacement, temporary by-pass piping, sidewalk restoration, curb & gutter, and paving restoration.

To assist in the implementation of capital projects, Hazen provided on-site project managers, design reviewers, in-house CADD/designers, and field construction inspectors. Project Managers worked closely with City staff in managing schedule, cost and quality of on-going capital projects. Roles included development of scope, tracking performance and schedule, communications and progress meetings with design consultants contracted separately with the City, coordination of agency comments of design deliverables and coordination with the City's Office of Asset Management. Hazen also provided technical review services for all design deliverables, typically including 30%, 70%, 90%, and bid-ready documents. Hazen senior engineers provided detailed, focused review comments, typically for all elements of each design deliverable from 30% design to final bid ready documents. For each review, these technical reviews included special focus on valve shut down, sequencing, and bypass plan requirements. Overall, Hazen managed and/or performed technical design reviews for over 30 deliverables.

Key Team Members

Renato Nojadera
On-Site Program Manager

Project Profile

Program Completion: Aug. 2018

Project Cost: $4.6M

Reference

Hernan Guadalupe
Engineer II
Baltimore City DPW
(410) 396-8198
HernanGuadalupe@
baltimorecity.gov

Hazen: Delivering Core Objectives for the City of Baltimore

- Master Schedule promoted transparency and accountability
- RE&I, 7 months of PM services added within original budget
- Streamlined permitting, community meeting approach
- Weekly status updates and monthly program meetings
- Performed over 30 technical reviews, Hazen's QC on in-house designs

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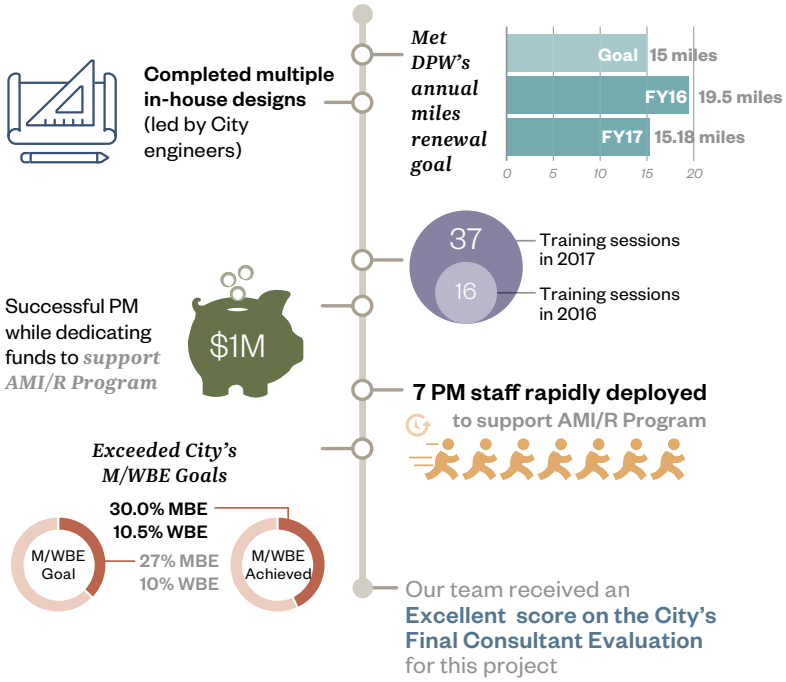
As part of project management and technical reviews, Hazen assisted the City in their internal workforce development initiatives with the development of a comprehensive training session for City staff working on Water Utilities Projects. Since September 2016, Hazen prepared and conducted, or organized, two training programs, consisting of over 50 training sessions, focused on the technical and managerial aspects of water utility projects. Session topics have included detailed water main replacement design, CADD standards, project management, engineering computations and standard specifications. The graphic below summarizes the training conducted by our team under this contract.

In addition to staff augmentation under this program, Hazen provided construction inspection services in support of the Advanced Metering Infrastructure and Water Meter System Installation projects city-wide, as well as other water capital projects. Hazen provided an inspector on the WC1346 Elm Avenue 48" Joint Repairs emergency contract and rapidly deployed seven program management staff inspectors assigned to the WC1353 AMI/R Urgent Need Metering Infrastructure Repair & Replacement, Various Repairs.

As part of our programmatic roles, Hazen also assisted the City update multiple standardization documents, including Master Specifications, Standard Notes, internal design review guidelines, cost estimating templates, and the CAD standards manual. In addition, we worked with the City to enhance capital project planning by creating a P6 master schedule with cash flow. This tool was used to track progress of replacement as well as assist in the planning of replacement goals for the outer years, based on anticipated funding.

Accomplishments on Project 1212



Our team received an Excellent score on the City's Final Consultant Evaluation for this project

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Updated Watershed Plan and Program Management FT. WRIGHT, KY

In 2021, Hazen completed an update to the Watershed Plan for Sanitation District No. 1 of Northern Kentucky (SD1), reducing the plan cost by over 50 percent. Since then, Hazen has provided program management services for SD1.

Hazen completed an update to SD1's watershed plan, building upon the original 2014 plan which considered the following improvements to address CSOs and SSOs: conveyance upgrades, I/I reduction through comprehensive rehab, EQ storage, new/upsized pump stations, green infrastructure, and high-rate treatment. Given that these solutions remain valid, the updated plan sought to optimize configurations of these same solution types by maximizing existing infrastructure utilization, leveraging strategically placed storage, and implementing proven coordinated control technologies. Using the Optimizer software, thousands of alternative were evaluated for performance and cost effectiveness. Recommended configurations were analyzed as part of a full engineering review prior to making final recommendations. By completing this thorough alternatives analysis, SD1 reduced the total Watershed plan cost to $679 million, reducing the plan cost by over 50% of the original Watershed Plan. The updated plan successfully achieves the SSO volume reduction, and CSO percent capture goals as required by the amended consent decree.

As program manager, Hazen has acted as an extension of SD1 staff to successfully manage design and construction projects for SD1's engineering group. In this role, Hazen has assisted in viewing design submittals, negotiating change orders, maintaining budget and schedule, and providing construction management. Current projects being managed are the construction of 7.3-MG EQ tank, design and bidding of WWTP diffusers, and a PLC replacement design.

Key Team Members

Sean FitzGerald
Project Manager

Ross Horvath
Task Leader

Sean O'Rourke
Task Leader

Seth Bradley
Lead Modeler

Project Profile

Design Completion: Ongoing

Construction Completion: Ongoing

Project Cost: $1.2M

Reference

Rob Schroeder, PE
Sanitation District No. 1 of Northern Kentucky
(859) 547-1656
rschroeder@sd1.org

Hazen: Delivering Core Objectives for SD1

- Use of latest sewer technology and planning tools
- Determined added cost-efficiencies to reduce costs 50%
- Created an approvable regulatory strategy
- Developed task order database tool to track assignments
- Developed new costing tool to generate fast, accurate costs

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Consent Order Program Management

FORT LAUDERDALE, FL

In 2017, the City entered into a Consent Order with the State of Florida Department of Environmental Protection to complete 77 milestones within 6 years. The City chose Hazen to navigate the execution of the Consent Order.

The milestones encompassed the rehabilitation/replacement of sanitary force mains and pump stations, completion of infiltration/inflow projects, perform a force main condition assessment, development of a sewer hydraulic model, establishing an asset management and CMOM program and developing a complete map of the existing sewer system. Hazen's initial role included establishing a cost-loaded master schedule to serve as the guide as to how the City will meet the 77 Consent Order milestones. The program schedule is updated monthly. The cost-loaded schedule also assists the City with forecasting program expenditures and to estimate the amount of bond money that will be expended by the bond due date.

Other program management service that Hazen is providing include:

- Serving as extension of staff and managing the implementation of an asset management software, Cityworks
- Meeting with the Florida Department of Environmental Protection to negotiate modifications to some of the Consent Order program projects
- Developing a Design Management Plan that will be used to guide the execution of design for all the projects in the program
- Prepare the required reporting in the Consent Order
- Establishing Cost Estimating Guidelines for the program
- Provide monthly progress reports intended for City administration staff to update on the status of the program
- Meet with stakeholders and other utilities to coordinate upcoming projects

Key Team Members

Sean FitzGerald
Asset Management Task Lead

Kevin Robinson
GIS Mapping / CAD

Project Profile

Program Completion: Ongoing through 2026

Program Cost: $248M

Reference

Omar Castellon, PE, PMP, ENV SP
Assistant Public Works Director
City of Fort Lauderdale
(954) 828-5064
ocastellon@fortlauderdale.gov

Hazen: Delivering Core Objectives for the City of Fort Lauderdale

- Developed master cost-loaded schedule
- Established Cost Estimating Guidelines
- Direct negotiation with FDEP for project modifications
- Monthly status and progress reports
- Developed Design Management Plan

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Remedial Measures Plan and Program Management Services LEXINGTON, KY

Hazen has served as an extension of Lexington-Fayette Urban County Government (LFUCG) staff since the inception of the Remedial Measures Plan (RMP) program over a decade ago, and today remains fully committed to assisting DWQ to ensure Consent Decree compliance.

Remedial Measures Plans

The RMP identified 82 separate projects to eliminate 111 recurring SSOs by 2026 at a cost of $591 million. Three separate RMP reports (one for each watershed group) were submitted to USEPA and KDOW in 2011 and 2012. The largest projects were two separate 44 million gallon (MG) storage facilities at LFUCG's two largest wastewater treatment plants. Six other smaller storage facilities are proposed throughout the system, along with trunk sewer capacity increases and system rehabilitation projects.

Program Management

As RMP Program Manager, Hazen assists with RMP implementation by:

- Performing conceptual designs of the most complex wet weather storage projects and developing scopes of work for design consultants
- Procurement of design engineers
- Preparation and maintenance of standard specifications and general notes to provide consistency among projects
- Serve as Project Managers for the individual projects being designed and constructed under the program
- Developing and studying alternate sites for proposed wet weather storage facilities
- Quality control and peer reviews of RMP projects to ensure consistency and compliance with RMP reports and LFUCG's Consent Decree
- Prepare quarterly and annual reports for submission to USEPA and KDOW

Key Team Members

Jon Schubarth
Project Manager
Kurt Zehnder
Assistant Project Manager
Marissa Golgosky
GIS/Mapping
Seth Bradley
Individual Project Manager
Tyler Bridges
Individual Project Manager
Daniel Honeycutt
Reporting
Mike Asalon
Individual Project Manager
Rhonda Baker
Funding
Worth Ellis
Individual Project Manager

Project Profile

Design Completion:
Ongoing through December 2025

Construction Completion:
Ongoing through December 2026

Project Cost: $591M

Reference

Bob Peterson, PE
RMP Program Manager
LFUCG Division of Water Quality
(859) 425-2438
rpeterson@lexingtonky.gov

Hazen: Delivering Core Objectives for DWQ

- Projects completed on schedule
- Overall program costs under budget
- Proactive permitting and improved public perception
- Daily communication of status and reporting
- Quality oversight to proactively keep project on target

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Section 4 | Project Approach

Section 4

Project Approach

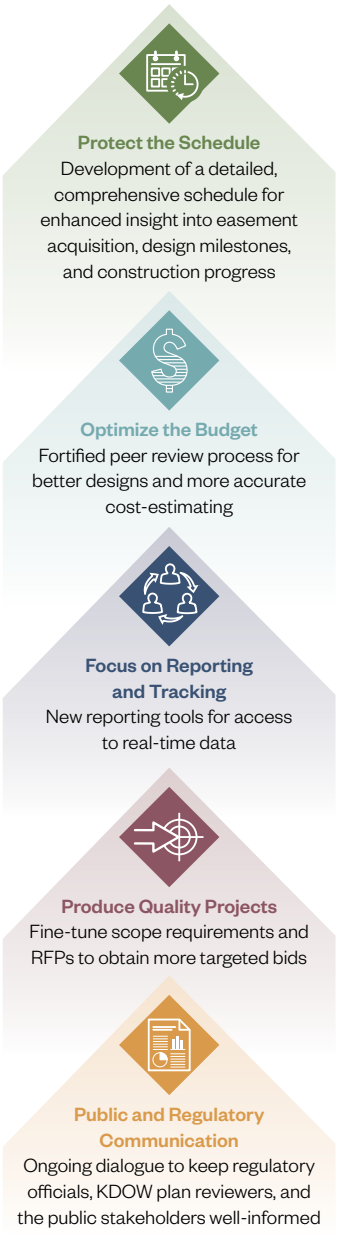
Our primary focus for the RMP program delivery and implementation will be to get projects completed on time and in a cost-effective manner. As the RMP Program Management Consultant (PMC) for the last 11 years, Hazen looks forward to continuing to deliver responsive, successful service to DWQ on this critical Consent Decree program.

The RFP identifies three broad scopes of services for the PMC as follows:

1. General RMP Program Management Support Services
2. RMP Design Management Services
3. RMP Construction Oversight Services

In order to achieve success in these scope areas, Hazen intends to focus on five broad objectives as summarized at right, below, and as shown throughout this Proposal.

Successful Program Implementation



Protect the Schedule

At the end of 2019, Hazen and DWQ staff were able to get the majority of late RMP projects back on schedule. However, with the onset of the global pandemic in 2020, it became apparent that DWQ would not be able to meet the Full Compliance Deadline of 2026 for all RMP projects. The reasons for the schedule lapses include challenges with property and easement acquisitions, unprecedented supply chain and economic disruptions, escalating costs, and workforce/labor shortages.

Additionally, we recognize the constraints on the schedule from resources and complexity of construction in congested areas and are reviewing alternate strategies to expedite and accelerate delivery. Therefore, for this next phase of RMP implementation, the Hazen team will focus on finalizing the schedule for all remaining RMP projects, completing the projects that are currently behind schedule, proactively taking steps to accelerate the schedule for existing projects, and initiating new projects sooner in the schedule to allow more time for full implementation. Additionally, to better plan for upcoming projects, Hazen is proposing to continue the improved, dynamic project scheduling described in detail later in this section of the Proposal.

Hazen's Focus for the Next RMP Phase

1. Finalizing the schedule revisions for all remaining RMP projects
2. Completing current design or construction projects within revised schedules
3. Proactively accelerating the schedule for remaining RMP projects
4. Initiating new projects sooner in the schedule

Optimize the Budget

As we continue with the implementation phase of the RMP, we have shown overall success in designing and constructing the RMP projects under budget. Most of the budget savings have been realized in the WWS tank and pump station projects which were heavily loaded toward the front of the implementation schedule. While a few WWS tank and pump station projects remain, most of the remaining projects involve the replacement of trunk sewers and these projects have recently bid much higher than the budgeted amount. Hazen's focus will be to optimize the budget of every RMP project with the goal of keeping the overall program costs under budget. To assist DWQ with cashflow requirements, upon EPA's approval of the revised schedule, Hazen will update the cost estimates of all remaining RMP projects. In addition, Hazen will continue to complete peer reviews to improve design plans, thus lowering bidding unknowns thereby lowering construction costs and risk for change orders.

Public and Regulatory Issues

Successful programs of this nature require transparency with public stakeholders and relationships with the regulatory community. Hazen will focus on continuing to coordinate with these entities to ensure the continued successful progression of the individual projects associated with the RMP program. From a program perspective, we will continue to assist DWQ staff with their communication needs regarding individual projects and overall program status. We will also continue to coordinate with state regulators with respect to individual project reviews and approvals.

As a part of this program we will work with DWQ to conduct stakeholder meetings in the early stages of each RMP project. During both design and construction, Hazen will continue to coordinate as needed with the individual property owners affected by RMP construction activities. Primarily during construction, the Hazen project managers are often required to interact with the individual property owners to address problems or communicate realistic expectations for project progress.

Reporting and Tracking

Hazen will continue to assist DWQ with the Quarterly and Annual Reporting requirements associated with the Consent Decree. Additionally, to better communicate projects status on a real-time basis, Hazen will continue to provide improved project tracking via several visualization dashboards (also described in detail later in this section of the Proposal.)

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Quality Assurance

To date, Hazen and the DWQ staff have been successful with the program's quality control measures put in place. Therefore, Hazen will continue to focus on these quality control measures which include 1) performing the DAO workshops prior to initiation of project design, 2) ensuring that each design consultant performs their own quality control reviews prior to every milestone submittal, and 3) conducting peer reviews at specific project milestones during design.

Funding Assistance

During the initial phases of RMP implementation, DWQ has taken advantage of numerous low interest loans provided by the Kentucky Infrastructure Authority State Revolving Loan Fund (KIA). Moving into this next phase, one of Hazen's priorities will be to assist DWQ in preparing new KIA Project Profiles to be considered for additional KIA loans. Additionally, Hazen staff has the expertise with the administrative procedures associated with administering KIA loans during project design and construction to support DWQ in this area as needed. In addition to KIA funding, Hazen has experience both locally and nationally administering and applying for a variety of federal funding.

Hazen staff has excellent relationships with KIA and Bluegrass ADD staff, and we can support DWQ in working to meet their funding and financial goals.

Quarterly/Annual Reporting

For LFUCG's Annual Reports, Hazen will continue to work with the various departments within DWQ to compile their required information, compare the data with the four applicable Quarterly Reports, and organize the information into the format required for the Annual Report. We will compile the latest updates from the RMP and organize the data in the required layout. Finally, Hazen will supply all the RMP-related content for the Annual Report to DWQ's MS4 PMC for inclusion with the other content and final submittal to the United States Environmental Protection Agency (EPA) and the Kentucky Department of Environmental Protection (KDEP).

Like the Annual Reports, Hazen will work with the various departments within DWQ to compile their required information, compile the data, and organize the information into the format required for the Quarterly Report. Hazen will supply all the RMP-related content for the Quarterly Report to DWQ for inclusion with the other sanitary and stormwater content and final submittal to the EPA and the KDEP.

1013-123

Tracking of Program Service Contracts

Due to DWQ staffing needs, Hazen will take a more active role in tracking of the various program service contracts. These contracts include the service contract with the design consultants, the RPR services contract, the material testing services contract, and any other service contracts that DWQ and Hazen deem necessary for the successful implementation of the program. It is intended that all the information for the various service contracts will be documented and tracked in accordance with the visualization and tracking dashboards described in more detail later in this section of the Proposal. Any new protocols associated with this tracking will be created in conjunction with DWQ staff and all documents will be stored on Hazen's RMP SharePoint site, always accessible to DWQ staff through an internet connection.

Scheduling

This summer, Hazen worked with DWQ staff to "reshuffle" the remaining RMP projects on the approved RMP schedule, which resulted in extending the Full Compliance Deadline to December 31, 2030. In August, this revised schedule was submitted to the EPA and the Kentucky Energy and Environmental Cabinet – DWQ is awaiting a response.

To better protect the schedule, Hazen is proposing to continue the use of the dynamic cost-loaded schedule for tracking of the progress of RMP projects from preliminary design through detailed design, easement acquisition, construction, and project closeout. The original static schedule set yearly dates for design completion and construction completion only. By further detailing the schedule by quarter, milestones will be better tracked and targeted.

A dynamic schedule, as shown on the next page, allows for better planning of future projects. As the program has developed, Hazen identified projects that could be shifted in the schedule to better meet the Full Compliance Deadline. With a dynamic schedule, it will allow for easier planning of potential schedule changes and highlight what the changes mean for other RMP projects as well as cash flow based on the planning level estimates.

Some screenshots of the Cost-Loaded P6 master schedule is included in this proposal. Once construction costs are updated for all remaining projects, this schedule will not only assist DWQ in their program budgeting and cash flow, but also aid in assuring milestone dates are met by initiating phases of the project(s) at appropriate times.

Through our focus on continuous improvement Hazen will continually strive to implement best practices. Some key high priorities are:

Cost-loaded P6 master schedule, which will help ensure projects stay on schedule and project expenditures within budget.

Program Dashboard in Power BI to display program metrics by project and overall. This provides rapid at-a-glance viewing by key stakeholders.

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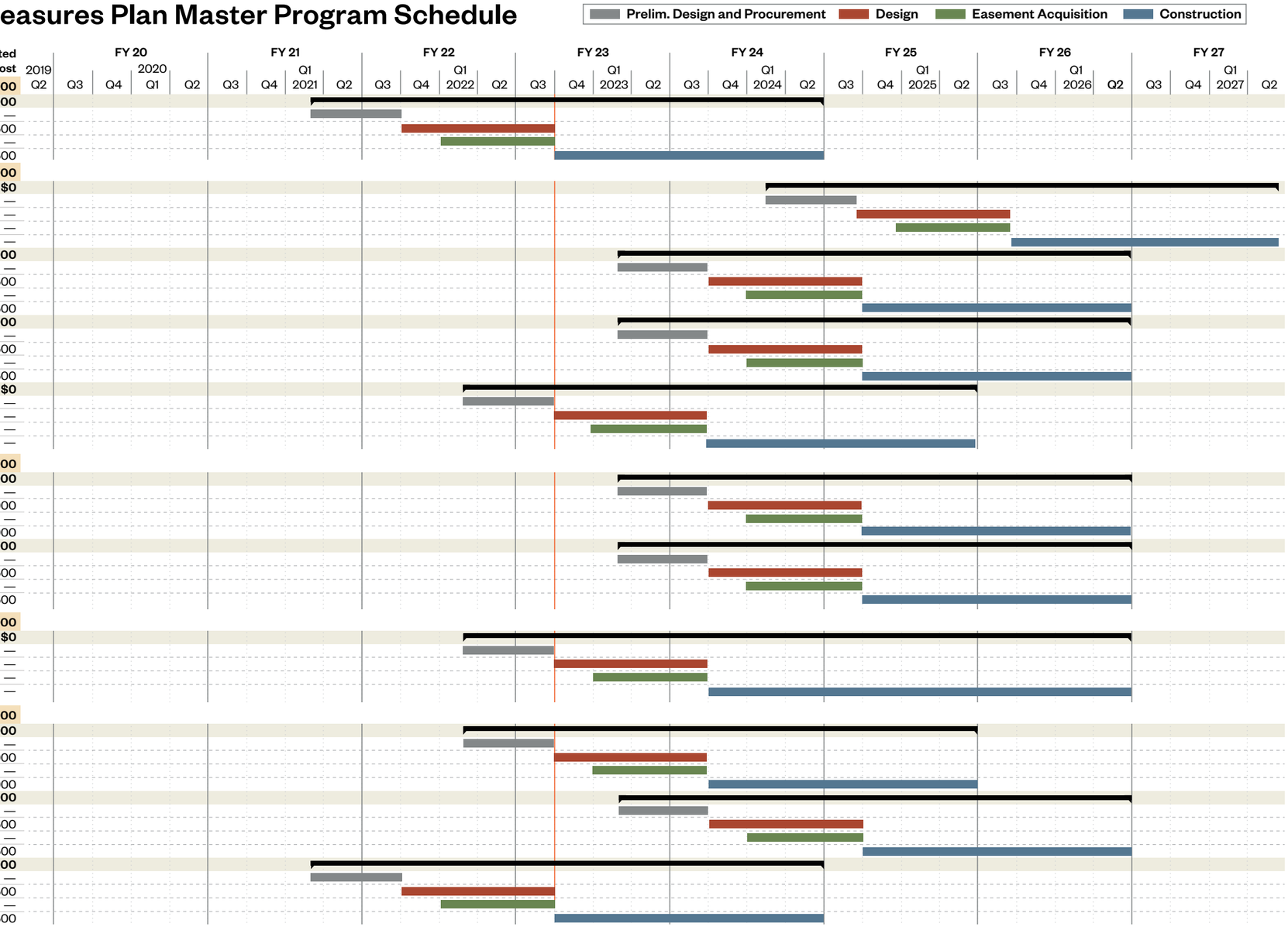
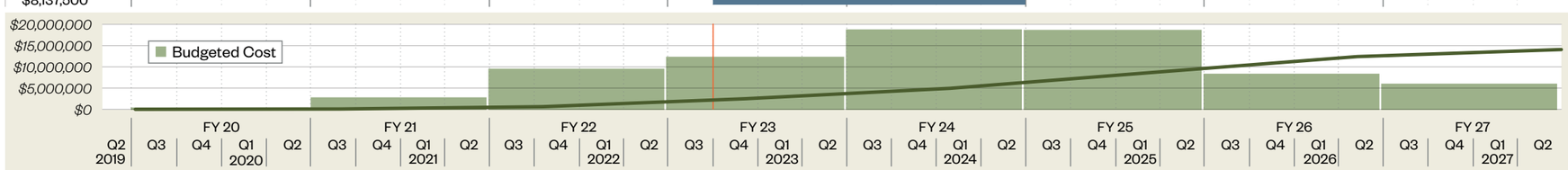
LFUCG Sanitary Sewer Remedial Measures Plan Master Program Schedule

Activity Name	Start	Finish	Budgeted Cost
East Hickman	**03-01-19**	**06-30-27**	**$63,600,000**
Delong Road PS & FM	**03-01-21**	**06-30-24**	**$3,130,000**
Preliminary Design and Procurement	03-01-21	05-31-21	—
Design	09-30-21	09-30-22	$217,500
Easement Acquisition	01-01-22	09-30-22	—
Construction	10-01-22	06-30-24	$2,912,500
North Elkhorn	**03-01-24**	**06-30-27**	**$6,030,000**
North Elkton PS WWS Tank	**03-01-24**	**06-30-27**	**$0**
Preliminary Design and Procurement	03-01-24	05-31-24	—
Design	09-30-24	09-30-25	—
Easement Acquisition	01-01-25	09-30-25	—
Construction	10-01-25	06-30-27	—
Greenbrier #2 PS	**03-01-23**	**06-30-26**	**$1,210,000**
Preliminary Design and Procurement	03-01-23	05-31-23	—
Design	09-30-23	09-30-24	$127,500
Easement Acquisition	01-01-24	09-30-24	—
Construction	10-01-24	06-30-26	$1,082,500
Greenbrier Trunk	**03-01-23**	**06-30-26**	**$290,000**
Preliminary Design and Procurement	03-01-23	05-31-23	—
Design	09-30-23	09-30-24	$22,500
Easement Acquisition	01-01-24	09-30-24	—
Construction	10-01-24	06-30-26	$267,500
Floyd Drive Rehab	**03-01-22**	**06-30-25**	**$0**
Preliminary Design and Procurement	03-01-22	05-31-22	—
Design	09-30-22	09-30-23	—
Easement Acquisition	01-01-23	09-30-23	—
Construction	10-01-23	06-30-25	—
South Elkhorn	**03-01-2**	**06-30-26**	**$5,580,000**
Mint Lane Trunk	**03-01-23**	**06-30-26**	**$1,170,000**
Preliminary Design and Procurement	03-01-23	05-31-23	—
Design	09-30-23	09-30-24	$90,000
Easement Acquisition	01-01-24	09-30-24	—
Construction	10-01-24	06-30-26	$1,080,000
Mint Lane PS	**03-01-23**	**06-30-26**	**$4,410,000**
Preliminary Design and Procurement	03-01-23	05-31-23	—
Design	09-30-23	09-30-24	$367,500
Easement Acquisition	01-01-24	09-30-24	—
Construction	10-01-24	06-30-26	$4,042,500
Town Branch	**03-01-22**	**06-30-26**	**$110,000**
Town Branch WWTP WWS Tank, Phase 2	03-01-22	06-30-26	**$0**
Preliminary Design and Procurement	03-01-22	05-31-22	—
Design	09-30-22	09-30-23	—
Easement Acquisition	01-01-23	09-30-23	—
Construction	10-01-23	06-30-26	—
West Hickman	**03-01-20**	**06-30-27**	**$27,730,000**
Merrick Trunk	03-01-22	06-30-25	**$3,880,000**
Preliminary Design and Procurement	03-01-22	05-31-22	—
Design	09-30-22	09-30-23	$270,000
Easement Acquisition	01-01-23	09-30-23	—
Construction	10-01-23	06-30-25	$3,610,000
Ecton Trunk	**03-01-23**	**06-30-26**	**$1,550,000**
Preliminary Design and Procurement	03-01-23	05-31-23	—
Design	09-30-23	09-29-24	$112,500
Easement Acquisition	01-01-24	09-29-24	—
Construction	10-01-24	06-30-26	$1,437,500
West Hickman Main Trunk E	**03-01-21**	**06-30-24**	**$8,700,000**
Preliminary Design and Procurement	03-01-21	05-31-21	—
Design	09-30-21	09-30-22	$562,500
Easement Acquisition	01-01-22	09-30-22	—
Construction	10-01-22	06-30-24	$8,137,500





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Tracking Costs and Visualization Tool

Hazen proposes the use of real-time data management to aid in the management of the RMP program. Power BI shall be utilized to allow the PMC and DWQ to see in real time the progress made on each design and construction project in the RMP program.

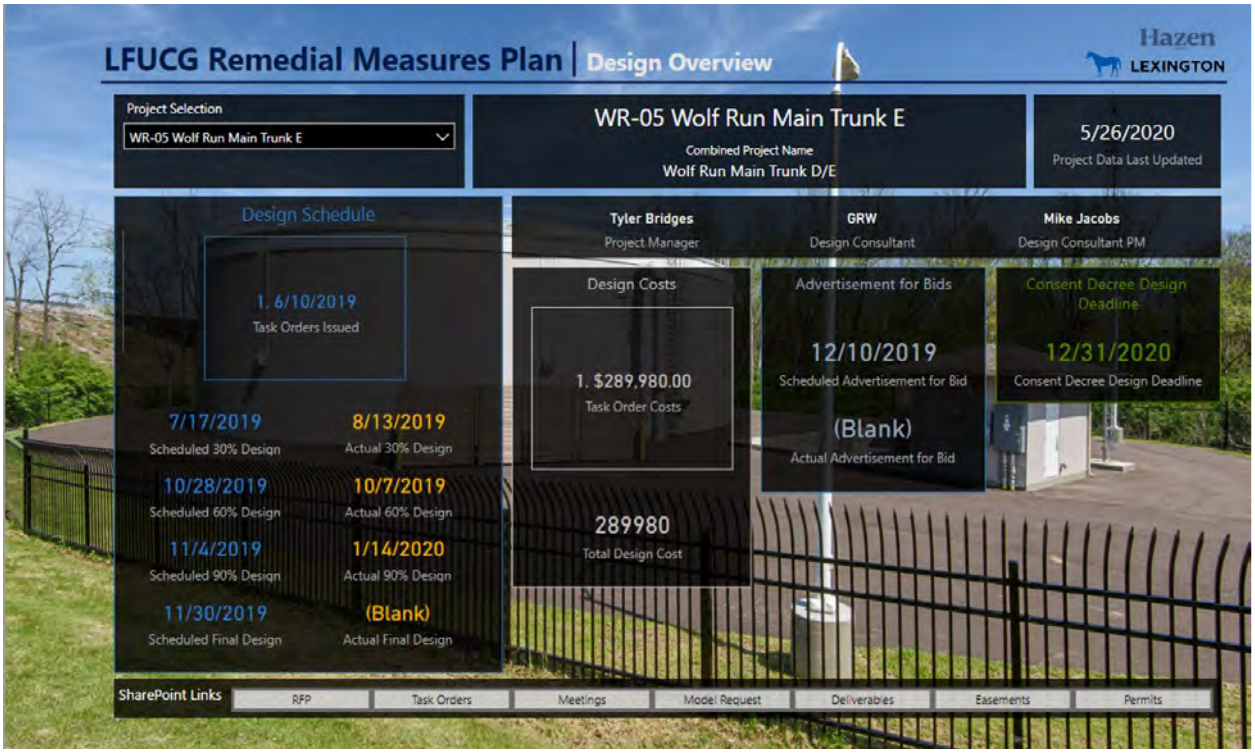
To highlight the capabilities of this software, the figure below features one of the RMP projects that was tracked during the last contract. This tool allows for quick access to the essential information of every project that is currently under design or construction. This tool will allow for a more streamlined approach to tracking both budget and construction time and enable Hazen and DWQ to identify potential schedule problems earlier in the project so corrective action can be taken.

This data is dynamic and updated monthly after each project's progress meeting and submission of each Application for Payment from the Contractor on each project. This tool allows DWQ staff to get an overview of every project in real time, anytime they desire. Access to this software and interface is through the internet and requires no new specific software or licenses to be purchased by DWQ.

As illustrated below, the tool can show monthly progress in terms of production and cost and can be customized to track any quantity of interest to DWQ.

Power BI will be used to show the real-time progress made on each RMP program project, enabling more streamlined budget and construction tracking.

Below: Power BI Design Overview Dashboard for the Wolf Run Trunk E



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The Power BI visualization software can also aid in the quarterly and annual reporting of RMP progress as required by the Consent Decree. As projects move through the preliminary design, detailed design, easement acquisition, construction, and beneficial occupancy stages, Hazen can track the progress and allow for quick and easy summarization of their status.

Below: Power BI can be used to track design and construction activities. This screen shot shows a snapshot in time from the Cane Run Trunk project Construction Overview dashboard.

With the utilization of real-time data for the RMP program, Hazen believes this will better help protect the schedule, and keep the design consultants and contractors more accountable to the Consent Decree deadlines.

Tracking Post Construction Operations

Moving forward, Hazen proposes to work with DWQ to track the wet weather events and post construction data in order for DWQ to have a better idea of the RMP program accomplishments. Power BI shall be utilized to allow the PMC and DWQ to see the operational progress made after the construction of each project in the RMP program. Along with the data collection, Hazen will work with RMP and DWQ Pump Station Maintenance staff to ensure facility optimization. We propose to visit each WWS facility after initiation of operation and during wet weather events to confirm the operation of the facility matches the design intent of the CDTM, final design, and RMP program. Should modifications be identified to better optimize the facility, Hazen will work with DWQ to implement these changes and improve overall operation of the facilities.

Section 5 | Local Office

Section 5

Local Office

Hazen has built an RMP team to meet the wide range of DWQ and Program Management project needs while maximizing local resources. Our centralized project management, close proximity, and many years of serving LFUCG in this exact capacity all strengthen our ability to respond quickly and effectively to any DWQ need.

Hazen's Lexington office, located less than 9 miles from DWQs Offices, will serve as our project headquarters, and hub for project and resource coordination. Project management, as well as nearly all of the technical and design efforts for this project will be completed here. Based on past RMP experience, we estimate more than 95% of project work will be performed by staff in the Lexington area.

All of our primary teaming partners, CDI, Inc., Third Rock Consultants, Jackson Group, and Geotechnology, are all located in Fayette County or a surrounding county.

The Hazen team includes a total of 5 firms, for a combined local staff of over 20 individuals that are available to fill key roles on this project. Hazen has 11 employees local to LFUCG's DWQ, with 13 additional employees located in Louisville , all dedicated solely to stormwater/wastewater/water projects and available to assist DWQ on any RMP needs or requests.

Hazen's Lexington Office

230 Lexington Green Circle
Suite 520
Lexington, KY 40503

Lexington-based Core Project Team

PROJECT MANAGEMENT


PROJECT MANAGEMENT



CONSTRUCTION MANAGEMENT

Proximity to Teaming Partners and Project Sites

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Ready Response with the Right Staff

Our comprehensive resources also include a regional design center in nearby Cincinnati staffed with over 50 professionals in the disciplines of conveyance infrastructure, asset management, civil, process, mechanical, electrical, chemical, instrumentation and control, structural, and cost control, along with experts in the financial and business aspects of wastewater and water.

Work assignments often have special technical needs and may require a rapid response. The Hazen team fully understands the need to respond quickly with the right staff and is dedicated to continuing to provide this level of service to DWQ.

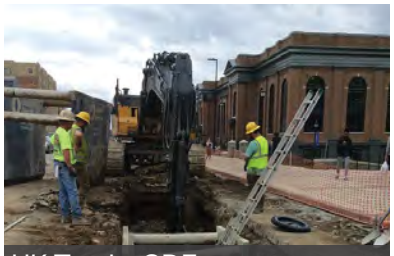
Specialized staff in other offices are available to support our local team - our availability and resources will be increased as needed for DWQ.

Understanding LFUCG's Needs

Through our many years of work with LFUCG, we have gained a understanding of DWQ, their collection system, and protocols. As of June 2022, the Town Branch WWTP, Wolf Run, Lower Cane Run, West Hickman WWTP, West Hickman 7, and East Hickman wet weather storage (WWS) tanks collectively have kept over 1 billion gallons of sanitary sewer flow out of the waters of the Commonwealth. Also as of June 2022, the completion of 69 RMP projects have abated 78 of the 111 SSOs in Appendix A of the Consent Decree. Lastly, the SSOs on the LFUCG Master Location Monitoring List have also been reduced from 118 to 61.

Additionally, many of our Lexington staff live and work in the communities that the LFUCG sanitary sewer system serves. As ratepayers, taxpayers, and homeowners, they have a vested interest in the long-term success of this contract and in DWQ overall.

Our Longstanding Record of Providing Positive Community Impacts


UK Trunks CDE


Upper Cane Run WWS


Wolf Run Trunks C&D


West Hickman 7 WWS/PS


Southeastern Hills Trunk


WH WWTP WWS Phase 2

1013-123

Section 6 | Hourly Rates

Section 6

Hourly Rates

In accordance with the Request for Proposal, the table below includes hourly rates for the Hazen team members that are expected to bill hours to any task associated with this Proposal. Hazen acknowledges that these hourly rates shall not change for the first two years of the contract term. However, CPI adjustments will be allowed on the first of October in 2024 and 2026.

Hazen and Sawyer

Employee	Hourly Rate
Jason Advani	$195.00
Mike Asalon	$165.00
Odus Baker	$130.00
Rhonda Baker	$95.00
Seth Bradley	$180.00
Tyler Bridges	$165.00
Brett Bueltel	$195.00
Bo Copeland	$220.00
Jim Dierig	$100.00
Worth Ellis	$180.00
Sean FitzGerald	$255.00
Chip Gill	$100.00
Paula Glasford	$150.00
Marissa Golgosky	$125.00
Daniel Honeycutt	$125.00
Ross Horvath	$240.00
Will Leadbitter	$225.00
Evan Nathan	$125.00
Renato Nojadera	$195.00
Thomas Nolan	$125.00
Sean O'Rourke	$195.00
Kevin Robinson	$135.00
Vivek Sai	$195.00
Tom Schaffer	$240.00
Jon Schubarth	$240.00
Parker Seuss	$165.00
Nathan Stewart	$150.00
Richard VanDyke	$195.00
Kurt Zehnder	$205.00

CDI

Employee	Hourly Rate
Brian Bewley	$175.00
Tammy Green	$95.00
Steven Grice	$122.00
Dennis Kononov	$95.00
Missy Legel	$95.00
Zack Kline	$187.00
2-Person Survey Crew	$160.00

Third Rock

Employee	Hourly Rate
Jonathan Cory Bloyd	$80.00
Molly Foree Cummins	$250.00
William McClellan Hall	$125.00
Rain Anita Storm	$100.00
Lisa Ann Stratton	$75.00

Geotechnology

Employee	Hourly Rate
Michelle Casto	$152.00
Lee Czor	$195.00
Andrew Dingler	$115.00
Joe Hauber	$175.00
Claire Koczak	$87.00
Josh Weaver	$87.00

Jackson Group

Employee	Hourly Rate
Jeremy Jackson	$125.00

Appendix A | Resumes

Kurt Zehnder, PE

Associate

Mr. Zehnder has over 18 years of experience in planning and design of water and wastewater projects including water distribution, storage, pumping and treatment facilities, as well as wastewater collector sewers, interceptor sewers, pumping stations and treatment plants.

Education

BSCE, University of Kentucky, 2003

Certification/License

Professional Engineer: KY, OH

Areas of Expertise

- Wastewater pumping station planning and design
- Wet weather storage facilities
- Gravity collection systems and force mains planning and design
- Water transmission and distribution systems
- Ground and elevated water tank design
- Project Management

Experience

- 18 total years
- 5 years with Hazen

Professional Activities

KY/TN American Water Works Association

KY/TN Water Environment Association

Kentucky Society for Professional Engineers

Remedial Measures Plan (RMP) Implementation Services, LFUCG, Lexington, KY

Project Manager. Assist in the creation of RMP project Conceptual Design Technical Memorandums (CDTM), project alternatives, RMP construction schedules, QA/QC peer reviews, Design Alternative Optimization (DAO) workshops for multiple RMP projects, and technical specification writing and creation. Manage construction projects for LFUCG-DWQ (RMP) through project design, bidding, construction, and closeout. Duties include maintaining contract directives, RMP schedule deadlines and capacity requirements, monthly progress meetings, shop drawing review, application for payment review and approvals, managing field orders, change orders and request for information.

South Sewer Extension Contract 1, GMWSS, Georgetown/Scott County, KY

Project Manager. Design for a new 6.4 mgd divided wet well, fourplex submersible pump station with dual 12-inch and 18-inch force mains to serve a 500 unit mobile home park and the sanitary sewer service area of the south side of Georgetown. The pump station includes a 750-kW standby generator, ATS, VFDs and electrical, instrumentation, and storage rooms. The entire system includes approximately 34,145 LF of 8-inch to 27-inch gravity sewers, 103 precast manholes, 6,378 LF of dual 12-inch and 18-inch force mains and service connections to approximately 500 residential units.

East Frankfort Interceptor Final Design Phase III, Frankfort Sewer Department, Frankfort, KY

Project Manager. The interceptor is the first step in FSD's Long Term Control Plan to eliminate 3 reoccurring SSOs and provide additional capacity in the collection system. The proposed project includes installation of approximately 11,000 LF of 30-inch diameter gravity sewer around the east side of the service area, rehabilitation of approximately 3,000 LF of interceptor sewer, a gravity in/gravity out, 3 MG wet weather storage facility, manholes, two sets of double barrel siphons (one set (12-inch & 30-inch) under the Kentucky River and one set (12-inch & 16-inch) under Cove Spring Park), control gates, flow control/metering, and SCADA integration.

Hazen

Qualified Infrastructure Program (QIP) Design, Kentucky American Water, Lexington, KY
Project Manager. Over three years of design and on call construction administration for over 4 miles of water main replacements within KAW's LFUCG distribution system. This program replaces old cast iron water main past their useful life with new larger ductile iron water mains, new customer services, blow off assemblies, and new fire hydrants.

Town Branch Wet Weather Flow Storage and Pumping Facilities, LFUCG, Lexington, KY
Project Manager. Phase 1 of multi-phase wet weather storage facility adjacent to WWTP. Includes 22 MG above grade, pre-stressed concrete structure with overflow weir box and a four-plex submersible pumping station to convey peak wet weather flows to tank. Tank diameter is 260 feet with side water depth of 55 feet. Later phase will expand to 44 MG storage facility. Some aspects - such as piping, wet well, concrete, motor controls (by Allen Bradley ControlLogix PLC networked via multi-mode fiber optic cable to treatment plant Ethernet-based SCADA system) – of project designed during Phase I to be compatible with all subsequent phases, anticipating the maximum volume. Project is a deliverable of LFUCG's Consent Decree. Significant funding is provided by KIA Clean Water SRF and won the 2018 ACEC Grant Award.

Glenns Creek Interceptor, Contract 2, Frankfort, KY
Project Manager. Design of KIA-SRF project funding administration and construction, and RPR inspection services for approximately 8,300 LF of sanitary sewers 18-inches to 24-inches, dig and replaced with 24-inches to 36-inches sanitary sewers, 40 new manholes, two (2) bore and jacked crossings under a CSX/RJ Corman railroad (227 LF) and M.L.K. Blvd. (382 LF), one open cut road crossing, and one point repair sanitary sewer rehabilitation.

Seward Pump Station No. 1 Improvements, Fairfield, OH
Project Manager. Design and intermittent construction services for a duplex pump station involving two 900 GPM submersible chopper sewage pumps and associated piping, new valve vault and associated valves, fittings and piping, and approximately 262 LF of 10-inch ductile iron force main connected to existing 10-inch force main. Electrical work includes motor starters, level controls, control panel and standby power (generator).

Wet Weather Flow Storage and Pumping Facilities, Lawrenceburg, KY
Project Engineer. Above-ground 2 MG prestressed concrete wet weather flow equalization basin upstream of city's 3.3 mgd oxidation ditch wastewater treatment plant. Overflow weir box and 2.5-mgd duplex submersible pumping station convey peak wet weather overflows to basin. After peak wet weather flows recede, stored flows returned by gravity to interceptor sewer.

Jon Schubarth, PE

Vice President

Mr. Schubarth has over 29 years of experience in both private sector consulting and public sector utility engineering and management. As a consultant, his experience includes design and construction services for projects including water and wastewater systems, capital planning, permitting, pump stations, and treatment plants. As a utility manager, he managed, designed, and operated public water and wastewater systems including, staff planning, rate making, capital planning, budgeting, policy making, hydraulic analyses, as well as the design of projects.

Education

MSEnvE, Georgia Institute of Technology, 1993

BSE, Georgia Institute of Technology, 1992

Certification/License

Professional Engineer: KY, NY

Areas of Expertise

- Utility management and operation
- Collection and distribution systems planning and design
- Treatment plant planning and design
- Booster pump station design

Experience

- 29 total years
- 11 years with Hazen

Professional Activities

Water Environment Federation

American Water Works Association

Kentucky Rural Water Association

Remedial Measures Plan (RMP) Implementation Services, LFUCG, Lexington, KY

Project Manager for implementation of LFUCG's RMP required by USEPA Consent Decree. Project includes development of design standards and standard specifications, conceptual designs for all WWTP, wet weather storage, and pump station projects; a continuation of stakeholder involvement services; assistance with funding acquisition; peer reviews of all design plans and specifications developed by other design consultants; and coordination with regulatory agencies.

Program Management Services, LFUCG, Lexington, KY

Project Manager for program management of the sanitary sewer system to ensure compliance with all Consent Decree mandated initiatives. Provide all annual sanitary sewer program management services including, but not limited to coordination and provision of all sanitary sewer content for each Consent Decree quarterly and annual report.

Capacity, Management, Operations and Maintenance (CMOM) Implementation Services, LFUCG, Lexington, KY

Project Manager for implementation of CMOM related programs which are mandated by Consent Decree. General services include planning and scheduling various CMOM programs, procurement of specialized services and equipment, development of performance measures and standard operating procedures, and performance of field level evaluations and staff training.

Hazen

Wastewater System Operation, Warren County Water District, Bowling Green, KY
Operated and managed wastewater collection system including the supervision of field crews responsible for maintenance to collection system and pump stations; as well as all engineering, planning, industrial pretreatment, permitting, reporting, policy development, rate making, budgeting, and operational oversight.

Wastewater System Operation, Winchester Municipal Utilities, Winchester, KY
Assisted with the operation and management of a WWTP and wastewater collection system including all engineering, planning, industrial pretreatment, permitting, reporting, policy development, rate making, and budgeting. Additionally, developed and implemented a systematic sewer collector replacement program a comprehensive sanitary sewer master plan.

Floyds Fork WQTC Enhanced Biological Phosphorus Removal Feasibility Study, Louisville MSD, Louisville, KY
Project Manager for development of study that evaluated the feasibility of enhanced biological phosphorus removal. The WQTC is a 4-ring Orbal oxidation ditch which uses chemical addition (sodium aluminate) as primary means to remove phosphorus from wastewater. The new discharge permit for the plant is expected to require a lower effluent TP concentration, further increasing significant chemical costs at the facility. Study included development of sampling plan to determine current influent and in-plant phosphorus species; an evaluation of current plant operations; and evaluation and recommendations of process modifications to achieve BPR. The study will also evaluate the life cycle cost implications of switching to a true BPR strategy with chemical addition for final TP polishing.

Regional WQTC Solids Handling Study, Louisville MSD, Louisville, KY
Project Manager for development of study that evaluated the feasibility of satellite dewatering facilities at three WQTCs. The WQTCs currently haul all liquid sludge generated at each location by tanker truck to one central location for dewatering and drying. Evaluated the feasibility of adding dewatering at each of the three WQTCs to minimize costs and truck traffic associated with the current operation. Services included preliminary designs of proposed dewatering facilities, development of cost estimates for both existing and proposed dewatering procedures, development and evaluation of non-economic criteria, and report recommendations.

Seth Bradley, PE

Associate

Mr. Bradley is a member of the Midwest conveyance group. He has 15 years of experience in collection system modeling, design, construction and operations. He has assisted with implementation of LFUCG's Remedial Measures Plan for over 5 years, and has helped several utilities develop plans to address consent decree mandates, and implement and track progress towards those objectives.

Education

MSCE, University of Kentucky, 2007

BSCE, University of Kentucky, 2005

BA, Northern Kentucky University, 2004

Certification/License

Professional Engineer: KY

Areas of Expertise

- Hydraulic/hydrologic modeling
- Geographical information systems
- Wastewater collection system planning & design

Experience

- 15 total years
- 15 years with Hazen

Professional Activities

National Society of Professional Engineers

Kentucky Society of Professional Engineers

Water Environment Federation

Remedial Measures Plan (RMP) Implementation Services, LFUCG, Lexington, KY

Project Manager for Southeastern Hills Trunk Sewer, West Hickman E Trunk Sewer, and Plainview Trunk Sewer. Responsibilities included overseeing the design and construction process, and working with LFUCG staff, the engineer of record, and the contractor to ensure the project proceeds in LFUCG's best interest. In addition, other responsibilities on this project have included providing assistance with drafting RFPs to procure professional design services, and creation of an RMP manual to summarize key elements of the RMP.

CMOM Implementation, LFUCG, Lexington, KY

Project Engineer for the implementation of CMOM related programs mandated by LFUCG's Consent Decree. Responsibilities on this project included assistance with the development of performance measures and standard operating procedures, assistance with performance of field evaluations and staff training, and assistance with procurement of specialized services and equipment.

Capacity Assessment and Remedial Measures, Jefferson County, AL

Task Leader for the development of multiple capacity assessment and remedial measures for multiple basins. Capacity assessment analysis identified existing and future problem areas requiring remedial measures, and created maps and graphics summarizing capacity deficiencies. Remedial measures analysis identified improvements to provide a 2-year level of service. Potential projects included conveyance upsizing, pump station upgrades, EQ storage, or comprehensive rehabilitation.

Hazen

Regulatory Reporting, SD1 of Northern Kentucky, Fort Wright, KY
Project Manager to provide assistance in development of Consent Decree reports. SD1's amended consent decree requires submission of semi-annual and annual reports every year to track progress made towards compliance with the consent decree. In addition, a monthly discharge monitoring report is required by the Dry Creek WWTP KPDES permit. Provided assistance in creating draft reports, coordinating review/comments, and finalizing reports for submission to the regulators.

Updated Watershed Planning Development, SD1 of Northern Kentucky, Fort Wright, KY
Deputy Project Manager for development of the updated watershed plan. This project included developing future conditions models for 2023, 2029 and 2040 across SD1's service area, and developing an improvement plan for each horizon to meet SSO volume reduction and CSO percent capture goals as required by SD1's updated consent decree. This project included a robust alternatives analysis where the Optimizer™ software was utilized to optimize planned improvements through 2040.

Infoworks Sewer System Modeling Support, SD1 of Northern Kentucky, Fort Wright, KY
Project Manager. Provided support for the quarterly and annual report submittals to EPA and KDOW as required by the consent decree. This project also included as needed modeling support for over 650 various modeling tasks. In addition, provided watershed planning support, assistance for annual SSO list revisions, and model training sessions.

Lower Mill Creek Program Management for Post Construction Monitoring and Modeling, MSDGC, Cincinnati, OH
Task Leader. Phase 1 projects consist of a variety of projects including improvements related to sewer separation, conveyance, EQ, and real time controls. With these project complete, MSDGC was required was required to demonstrate compliance with the Wet Weather Improvement Program's Performance Criteria for CSOs. Led the development of a modeling plan to outline the project approach through post construction monitoring and modeling, and led development of the project report deliverables.

Tyler Bridges, PE

Senior Principal Engineer

Mr. Bridges has served as a Project Manager for the RMP program and has significantly contributed to over 10 RMP projects. In addition, he has also, completed several preliminary engineering reports and conceptual design memorandum for upcoming RMP projects.

He has 11 years of experience in the planning and design of water and wastewater facilities. He has managed and designed projects relating to wastewater pump stations, force mains, interceptor sewers, collector sewers, and treatment plants, as well as water distribution, pumping, and treatment facilities.

Remedial Measures Plan (RMP) Implementation Services, LFUCG, Lexington, KY
Project Manager. Manage projects for LFUCG-DWQ (RMP) through project design, bidding, construction, and closeout. Duties include maintaining contract directives, RMP schedule deadlines and capacity requirements, monthly progress meetings, shop drawing review, application for payment review and approvals, managing field orders, change orders and request for information. Projects managed have included sanitary pump stations, trunk sewers, force mains, and wet weather storage facilities.

Upper Cane Run Wet Weather Storage, LFUCG, Lexington, KY
Project Manager. Design of 2 MG above ground storage tank, 8.5-mgd wet weather pump station, diversion structure with screening, and other associated site improvements. Conveyance piping for the project included a 24-inch forcemain and 27-inch gravity sewer to convey flow to and from the storage tank located approximately 1,000 linear feet from the pump facilities. Also, coordinated design from all project disciplines.

Miami Trails Sanitary Sewer Improvements, FSD, Frankfort, KY
Project Manager. Design of approximately 3,000 LF of deep sanitary sewer with many sections greater than 20 feet deep. Project was designed to eliminate an existing duplex pump station. Design included considerations for deep construction and closure plan for the existing pump station.

Perkins-Crooked Creek Wet Weather Storage, Paducah-McCracken Joint Sewer Agency, Paducah, KY
Project Manager. Managed and completed design of 3 MG above ground concrete wet weather storage tank and associated infrastructure including 5-mgd wet weather pump station, flow diversion structure, new 24-inch and 18-inch gravity diversion sewers, site improvements, and grad-

Education

MEES, University of Florida, 2013

BSCE, University of Kentucky, 2010

Certification/License

Professional Engineer: KY

Areas of Expertise

- Planning, and design for lift stations and WWTPs
- Process modeling
- Wastewater disinfection
- Residuals and biosolids management

Experience

- 11 total years
- 2 years with Hazen

Professional Activities

American Water Works Association

Kentucky Society of Professional Engineers

Hazen

ing. Prior to design phase portion of this project, completed sanitary sewer modeling in XPSWMM to locate and size the proposed wet weather storage tank and associated pump station. Developed project plans and specifications. Compiled and coordinated state and federal permits and funding agency requirements.

West Frankfort Pump Station Design, FSD, Frankfort, KY
Project Engineer. Design of a new 7.2-mgd pump station to replace an existing undersized pump station. Design included site work, order control, and demolition of the existing pump station. Project included special consideration for future growth. The pump station was designed with an additional slot for a future pump and corresponding new force main.

West Hickman Trunk B, LFUCG, Lexington, KY
Project Engineer. Design of approximately 4,000 LF of 48-inch of 54-inch sanitary sewer. The project included detailed consideration of how to connect multiple large diameter sewers into a single junction box. Also included special considerations for flotation risk of the pipeline and consideration of multiple pipeline materials.

Homewood Wet Weather Storage, Paducah-McCracken Joint Sewer Agency, Paducah, KY
Project Engineer. Design of 0.5 MG above ground wet weather storage tank, 350 gpm wet weather pump station, and associated site work and sanitary sewer conveyance improvements. The project was designed to capture sanitary sewer overflows and divert them to an above ground prestressed concrete tank.

Corning Forcemain Design, Harrodsburg, KY
Project Manager. Managed and designed approximately 8,000 LF of 8-inch force main to divert wastewater flow from Corning Glass away from overloaded sewers in the downtown area to a different portion of the City's collection system with available capacity. Developed project plans and specifications. Completed permitting and funding agency coordination. Provide construction administration services throughout construction.

Westerly Chemically Enhanced High-Rate Treatment, NEORSD, Cleveland, OH
Project Engineer. Contribute to the design of a new chemically enhanced settling and high-rate disinfection system to treat up to 411 mgd during wet weather events. Work focused on the design for rehabilitation of existing 18,000 gpm (25.9 mgd) dewatering pumps and motors and the general site improvements include yard piping. Work on the dewatering pumps included field performance testing of the existing pumps and design and coordination for the pump and motor rehabilitation.

Mike Asalon, PE

Senior Principal Engineer

Mr. Asalon has participated in the RMP Program Management as a Project Manager on several projects that are currently in the design phase as well as assisting on technical memos and reports as requested by LFUCG.

Education

BSCE, University of Kentucky, 2003

Certification/License

Professional Engineer: KY, TX, VA, MD, DC

Areas of Expertise

- Project management
- Site design
- Stormwater conveyance planning and design
- Bidding, construction administration, and funding services
- Master planning for site development

Experience

- 17 total years
- <1 year with Hazen

Professional Activities

Kentucky Society of Professional Engineers

Consent Decree Program Management, LFUCG, Lexington, KY
Project Manager on the following projects included on the RMP (Remedial Measures Plan) Project List to eliminate SSOs.

- Wolf Run F – Replacement of approximately 4,689 LF of sanitary sewer to be replaced with 21-inch pipe. Project includes and bore and jack. Currently in Design Phase.
- Wolf Run G – Replacement of approximately 4,057 LF of sanitary sewer. To be replaced with 18-inch and 21-inch pipe. Project includes bore and jack. Currently in Design Phase.
- Parkers Mill – Replacement of approximately 5,333 LF of sanitary sewer. To be replaced with 15-inch, 18-inch and 24-inch pipe. Project includes bore and jack and creek crossings. Currently in Design Phase.
- Floyd Drive Trunk – Replacement of approximately 2,700 LF of sanitary sewer. To be replaced with 8-inch, 10-inch, 12-inch and 15-inch pipe. Project includes bore and jack. Currently in Design Phase.

Provided LFUCG with evaluations for projects included on the RMP Project List.

- Corman/Louden/7th Street Trunk and Wet Weather Storage – Provided technical memo to assist in determining the most efficient route for the new trunk line to take to get to the new wet weather storage tank location.
- Assisted LFUCG in compiling the 2022 Consent Decree Schedule Extension Report.
- Requesting extension of full compliance deadline to be moved from 2026 to 2030.
- Provided documentation outlining project achievements to date and why LFUCG is seeking relief from the current deadline.

East Frankfort Interceptor Improvements Phase III, Frankfort, KY
Project Engineer. Provided civil/site design for a project that mitigates capacity concerns, SSOs, limits the number of new pump stations, and

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allows for future growth in the East Frankfort sewershed. The project includes a large diameter gravity sewer interceptor to take flow from the sewershed to the WWTP without the use of a pump station. There are two new siphons, one under the Kentucky River and a new wet weather storage tank that are part of the project as well.

South Sewer Extension, GMWSS, Georgetown/Scott County, KY
Construction Administration. Review shop drawings and change order requests for a project that involves the expansion of the existing sanitary sewer collection system to include properties that discharged to two privately owned package wastewater treatment plants or septic systems. A new interceptor sewer, a 4,000 gpm pump station and a new force main will provide service into the existing sanitary sewer system.

QIP Year 3 Projects, Kentucky American Water, Lexington, KY
Project Manager. As part of the year 3 QIP projects we designed the replacement of approximately 6,500 LF of 6-inch water line to be replaced with 8-inch ductile iron. Provided design that included erosion and sediment control plans, maintenance of traffic plans and paving plans. All necessary permits were acquired.

Worth Ellis, PE

Associate

Mr. Ellis has experience with handling most aspects of project design and management beginning with proposals and taking them through construction administration.

Education

MBA, Applied Management, Indiana Wesleyan University, 2015

BS, Civil Engineering, University of Kentucky, 2007

Certification/License

Professional Engineer: KY

Areas of Expertise

- Civil site design
- Storm modeling
- Sanitary sewer conveyance

Experience

- 15 total years
- <1 year with Hazen

Professional Activities

Water Environment Federation

Kentucky Society of Professional Engineers

Remedial Measure Plan (RMP) Implementation Services, LFUCG, Lexington, KY

Project Engineering Manager for the DWQ on the RMP being implemented to address the EPA's Consent Decree. Responsibilities on the various gravity sewer, pump station, and wet weather storage tank projects included conducting site visits, coordinating projects with other utility companies, writing proposals, writing design standards, coordinating projects with design engineers, attending progress meetings, reviewing meeting minutes, design plan reviews, and coordinating construction with the design engineers and contractors. Projects included:

- Wolf Run Wet Weather Storage
- UK Trunk A
- West Hickman 7 Wet Weather Storage
- West Hickman Wet Weather Storage
- Expansion Area 3 Pump Station
- Lower Griffin Gate Trunk
- East Hickman Wet Weather Storage
- East Hickman Pump Station
- Woodhill Trunk
- UK Truck C & D
- Shandon Park/Winburn Trunks

Camp Taylor Sewer Replacement Area 2A, Louisville MSD, Louisville, KY

Project Engineer for the removal, replacement, and remediation of the sanitary sewer system within the Camp Taylor neighborhood. The project consisted of the design and construction of approximately 17,000 LF of new gravity sewer ranging in diameter from 8-inches to 12-inches and 115 new manholes. Additionally, this project included the rehabilitation of approximately 5,200 LF of existing sewer pipe as well as 28 existing manholes. Engineering responsibilities included survey and geotechnical coordination as well as construction plan production.

Ecton and Plainview Trunk Sewers, LFUCG, Lexington, KY

Project Manager for two of the 10 remaining RMP projects within the West Hickman watershed. The Ecton trunk sewer is approximately 5,550 LF and the Planview trunk is approximately 2,000 LF of sanitary sewer

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replacement due to known or anticipated SSOs. Responsible for preliminary alignment reports and coordination with regulatory agencies/ utility companies as well as overseeing the upcoming final design and future construction administration.

Forest and Fitzgerald Storm and Sanitary Improvements, SD1 of Northern Kentucky, Erlanger, KY

Project Manager assisted with the design for the upsizing of storm and sanitary lines to eliminate reoccurring sanitary sewer overflows. The project includes upsizing single or double pipe upsizing throughout the corridor to achieve the flows necessary during the design storm event as dictated by the consent decree. Project responsibilities and plan production included, review of existing information, project area survey coordination and workup, preliminary design memorandum, geotechnical investigation and report coordination, detailed design and storm modeling, easement acquisition assistance, permit preparation, agency coordination, and submittals and bidding assistance.

UK Trunk Sewer C, D, & E, LFUCG, Lexington, KY

Project Manager in charge of design, permitting, and construction administration for a proposed sanitary sewer trunk line from Oliver Lewis way to East High Street. The project included approximately 205 LF of 8-inch sanitary pipe, 71 LF 10-inch sanitary pipe, 94 LF of 12-inch sanitary pipe, 25 LFt of 15-inch sanitary pipe, 80 LF of 18-inch sanitary pipe, 4,208 LF of 21-inch sanitary pipe, 1,822 LF of 24-inch sanitary pipe, 1,898 LF of 27-inch sanitary pipe, 595 LF of 30-inch sanitary pipe, and 67 manholes ranging between 4 and 6-feet in diameter. Project responsibilities and plan production included, survey coordination and workup, site visits, preparing meeting agendas and summaries, client coordination, hydro-excavation of existing utilities coordination, maintenance of traffic plan coordination, preparing plan and profile sheets, KYTC Encroachment Permit submittal preparation and coordination, KDOW submittal preparation and coordination, specification preparation, bidding assistance, and construction administration.

Licking River Siphon Conveyance Upsizing Phase 2, SD1 of Northern Kentucky, Wilder, KY

Project Manager in charge of design and construction administration for the upsizing of approximately 1.5 miles of sewer to eliminate reoccurring sanitary sewer overflows along Mooch Road. The project includes upsizing single or double pipe upsizing throughout the corridor to achieve the flows necessary during the design storm event as dictated by the consent decree. Project responsibilities and plan production included review of existing information, project area survey coordination and workup, preliminary design memorandum, geotechnical investigation and report coordination, detailed design, easement acquisition assistance, permit preparation, agency coordination, and submittals, and bidding assistance.

Sean FitzGerald, PE

Vice President

Mr. FitzGerald has 31 years of collection system experience and currently serves as Hazen's asset management group leader. He has extensive experience in conveyance asset management helping numerous utilities develop and implement programs to proactively plan for operations, assessment and renewal.

Education

MSEnvE, University of Cincinnati, 1994

BSCE, University of Cincinnati, 1992

Certification/License

Professional Engineer: KY, OH, NY, TX, MN, DC

NASSCO PACP Certification

BAM-I Asset Management Certification

Areas of Expertise

- Hydraulic analysis
- Pipe and pump station design
- Sewer and water master planning
- Sewer and force main assessment and rehabilitation

Experience

- 31 total years
- 16 years with Hazen

Professional Activities

Water Environment Federation - Collection System Committee

Ohio Water Environment Association - Collection System Committee

American Waterworks Association

Kentucky-Tennessee Water Environment Association

Remedial Measures Plan (RMP) Implementation Services, LFUCG, Lexington, KY

System-wide planning leader for the development of the RMP to eliminate recurring SSOs and WWTP capacity issues under current and future conditions. This project is being done as part of a Consent Decree between LFUCG and USEPA and the State of Kentucky. Hydraulic models developed as part of the capacity assessment phase were used to develop and evaluate system improvements to ensure capacity and eliminate recurring overflows. Providing technical support for the implementation phase.

CMOM Implementation, LFUCG, Lexington, KY

Assisted with the implementation of comprehensive CMOM program. Responsibilities included developing SOPs, training, and overall program implementation based on their approved CMOM Program.

Asset Management Program, Jefferson County Department of Environmental Services, Birmingham, AL

Technical Lead. Assisted in the development of a prioritized condition assessment and O&M program with the goal of addressing overflows, many of which are related to O&M issues. Also includes the development of asset management software tools that will enable the County to better manage its operations and to better target collection system spending. The program so far has resulted in a greater than 60% reduction in dry weather overflows. An automated cleaning frequency algorithm was developed and is being implemented as a software tool that will automatically generate work orders based on cleaning findings. Acoustic inspections are also being used to optimize the program.

Consent Order Implementation Program Management, Fort Lauderdale, FL

Technical Advisor. The Florida DEP Consent Order requires the City to develop and implement a robust AM/CMOM and capacity improvement

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program to reduce spills associated with lack of capacity, pipe failures and blockages. Played key role in gaps analysis, development of levels of service and performance measures, and risk assessment.

CMOM Program Development and Implementation, Sarasota County, FL

Task Lead. The program involves evaluation and improvement all aspects of their sewer collection system assets including gravity sewers, force mains and lift stations. The first year included a gap analysis and CMOM program development that includes a series of action items to fully implement the CMOM Program. Subsequent activities include the development of the Collection System Asset Management Program, operations training, performance management, as well as SSES support to reduce I/I and reduce system overflows. The County has over 12 different departments that are involved in managing, operating, and maintaining over 770 miles of gravity sewers, 730 lift stations and 530 miles of pressurized force mains. Hazen will help the County become a "Best in Class" Utility with an outstanding CMOM program that is highly effective in resource allocation to protect the public health & environment and promote financial stewardship & sustainable growth.

Updated Watershed Plan, SD1 of Northern Kentucky, Fort Wright, KY

Project Manager. This plan is a revision and optimization of the previous plan developed in 2009. It is in response to revised Consent Decree signed in 2019 and will include remedial measures through 2040 to eliminate SSOs to the 2-year storm and reduce CSOs to meet the CSO policy.

Integrated Long Term Control Plan, Marion OH

Technical Lead. Included development of detailed hydraulic model and system analysis to address system problems including storm flooding, CSOs, SSOs, and basement back-ups. Evaluation included hydraulic impacts within collection system and at the WWTP in the collection system model. Remedial measure options included peak flow conveyance to the WWTP, in-line storage, upstream detention, and off-line equalization.

Sewer System Master Plan, Department of Environmental Services, Butler County, OH

Project Manager. The project included a recalibration of a County-wide model to account for the effect of antecedent moisture conditions on rainfall derived I/I and the development of future condition models for four separate planning horizons. The unique feature of the model was the use of model wet weather parameters to simulate the rainfall response of new development as the system grows. The models were then used to size and analyze system improvements to address wet weather issues and growth through ultimate development conditions.

Ross Horvath, PE

Senior Associate

Mr. Horvath is the Midwest conveyance practice leader with 27 years of experience. His infrastructure project experience includes waterline distribution and transmission main design, HDD and Bore & Jack trenchless design, and gravity sewer design, routing studies, preliminary engineering and basis of design reports, cost estimating, and technical specifications.

Education

BSCE, University of Cincinnati, 1995

Certification/License

Professional Engineer: OH

Areas of Expertise

- Environmental engineering
- Gravity sewer and force main design
- Real-time control
- Watershed planning
- H/H modeling
- Green infrastructure
- Stormwater & detention basin design
- Water distribution and transmission main design
- Specifications
- Cost estimating

Experience

- 27 total years
- 8 years with Hazen

Professional Activities

Water Environment Association

Asset Management Program, Jefferson County, AL
Following model updates, recalibration, and capacity assessments, Task Leader overseeing the development of alternatives to eliminate SSOs by categorizing and prioritizing problem areas for remedial measures (RM). As remedial measures get implemented and designed. Responsible for performing design milestone peer quality reviews of local consultant RM design projects. Eleven RM projects have been reviewed through various design stages of 30%, 60%, and 90%.

Lexington and Payne CSO Interceptor, Louisville MSD, Louisville, KY
Design Technical Advisor and Quality Reviewer for project that diverts CSO from nine interception points and conveys the wastewater to a drop shaft at the head end of the Ohio River Tunnel for storage. The interceptor is approximately 5,500 LF length and consists of 60-inch to 102-inch diameter PCCP. Diversion structures intercept flow from 24-inch to 60-inch diameter pipes and route flow to control structures, utilizing weirs and actuated gates, to provide operational flexibility to control flow to the interceptor and tunnel to meet CSO reduction requirements.

South Sewer Extension, GMWSS, Georgetown/Scott County, KY
Performed comprehensive quality review of the 30% and 90% design deliverables. The design consists of eliminating two failing package WWTPs and two pump stations with the construction of 16,800 LF of 16-inch, 24-inch, and 27-inch trunk sewer; 5,700 LF of 15-inch sewer, approximately 16,200 LF of 8-inch local sewer; a new 4,000 gpm Cane Run pump station, and 3,200 LF of parallel 12-inch and 18-inch force mains. The trunk sewer and pump station have been sized to eliminate up to 4 additional pump stations in the future.

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Middlebury Separation Green Project, CSO Rack 5 and 7, City of Akron, OH
Design Lead for integrated project that separated approximately 190 acres of two urban combined sewer service areas with 2,800 LF of new 8-in to 12-in sanitary sewer, 14,800 LF of new 12-inch to 48-inch storm sewer, and a 1.1 acre constructed storm water wetland for treatment of the storm water quality volume. Design included the review of CCTV inspections and the design of approximately 4,700 LF of 30-inch to 54-inch CIPP lining of existing brick and segmental block sewer.

Updated Watershed Plan, SD1 of Northern Kentucky, Fort Wright, KY
Task Lead evaluating alternatives and preparing cost estimates. This project includes developing future conditions models across SD1's service area, developing an improvement plan to meet SSO volume reduction, and CSO percent capture goals as required by SD1's updated Consent Decree. The updated plan substantially reduced the original watershed plan cost by leveraging lower EQ tank construction costs, using more realistic future development projections, and utilizing coordinated control methods to optimize collection system capacity.

Lakeside Redirect, Middletown, OH
Lead Conveyance Designer for the City's Consent Decree project to redirect 10 mgd of stormwater flow out of the combined sewer to reduce frequency and volume of CSO. Major design components included a 10-mgd pump station, a 5,260 LF 20-inch force main, a 3,300 LF 18-inch sanitary sewer, two jack & bore crossings of a Norfolk Southern railroad, diversion structure with bending weir, and pump station site improvements.

Wickstead Road Sanitary Relief Sewer Design, Jefferson County, AL
Lead Designer of project to provide additional conveyance capacity to eliminate persistent SSOs. The replacement sanitary relief sewer consists of approximately 11,440 LF of 8-inch to 30-inch ductile iron pipe and included trenchless construction. Various alternate alignments were considered that included replacing and upsizing sewer along the existing sewer alignment coupled with new relief sewer alignments that pick-up and off-load flow to locations further downstream.

SOID Sanitary Sewer Relocation, Hamilton, OH
Project Manager and lead designer to replace and relocate approximately 6,000 LF of 24-inch sanitary sewer within Gilmore Metropark. The sewer's horizontal alignment was carefully selected to keep wetland impacts under 0.1 acre, considered a future bike path, and minimized easement requirements. A 42-inch 275 LF pilot tube auger bore was designed to cross under a wetland near the pump station site where the sewer discharges.

Marissa Golgosky, EIT

Assistant Engineer II

Ms. Golgosky has experience with sanitary and combined sewer system modeling for Consent Decree compliance, conveyance engineering, design of water line projects, and sewer placement projects. She has GIS experience managing data, geoprocessing data, and creating figures to accurately represent data. She also has experience in assisting with documentation of the engineering process.

Education

BS, Biological Systems Engineering, University of Nebraska, 2020

Certification/License

Engineer-In-Training: KY

Areas of Expertise

- Hydraulic/hydrologic modeling
- Water transmission and distribution systems

Experience

- 2 total years
- 2 years with Hazen

Professional Activities

American Society of Agricultural and Biological Engineers

Soil and Water Conservation Society Member

Remedial Measures Plan (RMP) Implementation Services, LFUCG, Lexington, KY

Assist with various tasks within the RMP scope of projects such as standard detail design, design alternative optimization workshops for multiple RMP projects, and as needed support for the management of construction projects for LFUCG-DWQ RMP through project design, bidding, construction, and closeout.

Consent Decree Compliance Support, Infoworks Modeling, SD1 of Northern Kentucky, Fort Wright, KY

Complete monthly discharge monitoring report modeling tasks to analyze SSOs and CSOs within the existing system. Assist with the completion of semi-annual and annual reports highlighting the progress in complying with the District's Amended Consent Decree. This includes summarizing model results of completed projects and future build-outs, technical report writing, constructing data tables, and creating figures to visualize model results through the use of GIS.

East Frankfort Interceptor Final Design Phase III, FSD, Frankfort, KY

Assistant Engineer supporting project design, system modeling, easement acquisition, QA/QC, drafting, and documentation of the engineering process. The proposed project includes installation of approximately 11,000 LF of new 30-inch interceptor, including two large siphons, and a 3.0 MG in-ground storage tank to resolve at least three upstream SSOs that occur during significant storm events. The use of siphons eliminates the need for pump stations thereby reducing the operations and maintenance required for upkeep and the associated cost for the city.

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Daniel Honeycutt, EIT

Assistant Engineer

Mr. Honeycutt has experience on water resources engineering with projects on conveyance and hydraulics that utilized modeling software. He has analyzed existing infrastructure and modeling results to create preliminary design reports for improvement projects on sewer trunks, pump stations, and wet weather storage facilities around Lexington. He also has 6 years of experience working at a municipal wastewater treatment plant with a bachelor's degree in biology.

Education

BSCE, University of Kentucky, 2021

BS, Biology, University of Kentucky, 2012

Certification/License

Engineer-In-Training: KY

Areas of Expertise

- Wastewater treatment systems
- Conveyance

Experience

- 6 total years
- 1 year with Hazen

Professional Activities

American Society of Civil Engineers

Water Environment Federation

- Kentucky Water and Wastewater Operators Association

Remedial Measures Plan (RMP) Implementation Services, LFUCG, Lexington, KY
Completed updates to Standard Detail Drawings and Specifications for RMP projects in response to market changes, client preferences, and updated technologies. Compiled maps to be used by LFUCG based on changes to council districts and projects completed or changed. Assisted in value engineering assessments for project design and construction. Aided in writing a letter to the EPA outlining the need for a revised schedule for the Consent Decree Judgment. Compiled supporting documents justifying the request through data on completed RMP projects and recent changes in the construction industry that affect LFUCG's ability to meet the completion timeline.

North Elkhorn Wet Weather Storage Tank, LFUCG, Lexington, KY
Preliminary design of alternatives for a 20.7-mgd pump station associated with a 6 MG wet weather storage tank as required under the remedial measures plan for the EPAs Consent Decree.

Greenbrier #2 Pump Station and Trunk Improvements, LFUCG, Lexington, KY
Preliminary design of alternatives for the rehabilitation of an existing pump station to accommodate 0.77 mgd flow and to upgrade the down stream gravity trunk to eliminate SSOs.

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Mint Lane Pump Station Improvements and Wet Weather Storage Facilities, LFUCG, Lexington, KY
Preliminary design of alternatives for the rehabilitation of an existing pump station to be utilized for wet weather storage flow of 2.7 mgd and construction of a new pump station for 4.6-mgd to tie into the existing force main.

Cormon/Loudon/7th Street Trunk Improvements and Wet Weather Storage Facilities, LFUCG, Lexington, KY
Preliminary design of alternatives for the rehabilitation of existing gravity sewer and to incorporate diversion and the construction of wet weather storage facilities to eliminate downstream SSOs.

2022 Sanitary Sewer Rehabilitation, Paducah-McCracken Joint Sewer Agency, Paducah, KY
Design of infrastructure improvements in the sanitary sewer conveyance system targeting key areas with degraded performance.

Miami Trails Sanitary Sewer Design, FSD, Frankfort, KY
Design of a new sanitary sewer piping system in an established neighborhood with a failing pump station. The project eliminated one pump station in the area, with the potential to eliminate several more in the future through gravity flow.

Evan Nathan, EIT

Assistant Engineer

Mr. Nathan has experience in planning, design, and construction services for municipal water and wastewater clients. His areas of expertise include conveyance design, hydraulic modeling, asset management, and environmental permitting.

Education

MS, Earth and Environmental Engineering, Columbia University, 2021

BA, Biology, Skidmore College, 2015

Certification/License

Engineer-In-Training: KY

Areas of Expertise

- Municipal water conveyance system design
- Asset management
- Hydraulic modeling
- Environmental planning and permitting

Experience

- 2 total years
- 2 years with Hazen

Updated Watershed Plan, SD1 of Northern Kentucky, Fort Wright, KY
Assistant Engineer for updates to and calibration of the updated watershed plan hydraulic model. Added subcatchments, sewer lines, force mains, wet weather storage tanks, and equalization tanks to model using InfoWorks ICM software and calibrated to observed flow data using HazenQ software. Confirmed capacity for proposed developments using ArcGIS.

Lower Mill Creek Partial Remedy Model Calibration Report, MSDGC, Cincinnati, OH
Assistant Engineer for calibration report. Compiled calibration results of model characterizing post-construction conditions associated with the improvements.

Business Case Evaluations, Louisville MSD, Louisville, KY
Prepared business case evaluations for rehabilitating and/or replacing systems throughout the collection system. Analyzed multiple alternatives for each project. Updated BCE templates to be more actionable and user-friendly. Determined alignment for gravity sewer to replace frequently flooding pump station.

Membrane Backwash Pump Station Modeling, Columbia Power and Water Systems, Columbia, SC
Assistant Engineer for modeling membrane backwash pump station using InfoWorks software. Modeled multiple different orifice sizes to determine optimal conditions.

Downtown CSO Interceptor, Louisville MSD, Louisville, KY
Assistant Engineer for CSO fact sheets after construction of a new interceptor to convey flow from eleven combined sewer overflows to a deep tunnel system as part of Louisville MSD's amended Consent Decree and Integrated Overflow Abatement Program. New interceptor design included 2,250 LF of PVC pipe and PCCP ranging in diameter from 12-inches to 60-inches, three elevated diversion/control gate structures, six

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at-grade diversion structures, and one bending weir installation. Updated Louisville MSD's fact sheets according to as-built drawings.

2021-2040 Comprehensive Facilities Plan, Louisville Water Company, Louisville, KY

Assistant Engineer for 20-year lookahead providing status and recommendations throughout Louisville Water's organization. Compared asset depreciation to planned expenditures to provide recommendations for rehabilitation and replacement needs. Compiled all recommendations in user-friendly table. Measured water quality parameters against treatment goals. Edited and compiled report ensuring accuracy and consistency throughout chapters.

2021 Biennial Facility Inspection, Louisville Water Company, Louisville, KY

Assistant Engineer for system facility inspections and development of facility inspection reports as part of bond resolution requirements. Coordinated the work of discipline staff and subconsultants internally. Conducted visual inspections at both WTPs, raw water pump station, warehouse facility, Louisville Water Corporate Headquarters, and various booster pump station, master meter, storage facility, and pressure reducing valve stations throughout the distribution system. Tracked new observations and assigned a risk score, budget category, and responsible Louisville Water staff to ensure timely resolution. Project included use of Survey123 electronic data collection technology.

Retirement of Asset Letters, Louisville Water Company, Louisville, KY

Assistant Engineer. Evaluated data for each asset provided by Louisville Water, reached concurrence with Louisville Water's desire to retire the asset, and issued a letter stating concurrence.

Various Project Management Activities, Louisville Water Company, Louisville, KY

Assistant Engineer for proposal preparation, subconsultant agreement preparation, work plan preparation, and invoice tracking. Automated invoice tracking sheet using Microsoft Excel Macros.

Rhonda Baker

Senior Technician

Ms. Baker has experience working with funding and grant agencies such as the Kentucky Infrastructure Administration, Rural Development and Community Development Block Grant to ensure compliance with all requirements.

Education

University of Kentucky, Lexington, KY, 1994

Sullivan Jr. Business College, Lexington, Kentucky, 1987

University of Kentucky, Lexington, Kentucky, 1985

Areas of Expertise

- Preparation and submission of Authority to Award packages
- Preparation and submission of funding draw requests (KIA & RD)
- Review and tracking of certified payroll and Davis-Bacon quarterly compliance certifications
- Preparation and processing of bid documents and contract documents
- Preparation of pre-construction conference documents, progress meetings documents and minutes
- Preparation, review, and processing review of contractor applications for payment, change orders, submittals, RFIs, final adjusting change orders and project closeout documents.
- Preparation and submission of funding draw requests (KIA & RD)

Experience

- 22 total years
- 1 year with Hazen

Remedial Measures Plan (RMP) Implementation Services, LFUCG, Lexington, KY
Project / Funding Administrator. Assist in the creation and updating of technical specifications, construction administration of projects for LFUCG-DWQ (RMP) through project design, bidding, construction, and closeout. Duties include maintaining contract directives, RMP schedule deadlines, project documentation, application for payment review and approvals, and project closeout.

South Sewer Extension Contract 1, Georgetown/Scott County, KY
Construction / Funding Administrator. Construction administration and KIA and 319(h) funding administration for the design for a new 6.4 mgd divided wet well, fourplex submersible pump station with dual 12-inch and 18-inch force mains to serve a 500 unit mobile home park and the sanitary sewer service area of the south side of Georgetown. The pump station includes a 750-kW standby generator, ATS, VFDs and electrical, instrumentation, and storage rooms. The entire system includes approximately 34,145 LF of 8-inch to 27-inch gravity sewers, 103 precast manholes, 6,378 LF of dual 12-inch and 18-inch force mains and service connections to approximately 500 residential units.

WWTP Upgrade, Harrodsburg, KY
Construction / Funding Administrator. Construction administration and KIA funding administration for the replacement of raw sewage and wet weather flow equalization pumping equipment, and renovation of two lined, earthen lagoon "sideline" wet weather flow equalization basins (total storage volume of 3.6 MG). EQ basin work included basin linings replacement and new jet diffusion mixing equipment. Included digested sludge holding basin lining and media replacement in existing sludge drying beds.

WWTP Expansion, Harrodsburg, KY
Construction / Funding Administrator. Construction administration and KIA funding administration for the project including new pre-treatment building (screening and grit removal), replacement of existing RBC bio-

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logical treatment process with new oxidation ditch treatment process designed for biological nutrient removal, new circular final clarifiers, new return/waste sludge pumping, new ultra-violet disinfection facilities and renovation of existing anaerobic digestion facilities for conversion to aerated sludge holding basins.

WWTP Expansion, Versailles, KY
Construction / Funding Administrator. Construction administration and KIA funding administration for the expansion of the existing WTP from 4 mgd to 10 mgd along with the construction of a new 10-mgd raw water pump station and intake lines, security and communications at the new Pump Station, modifications to the controls and security at the existing Pump Station, closed circuit communication and data lines installed in conduit (by others) to the WTP, chemical feed modifications to the existing pre-chemical feed building, a filter building addition including a ballasted flocculation with high rate sedimentation process and six new filters along with piping, controls and appurtenances, a new disinfection building, modifications to an existing sedimentation basin, a new 900,000 gallon clearwell, a new 10-mgd high service pump station with post chemical feed facilities, earthen residual lagoon modifications.

East Hickman Wastewater Systems, LFUCG, Lexington, KY
Project Administrator. Construction administration for the design and construction of a new 6 MG wet weather storage tank, a new 18.1 MG per day wastewater pump station, and a 12.4 MG per day wet weather pump station, as well as replacement of approximately 2,000-feet of 12-inches to 6-inches gravity sewer lines.

Town Branch Wet Weather Flow Storage and Pumping Facilities, LFUCG, Lexington, KY
Project Administrator. Construction administration for Phase 1 of multi-phase wet weather storage facility adjacent to the WWTP. Includes 22 MG above grade, pre-stressed concrete structure with overflow weir box and a four-plex submersible pumping station to convey peak wet weather flows to tank. Tank diameter is 260 feet with side water depth of 55-feet. Later phase will expand to 44 MG storage facility. Some aspects, such as piping, wet well, concrete, motor controls (by Allen Bradley ControlLogix PLC networked via multi-mode fiber optic cable to treatment plant Ethernet-based SCADA system) of project designed during Phase I to be compatible with all subsequent phases, anticipating the maximum volume. Project is a deliverable of LFUCG's Consent Decree. Significant funding is provided by KIA Clean Water SRF and project won the 2018 ACEC Grant Award.

Odus Baker

Field Coordinator

Mr. Baker served 25 years in the US Air Force as a flight line supervisor, overseeing daily work tasks and coordinating with other Air Force squadrons. His responsibilities includes, observing, documenting, and reporting to design Engineers and Owners of the proper construction, installation, and backfilling of sanitary sewer as per approved construction drawings and RMP specifications.

Education

BS, Landscape Architecture, University of Kentucky, 2009

Areas of Expertise

- Project inspection
- Maintenance & operations

Experience

- 14 total years
- <1 year with Hazen

Liberty Road, LFUCG, Lexington, KY
Replacement and installation of 20 LF of 6-inches lateral sewer, 46 LF of 8-inches, 2737 LF of 21-inches, 372 LF of 24-inches, and 1936 of LF 27-inches sewer and appurtenant structures, 33 manholes, 450 LF of 36-inches tunneling, and 1 creek crossing.

Wolf Run Trunk Sewer D, E, LFUCG, Lexington, KY
Replacement and installation of 305 LF of 36-inches, 2400 LF of 30-inches, and 120 LF of 12-inches sewer pipe, 3250 LF of 27-inches, 1150 LF of 24-inches, 130 LF of 18-inches, 200 LF of 10-inches , and 50 LF of 8-inches gravity sewer and appurtenant structures .

UK Trunk C, D, E, LFUCG, Lexington, KY
Construction of 205 LF of 8-inches, 71 LF of 10-inches, 94 LF of 12-inches, 25 LF of 15-inches, 80 LF of 18-inches, 4208 LF of 21-inches, 1822 LF of 24-inches, 1898 LF of 27-inches, and 595 LF of 30-inches sanitary pipe, 67 manholes between 4-6-feet diameter. Project also included erosion control measures, pavement removal/replacement/striping, sanitary lateral connection, manhole removal/abandonment, boring operations, steel encasement, utility service replacements, and the safe loading of pipes.

Shandon Park/Winburn/Thoroughbred Acres Trunk Phase I, LFUCG, Lexington, KY
Replacement and installation of 305 LF of 36-inches, 2400 LF of 30-inches, and 120 LF of 12-inches sewer pipe, 3250 LF of 27-inches, 1150 LF of 24-inches, 130 LF of 18-inches, 200 LF of 10-inches , and 50 LF of 8-inches gravity sewer and appurtenant structures.

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West Hickman Trunk D, LFUCG, Lexington, KY
Construction of 1190 LF of 54-inches, 2700 LF of 48-inches, 15 LF of 27-inches, 200 LF of 24-inches, 15 LF of 18-inches, 1160 LF of 12-inches, 20 LF of 10-inches, and 360 LF of 8-inches sanitary sewer, 41 manholes, 4 tunnels beneath W Hickman Creek or tributaries thereof measuring 420 LF of 60-inches, 125 LF of 72-inches, 170 LF of 60-inches, and 230 LF of 24-inches.

Lower Griffin Gate, LFUCG, Lexington, KY
Construction of 17 manholes (13 - 5-feet diameter, 3 - 6-feet diameter, 1 - 8-feet diameter, 100 LF of 15-Inches, 1988 LF of 21-inches, 2172 LF of 30-inches gravity sewer.

West Hickman Trunk B, C, LFUCG, Lexington, KY
Construction of 3561 LF of 60-inches, 3424 LF of 54-inches, 602 LF of 48-inches, 288 LF of 42-inches, 247 LF of 36-inches, 37-inches of 24-inches , 50 LF of 18-inches, 284 LF of 10-inches, and 163 LF of 8-inches sanitary sewer, 36 manholes, 2 structures of 12-feet x 6-feet, 3 crossings of West Hickman, 1 crossing unnamed tributary of W Hickman, 18 manholes abandoned, safe load 624 LF of 48-inchesand 42-inches RCP.

Newtown Pike Ext. (Testing Only), LFUCG, Lexington, KY
Document testing of 2512 LF of 10-inches, 1556 LF of 18-inches, 1121 LF of 27-inches, 74 LF of 30-inches, 386 LF of 42-inches gravity sewer, and 52 manholes.

Woodhill Trunk Sewer Replacement, LFUCG, Lexington, KY
Construction of 70 LF of 8-inches, 10 LF of 10-inches, 15 LF of 12-inches, 205 LF of 18-inches, 615 LF of 24-inches, 715 LF of 24-inches, 1225 LF of 27-inches, 1395 LF of 30-inches gravity sewer, 230-feet - 36-inches jack and bore, 230-feet - 42-inches jack and bore.

Idle Hour, LFUCG, Lexington, KY
Construction of 2287 LF of 21-inches, 195 LF of 10-inches, 710 LF of 8-inches gravity sewer, 34 manholes (26-4-inches diameter, 4-5-feet diameter, 4-6-feet diameter)

Century Hills Trunk Sewer Replacement, LFUCG, Lexington, KY
Construction of 3340 LF of 8-inches, 15-inches, 18-inches 21-inches, and 24-inches gravity sewer, 240-feet of 30-inches jack and Bore, 170-feet 36-inches jack and bore, 23 manholes (19-4-feet diameter, 2-5-feet diameter, 1-6-feet diameter, 1-8-feet diameter.

East Lake Trunk Sewer Replacement, LFUCG, Lexington, KY
Construction of 1163 LF of 21-inches, and 783 LF of 18-inches gravity sewer, 10-4-feet manhole, 1-8-feet manhole.

Paula Glasford

Principal Designer

Ms. Glasford is a water and wastewater engineering designer with 27 years of professional experience specializing in GIS applications and services and a demonstrated ability to provide engineering design, analysis & research services.

Education

BA , University of Kentucky, 1995

Certification/License

NASSCO Certified; PACP & MACP

Areas of Expertise

- Water distribution systems
- Wastewater conveyance systems
- SSES and inflow/infiltration (I/I)
- CSO, SSO, and regulatory requirements
- Capital improvement programs

Experience

- 27 total years
- 7 years with Hazen

Remedial Measures Plan (RMP) Implementation Services, LFUCG, Lexington, KY

Southeastern Hills Trunk Sewer - Provided CCTV review or pre and post construction for this RMP project which includes upsizing ~4,600-feet of 8-inch and 15-inch sewer to 15-inch and 24-inch diameter. Upsizing is required to eliminate recurring SSOs. Sewer alignment is through an existing residential neighborhood, and includes open cut installation, pipe bursting, and tunneling beneath Appian Way

Collection System Asset Management Program, Jefferson County, AL

The collection system asset management program includes the entire collection system consisting of approximately 3,200 miles of sanitary sewer, 80,200 manholes, and 174 pump stations. The program includes planning, hydraulic modeling, evaluation, flow monitoring coordination, rehabilitation design, pipe upsizing, capacity assessment and remedial measures plan development, overflow reporting, and other tasks associated the collection system. These projects were designed to eliminate infiltration into existing sanitary sewers. Duties include evaluation of the condition of each system, determining the source of the problems, preparation of plan, and aide with the bid documents for construction. Each project included trenchless lining of damaged sewer lines, repair and replacement of manholes, mainline point repairs, service lateral repairs, and replacement of mainlines. Paula Supports the program creating plans, profiles, data driven tables for the rehab assets, and CCTV review

Capacity, Management, Operations and Maintenance (CMOM), Buckeye, AZ

GIS Lead in creating data driven mapping to prioritize CCTV cleaning of (935+) pipe assets for 2020, and future years. Published geodatabase for client field crews to utilize with ArcGis Online and survey 123.

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2018 Water and Wastewater Master Plan Update, Sunrise, FL
GIS Lead. Created data driven mapping of 38 force mains and 108 water pipes for priority CIP maintenance. The 2018 Water and Wastewater Master Plan Update (to the 2008 Water and Wastewater Master Plan) is based on a planning period through the year 2040.

Blueprint Linden Artane-Parkwood Project, Columbus, OH,
Civil 3D Design support to alleviate SSOs and improve green infrastructure in a densely populated residential area of approximately 150 acres. Challenges presented during design were related to the generally flat terrain and limited space for drainage containment. Proposed design utilized several lots owned by the municipality as proposed basins to help improve the flooding effects on the surrounding population and the addition of storm piping to redirect flow into existing drainage systems better equipped to handle the capacity.

NMC, CMOM, and IOAP Professional Services, Payne Street Rain Barrel & Downspout Disconnection Pilot Program Phase I, Louisville MSD, Louisville, KY
Assisted with a program to offload the CSS by disconnecting downspouts and installing rain barrels on approximately 100 properties on Payne Street. The 15Thousand Farmers coalition, Metro Council District 9, MSD, and O'Brien & Gere worked together on this project to educate the public on rain barrels. Organized volunteer group to install rain barrels, and disconnect any connected downspouts. Tracked the benefit of rain barrels and downspout disconnection to reduce or eliminate the frequency and volume of CSOs in the neighborhood. Created a GIS database including disconnected properties for use with stormwater and sewer modeling efforts.

Holly Hills I Meadowview SSES, FSD, Frankfort, KY
Provided support for a comprehensive sanitary sewer evaluations. Identified excessive groundwater (infiltration) and rainwater (inflow) induced flows within the City's sanitary sewer system, to evaluate the overall system condition, and to prioritize and recommend rehabilitation to correct identified system deficiencies and reduce extraneous flows. This project included a review of existing data, field testing, and monitoring including flow monitors, CCTV investigation, dye testing, and GIS mapping of all the defects and the proposed sewer rehabilitation recommendations.

Renato Nojadera, PE, PMP

Senior Associate

Mr. Nojadera has successfully managed projects in various stages of design and construction, including overseeing a water main replacement program, design of new water mains, construction of wastewater pumping stations.

Education

BSCE, University of South Florida, 2008

Certification/License

Professional Engineer: MD

Project Management Professional

NASSCO: PACP, MACP, LACP

Confined Space Certified

Areas of Expertise

- Program/project management
- Construction administration and management
- e-Builder & Procore administrator
- Project controls/Master scheduling /Cash flow in P6

Experience

- 18 total years
- 8 years with Hazen

Professional Activities

American Society of Civil Engineers

Project Management Institute

Lexington and Payne CSO Interceptor and Downtown Interceptor, Louisville MSD, Louisville, KY

Schedule Reviewer. This project consists of installing 102-inch, 96-inch, 84-inch, and 36-inch PCCP pipe in bedrock underneath Beargrass Creek. There are 8 diversion and control structures that divert flow to the proposed interceptor pipe eventually discharging to MSD's CSO tunnel drop shaft #3. The DTI has four areas of focus that divert flow to the new gravity sewers eventually discharging to MSD's CSO tunnel drop shaft #1. Performed the initial detailed schedule reviews to establish the construction project baselines and currently performing monthly reviews of the contractor's progress schedules.

Asset Management Program, Jefferson County Department of Environmental Services, Birmingham, AL

Project Controls/Master Scheduler. Assisted the County in prioritizing and strategically targeting where to best spend its significantly reduced O&M budgets, capital improvements budgets, and severely depleted manpower. Additionally assisted in the creation of a construction management plan, which provided procedures on how to use Primavera Contract Manager, SharePoint and other tools effectively to manage construction projects on the program. Developed a master schedule using Primavera P6 for all capital projects within the program (over 150). Established standardized life cycle templates used for each project and estimated costs for design and construction where added cash flow reports were utilized for the entire CIP program.

Wastewater Consent Order Program, Task Order No. 1, Fort Lauderdale, FL

Master Scheduler. The City entered into a consent order which identified various corrective actions along with completion deadlines required to improve sanitary sewer service. The task order was issued to set up the initial programmatic services for the program, which included preparing a CO program schedule, developing a master program cost model, and generating a corrective actions cost update report. Created a cost-loaded, master program schedule that consisted of 28 components, 21 projects, and 7 programs. Established a standard project life-cycle with the client

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and implemented it on each project. Cost tracking was emphasized, and several Level of Effort activities were created on each project to track soft costs, design fees, construction cost, contingencies and program management. Provided training for program staff so that monthly program updates can be performed locally.

Program Management Services, Water Utilities, Baltimore, MD
Program Manager. Assisted the City with meeting their annual water main rehabilitation and replacement design goals of 15 miles of water main renewal per year. Responsibilities included program management, project management, design oversight, creating and maintaining standards, coordinating with other agencies, technical design review, permitting, community outreach, and training staff. Managed a portfolio of 20 water contracts in the design and bid phases, totaling approximately 63 miles of design work. Managed the in-house design team and helped supplement the planned CIP projects to achieve the FY'17 15-mile goal. Performed claims analysis, post-award services, prepared specifications, cost estimates, created a cost and resource loaded master schedule of the entire program, which was used to forecast renewal mileage and upcoming milestones.

Water Main Replacement Program Management, Baltimore, MD
Deputy Program Manager. Led four sub-consultant teams to oversee the City's water infrastructure replacement program. Work included creating master schedules, coordinating with review agencies and design consultants to ensure timely completion of the work; reviewing invoices and progress reports; administrating MBE/WBE involvement and providing oversight of all documentation policies and procedures. Assisted with updating the City's Capital Improvement Program for water utilities

Olentangy WTP Expansion, Del-Co Water Company, Delaware, OH
Construction Schedule Reviewer. Work consists of providing additional potable water treatment capacity at the WTP to increase process flow from 19.2 mgd to 28.8 mgd. In addition to site work, yard piping, and valve modifications, major components of work include a new raw water vault and meter, additional rapid mix equipment, softening basin, chemical storage and feed equipment improvements, expansion of the existing filter building and a new clear well on site.

Vivek Sai, PE, PMP

Senior Associate

Mr. Sai is a strategic member of the Geographic Information System/Spatial Information Systems Management (GIS/SIM) group with Hazen.

Education

MS Chemical Engineering, University of South Florida, 2002

BE Chemical Engineering,Shivaji University, 1998

Certification/License

Professional Engineer: FL, AL

Project Manager Professional (PMP)

Areas of Expertise

- Hydrology and hydraulic modeling
- Water and wastewater facility design
- GIS – ArcGIS
- Database design and development (SQL server, access)
- Data collection and processing
- Utilities infrastructure management

Experience

- 20 total years
- 18 years with Hazen

Professional Activities

American Water Works Association, AWWA

Water Environment Federation, WEF

American Institute of Chemical Engineers, AIChE

Mr. Sai has over two decades of experience in environmental engineering, asset management, GIS and information systems. He has developed and updated numerous water and wastewater hydraulic models in a variety of software packages. His experience also includes a multitude of projects related to GIS application development, utility infrastructure, conducting sewer evaluation studies, condition assessments and database management, and construction-related services

Asset Management Program, Jefferson County Department of Environmental Services, Birmingham, AL

Project Engineer. Assisted in implementing and customizing its Cityworks CMMS. Aided in developing workflows, creating custom work order and service request templates, using APIs, performing analytical assessments, identifying and developing resolutions using SQL query tools, and using work orders, asset management and GIS features database to develop dashboards and visualization tools to track several KPIs. Through this effort, JCESD has been able to further optimize its O&M program and leverage the data for linkage into Power BI for powerful visualizations and analysis. He has developed several work flows to successfully implement AM program and construction management.

Capacity, Management, Operations and Maintenance Program Plan, Sarasota County, FL

The CMOM program involves evaluation and improvement all aspects of their sewer collection system assets including gravity sewers, force mains and lift stations. This program will help the County achieve many short-term and long-term goals with regards to: regulatory compliance, wastewater spill (SSO) evaluation and reduction, information management and software integration, CMMS & GIS integration tools, environmental water quality, capacity assessment and assurance, collection system inspection, maintenance & rehabilitation, assessment and rehabilitation, staff safety and training programs, asset management, communications and customer service, budgeting, emergency response and preparedness. As part of the 5-year program, helped in integration of GIS and CMMS system, Maximo. Helped the County in creating custom Work Orders for SSO data collection and CCTV inspections. Developed several KPIs and a Power BI dashboard to visualize their system wide SSOs.

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Rock Run, Little Falls, and Watts Branch Sewer Basins Comprehensive Study, Washington Suburban Sanitary Commission, Montgomery County, MD

Project involved an infiltration/inflow (I/I) analysis, sewer system evaluation, and an inventory, prioritization, and plan for addressing exposed sewer pipes in the basins. Responsible for management of all flow monitoring data, GPS/GIS data, hydraulic modeling data, video data and synchronization of field data with central data-bases. Also responsible for the QA/QC review of CCTV and manhole inspections of the sanitary sewer, making recommendations for rehabilitation and maintenance of manholes and pipe segments and, cost estimation.

Piscataway Creek Basin Comprehensive Sewer Study, Washington Suburban Sanitary Commission, Montgomery County, MD

The I/I and SSES program included a trunk sewer inspection program for sewer lines greater than 15-inches located near water bodies. As Project Engineer, was responsible for management of all flow monitoring data, GPS/GIS data, video data and synchronization of field data with central databases. Also responsible for the review of CCTV and manhole inspections of the sanitary sewer and provided recommendations for rehabilitation and maintenance of manholes and sewer segments.

Low Level Collection System Evaluation and Sewershed Plan, Baltimore, MD

This project was driven by Consent Decree and aimed to address sanitary sewer overflows in the wastewater collection system. The sewershed contains approximately 250 miles of sewers ranging in size from 8 to 100 inches in diameter. The project involved field inspection activities including flow metering, hydraulic modeling, manhole and gravity sewer CCTV inspections, GIS/data management, public outreach and rehabilitation cost estimating. Provided support in coordinating manhole inspection field work and review of MACP data to identify deficiencies in the collection system, as well as participating in data management, model preparation, and efforts to update the City's GIS.

Sewer Condition Assessment, Reading, PA

Project was driven by Consent Decree to identify priority areas in the sanitary sewer system that require repair, replacement and or rehabilitation, and provide implementation schedule. The City's collection system is comprised of approx. 430 miles of sewers ranging from 6-inches to 66-inches in diameter. Involved in managing inspections data done by subcontractors and reviewing PACP and MACP data to identify deficiencies in the collection system, and develop rehabilitation plan and implementation schedule. Also involved in updating the City's GIS.

Jim Dierig

Field Coordinator

Mr. Dierig has 33 years of experience in the water and wastewater industry. Including 30 years at the Northern Kentucky Water District. He spent most of his career in and around treatment plants, pump stations, and water towers. As the maintenance and instrumentation Project Manager he was highly involved in several types of new construction project as well as facility rehabs and upgrades.

Areas of Expertise

- Project inspection
- Maintenance & operations

Experience

- 33 total years
- 1 year with Hazen

South Sewer Extension Contract 1, GMWSS, Georgetown/Scott County, KY

Field Representative on the project that consists of 41,000 LF of 8-inches to 27-inches gravity PVC, 129 precast manholes, 12,000 LF of 12-inches to 18-inches force main, service connections to 500 residential units, 50,000 LF of 6-inches sanitary lateral pipe, a new 6-mgd pump station including electrical, mechanical, instrumentation and a 750KW generator.

Sewer and Wetwell Rehabilitation, Cynthiana, KY

Field Representative on a project that consisted of rehabilitation of sewer collection wetwell, rehabilitation of an existing package treatment plant, telemetry upgrades and upgrades to sewer lateral connection to approximately 250 residential units and 20,000 LF of 8-inches gravity PVC and 10,000LF of 4-inches force main. Also included in this project was the decommissioning of an existing retention pond.

Banklick Creek Sewer Upgrade, SD1 of Northern Kentucky, Fort Wright, KY

Field Representative on a project that consisted of 21,000 LF of 21-inches gravity sewer main.

Hazen

Newton “Chip” Gill

Field Coordinator

Mr. Gill has 35 years of experience in the wastewater industry. He spent 22 years at the Frankfort Sewer Department (FSD). At FSD he grew from an operator to ultimately Collection Systems Supervisor, a role he served in for his final 10 years at FSD. After retiring from FSD, he has spent the last 13 years serving as a resident project representative where he leverages his vast experience to aid the construction of wastewater conveyance projects.

Areas of Expertise

- Project inspection
- Maintenance & operations

Experience

- 35 total years
- <1 year with Hazen

Miami Trails Sanitary Sewer, Frankfort Sewer Department, Frankfort, KY

Resident Project Representative. RPR for approximately 3,000 LF of deep sanitary sewer with many sections greater than 20 feet deep. Project was designed to eliminate an existing duplex pump station. Construction included considerations for deep construction and coordination with area residents.

Boone National Guard Sewer, Frankfort, KY

Resident Project Representative. Project included replacement of 4,200 LF of 8-inches sanitary sewer with 26 manholes. Project also included 16 services and cleanouts. Construction occurred within the the National Guard base, significant portions of work were near existing fiber optic communications lines. Notably work include coordination to not disturb the National Guard emergency response center during the height of the COVID-19 pandemic response.

Old Lawrenceburg Road Force Main, Frankfort, KY

Resident Project Representative. The project replaced 730 LF of 20 inch ductile iron force main. The project included construction under a state government parking garage and along the banks of the Kentucky River.

Water Main Improvements, Brooksville, KY

Resident Project Representative. The project included 2 miles of 8-inches PVC water main. Also included in the project were six bore and jack installations of 12-inch steel encasement pipe.

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Kevin Robinson

Senior Principal Designer

Mr. Robinson is a Civil 3D/CAD designer with 25 years of civil engineering design experience preparing full scale construction drawings, as-built drawings, exhibits, figures, construction inspection and other materials of an intricate nature in areas relative to water distribution, site development, grading, sanitary sewer design, and stormwater drainage.

Areas of Expertise

- Water line design
- Water treatment plant design
- Stormwater management
- Sanitary sewer design
- Waste water treatment plant design
- Site grading and construction plans
- Easement and subdivision plats
- Boundary and topographic surveys
- Floodplain / volume calculation
- QA/QC
- Water-wastewater construction inspection

Experience

- 25 total years
- 4 year with Hazen

Clifton Heights CSO Storage Basin, Louisville MSD, Louisville, KY
Lead CAD Designer for a CSO storage basin for storm sewer overflows. Responsible for the design drawings for storage basin as well as the site layout, site grading, storm sewers, gravity sewers and force main. Coordination with electrical, mechanical and structural subcontractors was necessary to complete the set.

U.S. Hwy. 27 Sanitary Sewer Improvements, City of Falmouth, KY
Lead CAD Designer for 5,400 LF of sanitary sewers alongside of U.S. 27. Responsible for the design of the sanitary sewers, and coordination of drawings with all other sub consultants and disciplines. The design required that a portion of the sewer be hung from a bridge that spans the South Fork of the Licking River.

Lake Carnico Sanitary Sewers, City of Nicolas Co. Sanitation District No. 2, Carlisle, KY
Lead CAD Designer of a project to decentralize sanitary sewer collection system, treatment and subsurface disposal system for a Lake community. Responsible for the design included 100 septic tank systems with grinder pumps, 23,000 LF of HDPE collection force mains, Recirculating gravel treatment system, UV treatment and subsurface leaching fields. The design also required coordination of drawings with all other sub consultants and disciplines.

South Sewer Extension, Georgetown/Scott County, KY
Lead CAD Designer for 38,000 LF of sanitary sewers and 6,600 LF of sanitary force main as well as decommissioning 3 existing pump stations. Responsible for the design of the sanitary sewers, force mains and the decommissioning plans, creating and managing design drawings and coordination of drawings with all other sub consultants and disciplines.

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Wastewater Collection System Improvements, City of Brewster, OH
Lead CAD Designer for 2,100 LF of sanitary sewers, 850 LF of water main and 550 LF of storm sewers. Responsible for the design of the sanitary sewers, water mains and storm sewers, creating and managing design drawings and coordination of drawings with all other sub consultants and disciplines.

East Hickman Pump Station, Wet Weather Storage Tank, Elimination of the East Lake Pump Station, LFUCG, Lexington, KY
CAD Designer. Design of a combination pump station and wet weather storage pump station with a firm capacity of 20.1 mgd and a wet weather storage pump station capacity of 12.4 mgd, a 32.5 mgd mechanical bar screen, odor control, chemical feed, SCADA, complete electrical control room, and flow control vault to convey flow to the West Hickman WWTP during dry flows and to a 6 mg WWS prestressed tank during wet weather events. Project included the elimination of the East Lake pump station, a vortex drop structure, 1,200 LF of dig and replace upsized gravity sewers upstream of the pump station, and demolition of the existing East Hickman pump station. Responsible for pump station site layout, grading and storm sewers design.

Interceptor Siphon Optimization, City of Newark, OH
Lead CAD Designer for 700 LF of sanitary sewers including 300 LF of siphon, design of custom diversion structures, design and grading of access road, decommissioning of existing CSO structure, design, grading and erosion control measures for new CSO outfall in the city of Hamilton, Ohio. Responsible for the design of the sanitary sewers, creating and managing design drawings and coordination of drawings with all other sub consultants and disciplines.

East Frankfort Interceptor Sewer, City of Frankfort, KY
Lead CAD Designer for 11,541 LF of sanitary sewers including 3,750 LF of HDD siphon, and EQ tank. design of custom diversion structures, design of site for EQ Tank, horizontal and vertical design of access road, erosion control measures, and storm sewers in the city of Frankfort, Kentucky. Responsible for creating and managing design drawings and coordination of drawings with all other sub consultants and disciplines.

Thomas Schaffer, PE, DBIA

Senior Associate

Mr. Schaffer has 40 years of engineering experience on municipal collection system and treatment plant projects. He has served as project manager, design manager and project engineer for studies and conceptual, preliminary, and detailed designs of expansions, upgrades, and rehabilitations of wastewater treatment plants, pump stations and collection systems.

Education

Master of Science, Environmental Engineering, Georgia Institute of Technology, 1986

Bachelor of Science, Agricultural Engineering, University of Minnesota System, 1979

Certification/License

Professional Engineer: KY, OH, IN, MN, GA

Design-Build Institute of America (DBIA)

Areas of Expertise

- WWTPs
- Pump stations
- Large diameter sewers/force mains
- Collaborative project delivery

Experience

- 40 total years
- 10 years with Hazen

Professional Activities

Water Environment Federation

Kentucky-Tennessee Water Environment Association

Ohio Water Environment Association

Design-Build Institute of America

Remedial Measures Plan (RMP) Implementation Services, LFUCG, Lexington, KY

Technical Advisor/Reviewer for implementation of the RMP required by USEPA Consent Decree. Project includes development of design standards and standard specifications, conceptual designs for all WWTP, wet weather storage, and pump station projects; a continuation of stakeholder involvement services; assistance with funding acquisition; peer reviews of all design plans and specifications developed by other design consultants; and coordination with regulatory agencies.

Wolf Run Pump Station Expansion and Relocation, LFUCG, Lexington, KY

Project Manager for expansion and relocation of the pump station which included coarse screening, flow measurement, divided cast-in-place wet well, valve vault, odor control, chemical addition, submersible pumps with VFDs, building that blends with the surrounding horse farms, and green features such as a rain garden and pervious pavement. The project also included 3,500 feet of 48-inch diameter interceptor and 9,500 feet of 30-inch force main.

Picadome Pump Station/Force Main Improvements, LFUCG, Lexington, KY

Design Manager for project that addressed SSOs in the Wolf Run watershed by pumping flows directly to the Town Branch WWTP, which off-loaded the downstream trunk sewer. The project 10,000 LF of 20-inch force main and a new 6-mgd pump station.

Western Regional Conveyance System, SD1 of Northern Kentucky, Fort Wright, KY

Project Manager. The conveyance system collects wastewater from Boone and Western Kenton Counties for transport to the Western Regional WWTP. Started with route selection study, pipe materials selection, environmen-

Hazen

tal surveys, geotechnical and archaeological investigation. The detailed design coordinated construction of the new collection system with interception and conveyance of the existing wastewater flows. Total construction cost was $58 million, which included 122,000 feet of interceptor (30 to 72-inch) and force main (24-inch) and 17 mgd pump station.

WWTP Improvements, Interceptors and Force Mains, Findlay, OH
Project Manager for planning, design and construction of 71,000 feet of sewers ranging in size from 24-inches to 42-inches, and Bright Road pump station and WWTP expansion with a capacity of 15 mgd.

Otter Creek Collection System, Richmond Utilities, Richmond, KY
Project Manager for $15.5 million collection system that included 60,000 feet of sanitary sewers ranging from 8-inches to 48-inches and two pump stations (3 mgd and 11 mgd). Sewers eliminated 10 existing pump stations and two existing WWTPs while transporting flows to new Otter Creek WWTP. Included initial flow projections and alignment evaluations, detailed design, bidding, and construction services. Two additional projects were the Goggins Lane parallel sewers and the Wilgreen pump station (5 mgd) and force main.

Wastewater CIP Implementation, Miamisburg, OH
Project Manager for the planning, funding, preliminary design, detailed design, bidding, construction, and startup of $40 million capital improvements for wastewater collection and treatment system. Projects include Riverview sewer/water, Westover pump station, East Side pump station EQ basin, sewer rehabilitations, and WWTP improvements.

Several Pump Station Upgrades, Butler County, OH
Project Manager for preliminary and detailed design of expansion and upgrades to the following pump stations: North Main Street, Sharon Creek, Greencrest, Trenton and Scoutmaster. (capacities 1.5 to 12 mgd)

LeSourdsville WWRF Improvements Phase 2, Butler County, OH
Construction Manager for $45 million multi-prime construction project that includes new pretreatment facility (with 70 mgd influent pump station, fine screens, and grit removal and loadout), aeration tanks (set up for BNR), high speed turbo blowers, secondary clarifier, RAS/WAS pump station, and outfall. Upgraded facilities include wet weather storage with mixing and aeration, and three existing secondary clarifiers.

Massac Creek Phase 1, Paducah McCracken Joint Sewer Agency, Paducah, KY
Project Manager for the project which included 11,000-feet of 30-inch and 36-inch gravity interceptors, submersible pump station (initially 1 mgd, expandable to 7 mgd) and 30,000-feet of 10-inch and 33,000-feet of 20-inch force main to reduce flows to overloaded Perkins Creek pump station.

Robert "Bo" Copeland Jr., PE, PSAP

Senior Associate

Mr. Copeland specializes in engineering of water and wastewater pumping and conveyance systems, including planning, design, hydraulic and surge modeling, assessment, troubleshooting, and failure analysis, with experience on pump stations up to 1.4 bgd and pumps up to 2,250 hp. He serves as the Midwest pumping services leader.

Education

BSChemE, University of Illinois at Urbana-Champaign, 1993

Certification/License

Professional Engineer: KY, OH, MI, MN

Pump Systems Assessment Professional (PSAP No. 61)

Areas of Expertise

- Pump systems design and assessment
- Pump station troubleshooting and failure analysis
- Water distribution engineering
- Wastewater collection engineering
- Hydraulic and surge modeling

Experience

- 29 total years
- 15 years with Hazen

Professional Activities

Water Environment Federation

American Water Works Association

AWWA – Ohio Section Distribution Committee

Ohio Rural Water Association

Sanitary Sewer Master Plan Update, Butler County Water and Sewer Department, Hamilton, OH

Project Manager. Updated and calibrated a collection system hydraulic model, which includes 345 miles of piping, using flow data from over 60 locations. Work included pump station testing, future development projections, custom analysis tools, and advanced modeling of rainfall-derived and groundwater infiltration. Using the updated model, a comprehensive capacity assessment was conducted for several levels of service, conveyance and storage improvement alternatives were evaluated, and phased improvement recommendations were developed to achieve the selected level of service. A prioritized capital improvement program with project cost estimates was developed to leverage existing assets and achieve high return on initial investments.

Collection System Asset Management Program, Jefferson County Environmental Services Department, Birmingham, AL

Technical Advisor. Provided input and reviews for pump station capacity and condition assessments, testing, modeling, and improvements. Also, provided input on updates to fixed assets register and other program management support.

West Hickman WWTP Influent Pumping Evaluation, LFUCG, Lexington, KY

Technical Advisor. Assessed available influent pumping capacity, developed and evaluated alternatives to temporarily increase capacity to achieve required flow rates until completion of ongoing WHWWP improvements, reviewed equipment rental quotes, and coordinated with the contractor and electrician for installation of two 12-inch, 16-mgd electric self-priming "trash" pumps.

Hazen

Bromley Pump Station Evaluations, SD1 of Northern Kentucky, Fort Wright, KY

Project Manager and/or Technical Lead. Over multiple years, performed condition assessment, modeling, recommended capacity enhancements and reliability improvements, and evaluated various improvement alternatives for this 38-mgd pump station in the combined collection system. Prepared conceptual design report for expansion to 60 mgd.

Lakeview Pump Station Pump and Force Main Replacement Alternatives Evaluation and Surge Improvements, SD1 of Northern Kentucky, Fort Wright, KY

Technical Lead. Evaluated alternatives for replacement of eight 350 HP pumps, 30-inch force main, and related improvements for this 21-mgd, high-head series pump station, including hydraulic and surge modeling. Provided design, modeling, construction-phase services, and post-start-up support for installation of two 7,500-gallon bladder surge tanks, check valves and related improvements. Also provided post-construction (of improvements designed by others) operational evaluation and alternatives analysis for further capacity upgrades.

Richwood Pump Station Alternatives Evaluation, SD1 of Northern Kentucky, Fort Wright, KY

Project Manager and Technical Lead. Evaluated nine improvement and replacement alternatives to increase pumping capacity from 2.89 mgd to as much as 10 mgd, including assessing feasibility and cost-effectiveness of refurbishing pumps from a decommissioned pump station. Project included extensive hydraulic modeling to develop flow projections and evaluate hydraulics for the different alternatives. Also performed analysis of force main piping size and material alternatives and provided peer review of force main design.

Burlington and Allen Fork Pump Station Improvements, SD1 of Northern Kentucky, Fort Wright, KY

Project Manager and Technical Lead. Over multiple years, performed several studies, evaluations, hydraulic modeling, and designs as part of a comprehensive plan to address capacity concerns with two submersible pump stations. Conducted alternatives evaluation and design for replacement of three 250-hp pumps at the 13.5 mgd Burlington pump station, performed peer review for replacement of nearly 2 miles of 24-inch force main, recommended and provided engineering support for CIPP-lining of 2,350 feet of 24-inch force main, conducted surge modeling, recommended air valves for the new force main, and designed a 24-inch force main connection to a 72-inch gravity sewer using a vortex flow insert retrofitted into an abandoned pump station wet well. Also conducted preliminary study, alternatives evaluation, and surge analysis, and made recommendations for replacement of pumps at Allen Fork Pump Station to increase firm capacity to 4.1 mgd.

Jason Advani, PE, CDT

Associate

Mr. Advani is the Midwest I&C group leader. He has a wide range of experience, including design of controls systems, telemetry systems and network security, fiber optic communications, instrument selection, and preparation of construction specifications. He has worked on projects throughout his for water and wastewater treatment facilities, both inside-and outside-plant.

Education

BSECE, Ohio State University 2004

Certification/License

Professional Engineer: KY, OH, MN, MI, TN, PA, MO, WV

CompTIA A+ Certification

CDT (Construction Documents Technology)

PureSafety Electrical Hazards and NFPA 70E (Overview)

PureSafety Introduction to NFPA 70E, 600 Volts or Less

Areas of Expertise

- Instrumentation and control evaluation
- Planning, design and startup for WWTP/WTP
- Telemetry system design
- Networking design & security
- PLC programming (Allen Bradley)
- HMI programming (Wonderware & iFix)
- Low-voltage electrical design

Experience

- 16 total years
- 10 years with Hazen

Publications

Advani, J.V., "PLCs & HMIs: A Guide to Wastewater Control," presented at the SW Section Meeting of the Ohio Water Environment Association, Greene County OH, March 18, 2010.

Westerly Chemically Enhanced High Rate Treatment, NEORSD, Cleveland, OH
Technical Advisor for influent flow metering in a challenging application that involves existing infrastructure with a wide range of flow rates up to 400-mgd, including empty "pipe," and surcharged conditions.

WWTP Headworks Improvements, City of Ann Arbor Water, MI
I&C Technical Advisor for improvements to the preliminary treatment process that involves replacing screening and grit removal equipment and adding odor control.

Lakeside Redirect (Design – Build), City of Middletown, OH
Technical Advisor for a progressive design-build project to construct a 10-mgd pump station to pump storm water for the purpose of relieving existing combined sewers.

Spent Caustic pH Treatment, Confidential Client, KY
Technical Advisor for a batch reactor to treat wastewater for pH adjustment and temperature.

Dry Creek WWTP Headworks, Hydraulics and Odor Control Improvements, SD1 of Northern Kentucky, Erlanger, KY
Supporting Control System Engineer during construction for a project to build a new headworks facility rated at a 105 mgd peak hourly flow rate.

Morris Forman WQTC Emergency Dryer Replacement, Louisville MSD, Louisville, KY
I&C Technical Advisor for the emergency replacement of two thermal drying units and miscellaneous dewatering improvements.

Hazen

WRRF Pump Station No. 1 Rehabilitation, GLWA, Detroit, MI
Flow Metering Lead and I&C Technical Advisor for the rehabilitation of a 1,440-mgd pump station. Tasks include evaluating individual pump flow rate measurement technologies, designing eight 84-inch (equivalent size) retro-fit concrete formed elbow meters, rehabilitating four existing large venturi meters, and providing technical guidance on rehabilitation of the entire station, including rehab of the control room, replacement of ancillary systems, and making control changes.

WRRF PS-2 Bar Racks Replacement and Grit Collection System Improvements, GLWA, Detroit, MI
I&C Technical Advisor and Flow Metering Lead for a project to design the rehabilitation and expansion of an existing screening, grit removal, and processing facilities for a 920-mgd (peak flow) facility. Design tasks include replacement and expansion of the existing Ovation system in this portion of the plant, fully-incorporating controls into Ovation that would otherwise be packaged by vendors, and rehabilitating two existing large venturi meters.

Oakwood CSO RTB HVAC Improvements, GLWA, Detroit, MI
Technical Advisor for the design of HVAC improvements at an existing CSO facility. Tasks include incorporating additional vibration monitoring, making gas detection modifications to meet NFPA 820, adding fan control from Ovation SCADA system, and integrating the SCADA system with building controls.

Shively Pump Station Electrical Improvements, Louisville MSD, Louisville, KY
Lead Control Systems Engineer for the electrical and controls rehabilitation of a 16-mgd pump station constructed in the 1970s. In conjunction with a new electrical building, design tasks include replacement of all electrical equipment, all HVAC & process controls, and instrumentation. Assisted with CA activities and provided inspection services.

Brett Bueltel, PE

Associate

Mr. Bueltel serves as the electrical group leader for the Midwest region. He has 15 years of experience in water and wastewater treatment facilities, water distribution systems and wastewater collection systems. His design experience includes the design of low and medium voltage electrical power distribution systems, standby power systems, lighting design, motor controls, short circuit studies, and arc flash analysis.

Education

BSEE, Rose-Hulman Institute of Technology, 2008

Certification/License

Professional Engineer: KY OH, TX, TN, MI, IN, PA, WV, IL, IA, MN, AK

Areas of Expertise

- Low and medium voltage power distribution
- Lighting, motor controls, and variable frequency drives
- Computer analysis
- Design of electrical power systems using SKM power tools
- Computer aided design using AutoCAD

Experience

- 15 total years
- 15 years with Hazen

As-Needed-Services, SD1 of Northern Kentucky, Fort Wright, KY
Provided as-needed electrical engineering services for treatment plant and pump station power systems within sanitary and storm water systems. Projects include an extensive track record of success, As-Needed CIP assistance, electrical engineering services agreement, SCADA evaluation and support, participation with various pump station improvement projects, and energy management evaluation/implementation.

VFD Replacement, Harpeth Valley Utilities District, Nashville, TN
Electrical Engineer. The design included replacing five 1,000 HP, 5 kV class VFDs for existing vertical turbine pumps and rearranging the electrical room configuration of an existing high service pump station. Other work at the HSPS included the replacement of air handling units, condensing units and associated electrical, structural and mechanical work. In Addition, four 300 HP, 480 V variable frequency drives at the nearby Overall Creek pump station were replaced in kind as part of this project. The design of the project was fast tracked and completed in less than six weeks. Maintaining plant operations was a critical component of the project.

Broadway and Westwood Pump Station and Screen Rehabilitation, Dayton, OH
Technical Advisor/QC Reviewer for the electrical improvements at the 210-mgd pump station. Improvements included replacement of the existing 12.47 kV main switchgear, VFD/RVSS replacement for all seven 500-hp pumps, controls modifications, and influent screen replacement.

WWTP and Collection System Improvements, Sidney, OH
Electrical Engineer of record for the improvements project to help the plant meet more stringent EPA permit requirements, address safety

Hazen

needs, replace aging electrical distribution system infrastructure, and help improve overall efficiency of the plant. Improvements at the plant include a new low voltage main switchgear lineup, 1,000kW, 480V diesel-fueled standby generator package, improvements to the plant's equalization basin, additional aeration basin for centrate biological treatment, rehabilitation and improvements to the plant's anaerobic digestion and gas handling processes, and a new UV facility.

WRF Improvements, City of Miamisburg, OH
Electrical Engineer of Record. Improvements at the plant include a new preliminary treatment facility and grit removal, rehabilitation of the primary clarifiers, a new RAS holding tank and pump station, high speed turbo blower, rehabilitation and improvements to the plant's anaerobic digestion process and solids handling, new UV disinfection, and effluent pumping station.

South Sewer Extension Contract 1, Georgetown/Scott County, KY
Lead Electrical Engineer. Design of a new 6.4-mgd submersible pump station with dual force mains to serve a 500 unit mobile home park and the sanitary sewer service area of the south side. The pump station includes a 750 kW standby generator, ATS, VFDs and electrical, instrumentation, and storage rooms.

East Frankfort Interceptor Final Design Phase III, FSD, Frankfort, KY
Lead Electrical Engineer. Final Design for a new interceptor sewer to the WWTP. The interceptor is the first step in FSD's Long Term Control Plan to eliminate 3 reoccurring SSOs and provide additional capacity in the collection system. The proposed project includes installation of approximately 11,000 LF of 30-inch diameter gravity sewer around the east side of the FSD service area, rehabilitation of approximately 3,000 LF of interceptor sewer, a gravity in/gravity out, 3 MG wet weather storage facility, manholes, two sets of double barrel siphons (one set (12-inch & 30-inch) under the Kentucky River and one set (12-inch & 16-inch) under Cove Spring Park), control gates, flow control/metering, and SCADA integration.

Rich Van Dyke, PE

Associate

Mr. Van Dyke has 39 years of mechanical design experience in the engineering field. His responsibilities include project management, HVAC, plumbing, and fire protection design. His experience includes an extensive range of projects working with municipal, commercial, educational, and industrial projects.

Education

BSME, Tennessee Technological University. 1983

BS, Mechanical Engineering, Lipscomb University, 1981

Certification/License

Professional Engineer: KY, OH, TN, AL, CO, IN, LA, MD, MI, MN, NV, PA, SC, VA, WV

Areas of Expertise

- Heating, ventilating and air conditioning
- Plumbing
- Fire protection

Experience

- 39 total years
- 6 years with Hazen

Professional Activities

CxA, Commissioning Authority

EMP, Energy Management Professional

CEM, Certified Energy Manager

MFWQTC Emergency Dryer Replacement, Louisville MSD, Louisville, KY
HVAC/Plumbing Project Engineer under an emergency order to install two new dryer trains inside the 4-story main equipment building. This emergency effort includes the evaluation and design of the equipment for two new dryer trains and providing construction services and inspection.

Various Chemical Feed Facilities, Kentucky Water, Lexington, KY
Project Manager and Lead Designer for the design and construction of HVAC and plumbing systems for three new chemical feed and storage buildings.

Dry Creek WWTP Blower Improvements, SD1 of Northern Kentucky, Fort Wright, KY
Discipline Project Manager and Lead Designer – Design and construction of HVAC improvements for blower replacement project. New air handling units were installed for electrical room environmental control.

WWTP Upgrades, Clarksville Water Department, Clarksville, TN
Project Manager and Lead Designer for the design and construction of HVAC and plumbing systems for a new replacement HVAC systems in various buildings throughout the plant during rehabilitation after the flood reseeded. Assessment of equipment damage of HVAC systems after plant flooded.

North Regional WWTP Digester Improvements, Newark, OH
Discipline Project Manager and Lead Designer for the design and construction of HVAC systems for a new boiler plant to serve digesters. Design included ventilation systems, boiler flues, hydronic piping, natural gas piping and digester gas piping for the plant.

Hazen

Disinfection Improvements, Tri-Cities Wastewater Authority, Dayton, OH
Discipline Project Manager and Lead Designer for the design and construction of HVAC systems for a new chemical storage facility for sodium hypochlorite and sodium bisulfite. Design included ventilation systems and plumbing system piping for the facility.

Indian River WTP Improvements, Village of Ossining, NY
Engineer of Record and Lead Designer for the design of HVAC, plumbing and fire protection systems for a new 20,000 square foot water treatment building.

Shelby Basin CSO, Metro Water Services, Nashville, TN
Project Manager and Lead Designer for the design and construction of HVAC and plumbing systems for a new bar screen building installed for a combination sewer outlet system.

Wet Weather Combined Sewer Storage Facility, Chattanooga, TN
Lead HVAC design engineer for the HVAC and odor control systems for three above ground combined sewer wet weather storage tanks

Whites Creek WWTP, Metro Water Services, Nashville, TN
Project Manager and Lead Designer for the design and construction of HVAC and plumbing systems for a new control building installed for a six channel effluent ultra violet lamp system.

Omohundro WTP Administration Building, Metro Water Services, Nashville, TN
Project Manager and Lead Designer for the design and construction of HVAC, plumbing and fire protection systems in the remodel of an existing 25,000 square foot administration and vehicle services building.

New Headworks Facility, Metro Water Department, Nashville, TN
Quality Control Engineer for the design of a new headworks facility for the main sewage facility in the system.

West WTP Design, Columbia, TN
Engineer of Record and Lead Designer for the design of HVAC, plumbing and fire protection systems for a new WTP. Design included heating and ventilation for membrane filter building, granulated activated carbon building, high service pump station, maintenance facility, and chemical storage facility. The administration building and various electrical buildings were airconditioned to maintain comfort and protect the life of the equipment.

William G. Leadbitter, PE

Senior Associate

Mr. Leadbitter is the lead structural engineer for the Midwest region. He is responsible for coordinating and supervising all structural work in the region and also manages a growing staff of structural engineers. His recent work has been directed toward the structural design and construction administration of wastewater treatment facilities and collection system infrastructure.

Education

BSCE, North Carolina State University, 1997

Certification/License

Professional Engineer: KY, MA, NH, NC, IN, MD, MN, MO, OH, PA, TN, VA , MI, NY

Areas of Expertise

- Structural design related to water and wastewater treatment facilities, collection systems, bridges, and architectural structures
- Structural condition assessment of existing infrastructure
- Construction administration and field inspection
- Concrete repair and rehabilitation

Experience

- 28 total years
- 25 years with Hazen

Professional Activities

Chi Epsilon – Civil Engineering Honor Society

American Concrete Institute

Structural Engineers Association of Ohio

American Institute of Steel Construction

West Hickman WWTP Final Clarifiers #7 and #8 Structural Repair, LFUCG, Lexington, KY

Lead Structural Engineer for the evaluation and design of the repairs to the bottom slab and clarifier mechanism for existing final clarifiers. Project also includes replacement of the upstream gates in flow splitter box #1.

Dry Creek WWTP Headworks, Hydraulics, and Odor Control Improvements, SD1 of Northern Kentucky, Fort Wright, KY

Lead Structural Engineer - Assisted in the design and construction of a new headworks facility, odor control structure and splitter box. The headworks, rated at 105 mgd, includes four perforated plate mechanical screens, three Eutek grit removal tanks and two cyclone/classifiers constructed as part of a two-story building.

Dry Creek WWTP Solids Loadout Facility, SD1 of Northern Kentucky, Fort Wright, KY

Lead Structural Engineer for design and construction of a new loadout facility and modifications to existing facilities for increased solids handling capacity at this 46-mgd facility. Process upgrades included three new dewatering centrifuges, new solids conveyors, replacement of existing sludge pumps and modifications to existing solids holding tanks.

Taylor Creek Crossing Sanitary Sewer Replacement, SD1 of Northern Kentucky, Fort Wright, KY

Led structural design efforts for the emergency replacement of 230 LF of 30-inch gravity sewer. The existing sewer, located within the outfall along the Ohio River, was on the verge of failure and required immediate action to be taken. On short notice, a support system consisting of steel

Hazen

H-piles and bents was designed for the sewer line, allowing the District's contractor to perform emergency replacement measures.

Dry Creek WWTP Walkway Improvements, SD1 of Northern Kentucky, Fort Wright, KY
Project Lead for improvements to two elevated walkways at the plant. In July 2010, he performed a full visual inspection of the bridges along with a thorough examination of the record drawings. Based on the inspection findings and input from the owner, contract drawings and documents were developed to make necessary concrete repairs and eliminate drainage deficiencies.

Patton Street Pump Station and Eighth Street Pump Station Rehabilitation, SD1 of Northern Kentucky, Fort Wright, KY
Construction Project Manager. Responsibilities included conducting monthly progress meetings, coordination of field inspection, review and approval of pay requests, change order resolution, and review of RFI's and shop drawings. Worked closely with the owner and contractor to successfully rehabilitate both pump stations.

Lexington and Payne CSO Interceptor, Louisville MSD, Louisville, KY
Structural Engineer of Record for the design and construction of approximately 4,400 feet of pipe, ranging in diameter from 36-inch to 102-inch, installed beneath the Beargrass Creek Improved Channel from East Broadway to Lexington Road. The interceptor will convey flow from nine CSO locations through seven diversion structures to the Ohio River Tunnel for storage.

Downtown CSO Interceptor, Louisville MSD, Louisville, KY
Structural Engineer of Record for the design and construction of approximately 2,000 feet of pipe, ranging in diameter from 12-inch to 48-inch, installed near Rowan Street and River Road, generally between 13th Street and 5th Street. The interceptor will convey flow from thirteen CSO locations through seven diversion structures to the Ohio River tunnel for storage.

Derek R. Guthrie WQT Secondary Clarifier Mechanism Replacement, Louisville MSD, Louisville, KY
Structural Lead for rehabilitation of three 130-foot diameter secondary clarifiers. Repairs included removal and replacement of swept-in grout topping, pressure relief valve repair and expansion joint repair.

Sean O'Rourke, PE

Associate

Mr. O'Rourke's career has been devoted to pipeline design, condition assessment, and rehabilitation. With a background in construction, he has gained an appreciation for trenchless industry. He has completed countless pipeline and rehabilitation projects utilizing virtually all the available technologies.

Education

BSCE, University of Cincinnati, 2007

Certification/License

Professional Engineer: OH

National Association of Sewer Service Companies (NASSCO)

Assessment Certification Programs for Pipeline, Manhole, and Lateral (PACP)

Inspector Training for Cured-in-Place Pipe and Manhole Rehabilitation (ITCP)

Areas of Expertise

- Pump station design
- Sanitary and storm sewer design
- Pipe and manhole assessment and rehabilitation
- Construction administration and inspection
- Trenchless technology

Experience

- 18 total years
- 15 years with Hazen

Professional Activities

Water Environment Federation

General Drive Sewer, SD1 of Northern Kentucky, Fort Wright, KY
Project Manager for the design and construction services of 1,300-feet of sewer which had collapsed due to a landslide. The replacement pipe was installed in the bedrock using horizontal direction drilling (HDD).

Licking River Siphon Sewer, SD1 of Northern Kentucky, Fort Wright, KY
Project Manager for the design and construction services of a 1,100-feet of HDD crossing of 18-in siphon sewer. Project has included an intense geotechnical investigation to select the optimal HDD alignment and permitting with the USACOE and CSX Railroad. The construction is nearing final completion.

Supplemental Construction Management Collection Systems, SD1 of Northern Kentucky, Fort Wright, KY
Supplemental Staff to SD1's collection system group. This assignment involved every part of a pipeline project. Many storm and sanitary sewer projects were successfully completed utilizing CIPP, pipe bursting, jack-and-bore, manhole lining, and open-cut.

Riverview Sanitary Sewer and Water Main Improvements, Miamisburg, OH
Lead Engineer for the replacement of 5,000-feet of sanitary sewer, and 6,000-feet of water main. Project was completed in 2016 and included CIPP lining of 1,000-feet of large sewer and an HDD.

Park Street Sewer Rehabilitation, Lancaster, OH
Lead Engineer for condition assessment and rehabilitation of approximately 3,500-feet of 10-inch to 30-inch combined sewers as well as a 72-inch storm sewer. Construction utilizing CIPP and slip lining was completed in 2019.

Hazen

Lexington and Payne CSO Interceptor, Louisville MSD, Louisville, KY
Project Engineer. The Interceptor included diversion structures and approximately 4,500-feet of open-cut sewer construction of 84-inch to 102-inch PCCP pipe.

Silver Creek Trunk Sewer Rehabilitation, Park City, UT
Project Manager for a condition assessment and rehabilitation for 5 miles of trunk sewer. The condition assessment utilized pipe laser scanning and 360° manhole scanning. The first phase, utilizing UV cured CIPP lining, was completed in 2019.

South Sewer Interceptor Rehabilitation, South Jordan, UT
Project Manager for a condition assessment rehabilitation project for 20,000 LF of 48- to 90-inch RCP sewer. Design included CIPP lining, polymeric pipe lining, manhole rehabilitation, and structural repairs to two large concrete vaults. The polymer lining and concrete repairs was recently completed; the CIPP installation is ongoing.

First Aqueduct Treated Water Tunnel Renewal, San Diego County Water Authority, San Diego, CA
Lead Engineer for a detailed condition assessment and alternative analysis for three 96-inch concrete treated water tunnels. The analysis reviewed several short-term and long-term renewal methods. The study has provided the Water Authority the framework to move into design of needed repairs. Welded steel pipe and a polymer liner are recommended.

North Metropolitan / Cambridge Sewer Evaluations, Boston, MA
Lead Engineer for two condition assessment and rehabilitation recommendations for 6 miles of large-diameter brick pipes that had been rehabilitated with different types of shotcrete and coatings. The condition assessments used LiDAR technology, laser/sonar profiling, CCTV, physical samples, and manned inspection to recommend repairs for the defective shotcrete.

Westover Pump Station and Force Main Improvements, Miamisburg, OH
Project Engineer for a 12-inch force main installed under the Great Miami River. Several methods of condition assessment were evaluated before the collective decision was made utilize HDD to install a new force main.

La Brea Transmission Main Condition Assessment, City of Beverly Hills, CA
Project Engineer and Technical Advisor for a condition assessment, renewal recommendations, and design for 20,000 feet of existing 18-and 24-inch concrete and steel water mains along a heavily trafficked area in Beverly Hills.

Nathan Stewart, PE

Principal Engineer

Mr. Stewart has 6 years of electrical design and construction service experience, which includes performing construction services for projects involving water and wastewater treatment facilities and lift stations.

Education

BSME, Rose-Hulman Institute of Technology, 2016

Professional Registrations

Professional Engineer: OH

Areas of Expertise

- Low voltage power distribution, lighting, motor controls
- Computer aided design using AutoCAD and Revit
- Electrical power systems analysis using SKM power tools
- Lighting layout design and analysis using visual

Experience

- 6 total years
- 6 years with Hazen

Olentangy WTP Expansion, Del-Co Water Company, Delaware, OH
Assisted in the electrical design and construction services. The project includes a new 480v diesel generator with step-up transformer to provide standby power for the existing 5 kV electrical distribution at the plant. In addition, the project includes significant power distribution upgrades within the plant to new filters, clearwell, recarb basin, and raw water vault, which also include respective local control panels, low voltage circuit breaker switchboards and panelboards, lighting, and controls.

VFD Replacement Project, Harpeth Valley Utilities District, Nashville, TN
Assisted in the electrical design as well as construction services. The design included replacing four 1,000 HP, 5 kV class variable frequency drives and rearranging the electrical room configuration of an existing high service pump station. Additionally, four 300 HP, 480 V variable frequency drives at the nearby Overall Creek Pump Station were replaced in kind as part of this project. The design of the project was fast tracked and completed in less than six weeks. Maintaining plant operations was a critical component of the project.

Maxwell Creek Pump Station Upgrade, City of Sachse, TX
Designed electrical systems for a new 3.6-mgd pump station that replaced two existing pump stations. The new pump station includes a 480V switchboard that distributes power to the three 100HP vertical turbine pump RVSS's, among other loads. Standby power is provided through a new 350kW diesel generator, which is tied in via an automatic transfer switch upstream of the switchboard.

Hickory Creek West Peak Flow Pump Station, City of Denton, TX
Assisted in the electrical design of a new 24-mgd submersible pump lift station with submersible solids handling pumps, a 3.5 MG above-ground concrete storage tank with automated jet wash cleaning system, and adsorption type odor control. Facility will divert and store wet weather flows in excess of the existing Hickory Creek Interceptor capacity to eliminate upstream SSOs) for 5-year design storm.

Hazen

Hickory Creek Lift Station, City of Denton, TX
Assisted in the electrical design of a new 11-mgd lift station to replace the existing lift station. The new lift station includes a new service entrance switchboard, three variable frequency drives, low voltage distribution equipment and instrumentation and controls. The new lift station design is within the existing property and includes a precast concrete electrical building to protect critical electrical infrastructure.

Western Canyon WTP TTHM Control Project, Guadalupe-Blanco River Authority, Canyon Lake, TX
Assisted in the electrical design and construction services of an in-tank aeration system designed and implemented on a fast track to provide additional trihalomethane (TTHM) treatment at the Western Canyon WTP. The rapid deployment of aeration provided GBRA flexibility to bring high quality water to their customers, who have longer water age in the system. In parallel with the rapid deployment of the aeration system, Hazen performed process optimization testing to assess TTHM control through enhanced coagulation and separation and treatment of the recycle stream from the residuals basin. Upon completion of the optimization phase of the project, detailed design of the GAC system will be provided for 15 mgd.

WTP Improvements, Columbia, TN
Assisted with the electrical design and construction services for the WTP. The project scope included improvements to the pretreatment processes, flocculators, high service pumping, residuals management system, and chemical disinfection system. The electrical design involved coordinating with the local utility to demolish an existing substation, demolition of a medium voltage motor control center and variable frequency drives, design of new low voltage distribution equipment, and design of new low voltage 700HP, 300HP, and 150HP variable frequency drives.

Gowanus Canal CSO Facility Design, NYCDEP, New York, NY
Assisted with the electrical design for a new 323-mgd CSO facility. Specific tasks for this project include design of motor control logic, preparation of demolition drawings, and detailed review of the facility lighting design.

WPCC Capacity Improvements, City of Marion, OH
Assisted with the electrical design and construction services for improvements made to increase peak influent flow to 51 mgd, including the addition of an equalization basin, chemical facility, and an effluent and disinfection facility. The new facilities were tied into the existing 7.2/12.5-kV distribution loop, with redundant pad-mount, step-down transformers supplying each facility. New 15kV switchgear was added to the top end of the plant's power distribution system as well as a new 480V, 1500kW standby diesel generator with a step-up transformer to supply the plant's emergency standby power. NFPA 820 evaluation and improvements were performed, including the addition of air locks to isolate hazardous areas and combustible gas detection systems in various facilities.

Thomas Nolan, EIT

Assistant Engineer II

Mr. Nolan's responsibilities include HVAC design, plumbing design, and fire protection design.

Education

BS, Mechanical Engineering, University of Louisville, 2017

Certification/License

Engineer-In-Training: OH

Areas of Expertise

- Heating, ventilating and air conditioning
- Plumbing
- Fire protection

Experience

- 4 total years
- 4 years with Hazen

WTP Phase 1 Improvements, Greenville Utilities Commission, Greenville, NC
Assistant Engineer and designer for the design and construction of HVAC, plumbing, and fire protection systems for an existing operations facility, a new filter building, new pump station, and new chemical storage building.

WWTP Headworks Improvements, Erie Sewer Authority, Erie, PA
Assistant Engineer and designer for the design and construction of replacement HVAC and plumbing systems for two existing headworks facilities. Design included NFPA 820 compliant heating/ventilation systems and hydronic piping systems.

WWTP Expansion, Johnston County, NC
Assistant Engineer and designer for the design and construction of HVAC and plumbing systems for a WWTP expansion. Design included NFPA 820 compliant ventilation systems for PTF and RAS pump buildings, ventilation for chemical feed and storage, ventilation for electrical rooms, and HVAC and plumbing design for a new administration building.

Derek R. Guthrie WQTC Admin and RAS Buildings, HVAC Improvements, Louisville MSD, Louisville, KY
Assistant Engineer and designer for the design and construction of a replacement HVAC system for an existing administration building. Design included a new replacement variable air volume system.

Morris Forman WQTC Emergency Dryer Replacement, Louisville MSD, Louisville, KY
Assistant Engineer and designer for the design and construction of replacement HVAC and plumbing systems for an existing dryer building. Design included new replacement DX cooling systems and NFPA 820 compliant heating/ventilation systems.

Morris Forman WQTC HVAC Equipment Replacement, Louisville MSD, Louisville, KY
Lead Engineer for the design and construction of replacement HVAC and plumbing systems for an existing dryer Building, dewatering building, and other miscellaneous buildings. Design included new replacement DX

Hazen

cooling and hot water heating systems and NFPA 820 compliant heating/ventilation systems.

Oakwood CSO HVAC Upgrades, GLWA, Detroit, MI
Assistant Engineer and designer for the design and construction of replacement HVAC and Odor Control systems for a CSO control facility and pump station. Design included NFPA 820 compliant heating/ventilation systems and Odor Control system improvements.

Enhanced Treatment Site And Upgrade Program Phase 1A, Union Sanitation District, Union City, CA
Assistant Engineer and designer for the design and construction of replacement HVAC systems for a blower building. Design included ventilation systems for operation of four turbo blowers and evaluation of existing blower building design.

Parker Suess, PE

Senior Principal Engineer

Mr. Suess has 8 years of experience with structural design, inspection, planning, coordination, drafting and construction administration of water/wastewater treatment facilities as well as supply/collection system infrastructure.

Education

BSCE, University of Cincinnati, 2009

Certification/License

Professional Engineer: OH

OSHA 30/HAZWOPR Training

Areas of Expertise

- Structural analysis and design related to water and wastewater treatment facilities, collection systems, tanks and architectural structures
- Structural condition assessment of existing infrastructure
- Construction administration and field inspection
- Rehabilitation of concrete structures and design of concrete repairs

Experience

- 8 total years
- 6 years with Hazen

Professional Activities

American Society of Civil Engineers

South Sewer Extension, Contracts 1 & 2, Georgetown/Scott County, OH
Structural Engineer providing analysis and design for the new Cane Run pump station. The pump station is a buried reinforced concrete vault and pump room with a storage room and electrical room above grade along with an exterior generator pad. The superstructure design consisted of reinforced masonry shear walls.

Madison Heights Pump Station Improvements, Division of Public Works, City of Memphis, TN
Structural Design Engineer for the construction of a 21-mgd pump station considering its future expansion up to a 46-mgd pump station, installing a new 54-inch sanitary sewer pipe on Tutwiler Avenue, and installing a new 48-inch force main from the Madison Heights pump station to Levee Road. A new diversion structure and electrical building will be constructed to service the new pump station.

West Hickman WWTP Final Clarifier No. 7 and No. 8 Structural Repairs, LFUCG, Lexington, KY
Detailed review of record drawings and subsequent investigation into the clarifier slab failures. Development of repair concepts, detailed analysis and total redesign of clarifier membrane slab and rock anchors.

BE Payne WTP Clearwell Structural Evaluation, Louisville Water Company, Louisville, KY
Performed a condition assessment and structural evaluation of the clearwell. The assessment was performed in two phases, with separate inspections being performed for the east and west clearwells. All visible interior and exterior structural elements were observed, including the base slab, interior columns, roof slab, walls, miscellaneous metals, and above ground features.

Imlay Station, Lake Huron WTP, Springwells WTP, and Southwest WTP Reservoir Rehabilitation Construction, GLWA, Detroit, MI
Structural engineering support for the inspection of 10 total facilities at four separate locations. Reservoirs vary in type and are as follows: par-

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tially buried cast-in-place rectangular reinforced concrete, below grade cast-in-place rectangular reinforced concrete, partially buried circular pre-stressed wire-wound concrete, and above grade circular steel. Provided field investigation activities and verification of existing conditions to support the detailed design and construction work to be performed by a design-build contractor.

WWTP Primary and Secondary Treatment Facilities Improvements, Erie Sewer Authority, Erie, PA
Structural Engineer providing field inspections to determine structural & safety repairs to the: East and West primary clarifiers, East flume influent channel, aeration tanks and final clarifiers. Improvements include new reinforced concrete walls at the west primary clarifiers, miscellaneous metal handrail and grating improvements at all structures and deteriorated concrete and expansion joint repairs at all structures.

Downtown CSO Interceptor, Louisville MSD, Louisville, KY
Structural Engineer. The project includes more than 20 concrete structures designed to store, divert, and channel storm water flow as well as the rehabilitation of two Army Core of Engineers floodwall closures. Various ancillary structures included dams, weir walls, gates, and bar screens.

Lexington and Payne CSO Interceptor, Louisville MSD, Louisville, KY
Structural Engineer. The project includes more than 20 concrete structures designed to store, divert, and channel storm water flow. To provide vehicular access to the Beargrass Creek, several retaining walls up to 30' in height were designed. Various structures include dams, weir walls, gates, and bar screen

Appendix B | Required Forms

Affirmative Action Plan

All vendors must submit as a part of the proposal package the following items to the Urban County Government:

1. Affirmative Action Plan for his/her firm;
2. Current Work Force Analysis Form;

Failure to submit these items as required may result in disqualification of the submitter from award of the contract. All submissions should be directed to:

Director, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, 3rd Floor
Lexington, Kentucky 40507

All questions regarding this proposal must be directed to the Division of Central Purchasing, (859)-258-3320.

AFFIDAVIT

Comes the Affiant, Jon Schubarth, PE, and after being first duly sworn, states under penalty of perjury as follows:

1. His/her name is Jon Schubarth, PE and he/she is the individual submitting the proposal or is the authorized representative of Hazen and Sawyer, the entity submitting the proposal (hereinafter referred to as "Proposer").

2. Proposer will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.

3. Proposer will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.

4. Proposer has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.

5. Proposer has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of a contract to the Proposer will not violate any provision of the campaign finance laws of the Commonwealth.

6. Proposer has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as "Ethics Act."

Continued on next page

7. Proposer acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.

Further, Affiant sayeth naught.

STATE OF Kentucky

COUNTY OF Fayette

The foregoing instrument was subscribed, sworn to and acknowledged before me by JON SCHUBARTH on this the 5TH day of OCTOBER, 2022.

My Commission expires: 6/7/2025

RHONDA L. BAKER KYNP30973 NOTARY PUBLIC STATE AT LARGE, KENTUCKY Exp. 6/7/2025

NOTARY PUBLIC, STATE AT LARGE

AFFIRMATIVE ACTION PROGRAM

FOR

Hazen Sawyer

Corporate

Prepared by jackson|lewis.

STATEMENT OF PRIVILEGE

Copies of this Affirmative Action Program and all related appendices, documents and support data are made available on loan to the United States Government upon the request of said Government on the condition that the Government hold them totally confidential and not release copies to any person whatsoever. This Affirmative Action Program and its appendices and other supporting documents contain confidential information which may reveal, directly or indirectly, the Company's plans for business or geographical expansion or contraction. The Company considers this Affirmative Action Program, all portions thereof and all supporting material to be its private and confidential property and to be on loan to the Government only under specified conditions, including non-reproduction and non-distribution and to be exempt from disclosure under the Freedom of Information Act upon the grounds, inter alia, that such material constitutes: (1) personnel files, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy and are exempt from disclosure under 5 U.S.C. §552(b)(6); (2) confidential, commercial or financial information which is exempt from disclosure under 5 U.S.C. §522(b)(4); (3) investigatory records compiled for law enforcement purposes, the production of which would constitute an unwarranted invasion of personal privacy and are exempt from disclosure under 5 U.S.C. §552(b)(7); and (4) matters specifically exempted from disclosure by statute and are exempt from disclosure under 5 U.S.C. §522(b)(3). The Company will submit further detailed documentation supporting this claim of privilege if necessary.

NON-ADMISSION STATEMENT

It is understood that this Affirmative Action Program, or any part thereof, does not constitute an admission by the Company of any violation of Executive Order 11246, as amended, Section 503 of the Rehabilitation Act of 1973, as amended, the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, Title VII of the Civil Rights Act of 1964, or any federal, state or local law and has been developed to reaffirm the Company's policy of providing equal employment opportunity for all persons without regard to race, national origin, religion, age, color, sex, sexual orientation, gender identity, disability, or protected veteran status, or any other characteristic protected by local, state, or federal laws, rules, or regulations. Goals have been established, where appropriate, to endeavor to meet affirmative action obligations. This program is not intended to and will not be used to discriminate against any applicant or employee because of race, national origin, religion, age, color, sex, sexual orientation, gender identity, disability, or protected veteran status, or any other characteristic protected by local, state, or federal laws, rules, or regulations.

SEX DISCRIMINATION POLICY

In accordance with our policy of equal employment opportunity, we maintain a policy prohibiting sex discrimination and sexual harassment in the workplace. In addition to continued adherence to the goals enunciated in our Affirmative Action and Equal Employment Opportunity Policy, we will also continue to do the following, as applicable:

RECRUITMENT AND ADVERTISEMENT

A. Recruit men and women for all positions, except where sex is a bona fide occupational qualification, without regard to the candidate's sex.

B. Ensure that "help-wanted" advertising does not express a sex preference for any job, unless sex is a bona fide occupational qualification for that job.

C. Refrain from placing advertisements in newspapers or other media which are labeled "Males" or "Females," or otherwise segregated by sex, unless sex is a bona fide occupational qualification.

JOB POLICIES AND PRACTICES

A. Review personnel policies to avoid discrimination on the basis of sex.

B. Consider employees and applicants of both sexes for assignment, transfer or promotion to all positions for which they are qualified, except where sex is a bona fide occupational qualification.

C. Administer employment opportunities, wages, hours, conditions of employment, pensions, recreation programs and employee benefits without regard to sex.

D. Consider married and unmarried men and women equally in all personnel actions, including the administration of wages and benefits, without regard to the number of dependents which an individual may support or maintain. Retirement age and retirement benefits will be equal for both sexes.

E. Provide appropriate facilities, e.g., rest rooms and locker areas, for employees and applicants of both sexes.

F. Refrain from reliance upon state laws which conflict with and are superseded by Title VII of the Civil Rights Act of 1964, as amended, or Executive Order 11246.

G. Provide leaves of absence to employees without regard to an employee's sex. No employee will be discriminated against because of pregnancy. Following childbirth, and upon signifying her intent to return within a reasonable time, the Company will reinstate such employee to her original job or to a position of like status and pay without loss of service credits.

SENIORITY

Consider employees' seniority and administer any seniority system without regard to employees' sex.

DISCRIMINATORY WAGES

Determine wage schedules without regard to sex. There will be equal pay for equal work.

SEXUAL HARASSMENT

The EEO Coordinator shall notify all supervisors and managers that they are prohibited from engaging in, tolerating or otherwise promoting unwelcome sexual advances, requests for sexual favors and other verbal or physical conduct of a sexual nature by employees or supervisors, when (1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment, (2) submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual or (3) such conduct has the purpose or effect of substantially interfering with an individual's work performance or creating an intimidating, hostile or offensive working environment.

The EEO Coordinator shall take reasonable steps to prevent sexual harassment from occurring, including, but not limited to, expressing strong disapproval of such conduct, developing appropriate sanctions, informing employees of their right to raise the issue of sexual harassment under Title VII and the procedure to do so and generally developing training programs to sensitize managers, supervisors and employees to the nature of this problem. The Company maintains a policy prohibiting sexual harassment.

DEFINITION

The terms "because of sex," "on the basis of sex" and "regardless of sex" include, but are not limited to, because of or on the basis of pregnancy, childbirth or related medical conditions. Women affected by pregnancy, childbirth or related medical or physical conditions shall be treated for all employment-related purposes, including the receipt of benefits under fringe benefit programs, the same as other persons who are not so affected but are similarly able or unable to work.

LEAVE OF ABSENCE DUE TO MATERNITY

Leaves of absence due to maternity are considered under our policy.

RELIGIOUS AND NATIONAL ORIGIN DISCRIMINATION POLICY

In accordance with its policy of equal employment opportunity, the Company has adopted the following policy prohibiting discrimination on the basis of religion and national origin and supporting affirmative action to ensure all individuals are employed and treated during employment without regard to their religion or national origin.

SCOPE OF THIS POLICY

This policy applies to all terms and conditions of employment, including, but not limited to, hiring, upgrading, demotion, transfer, recruitment, recruitment advertising, layoff or recall from layoff, wage and benefit administration and selection for training.

OUTREACH AND POSITIVE RECRUITMENT

To determine whether members of all religious and ethnic groups are receiving fair consideration for job opportunities, the Company will consider reviewing its employment practices. As deemed appropriate, special attention will be directed toward executive and middle-management levels, where employment problems relating to religion and national origin are statistically most likely to occur. Based upon the findings of any such reviews, we will undertake appropriate outreach and positive recruitment activities, such as those listed below, to remedy any existing deficiencies. The scope of our efforts, of course, will depend upon all circumstances including the nature and extent of any deficiencies and our size and resources. The Company will consider the following actions:

A. Explaining to all employees the Company's obligation to provide equal employment opportunity, without regard to religion or national origin, in such a manner as to foster understanding, acceptance and support among other executives, management staff, supervisors and all other employees and encouraging such persons to take all actions necessary to aid the Company in meeting our obligation;

B. Developing reasonable monitoring procedures to ensure that our obligation to provide equal employment opportunity without regard to religion or national origin is being fully implemented;

C. Informing periodically all employees of our commitment to equal employment opportunity for all persons without regard to religion or national origin; and

D. Enlisting the assistance and support of recruitment sources (including employment agencies, college placement directors and business associates) in referring applicants without regard to religion or national origin.

RELIGIOUS OBSERVANCE AND PRACTICE

The Company will endeavor to make a reasonable accommodation to the religious observances and practices of any employee or prospective employee, unless such an accommodation will impose an undue hardship on the conduct of our business. Generally, we will try to make reasonable accommodations to the religious observances and practices of any employee or prospective employee who regularly observes Friday evening and Saturday, or some other day of the week, as the Sabbath or who observes certain religious holidays during the year and is conscientiously opposed to performing work or engaging in similar activity on such days, when such accommodations can be made without undue hardship on the conduct of our business. In determining the extent of the hardship imposed, we may consider: (a) business necessity; (b) financial costs and expenses and (c) resulting personnel problems.

Affirmative Action Program for Minorities and Females (Executive Order Program)

AFFIRMATIVE ACTION PLAN FOR WOMEN AND MINORITIES

DESIGNATION OF RESPONSIBILITY FOR IMPLEMENTATION

EXECUTIVE MANAGEMENT RESPONSIBILITY

As the representative of executive management, the EEO Coordinator has primary responsibility and accountability for implementing, directing and monitoring its Affirmative Action Plans ("AAPs" or "Plans"). The EEO Coordinator's responsibilities may include:

A. Implementing the affirmative action programs set forth in these Plans, including the development of policy statements and related internal and external communication procedures to disseminate those policy statements.

B. Developing and supervising the presentation of our equal employment opportunity policy during the supervisory training and new employee orientation programs, which may include question-and-answer sessions for supervisors and employees answering their questions about the AAPs.

C. Designing and implementing an audit and reporting system that will accomplish the following:

   1. Measure the effectiveness of our affirmative action programs.

   2. Indicate when remedial action is needed.

   3. Determine the degree to which our goals and objectives have been attained.

D. Advising management and supervisory personnel on developments in the laws and regulations governing equal employment opportunity.

E. Serving as liaison between the Company and all enforcement agencies.

F. Identifying and implementing action-oriented programs to address any potential problem areas that may exist.

G. Conferring with community organizations representing women and minorities.

H. Potentially auditing our on-the-job training, hiring and promotion patterns periodically to remove impediments to attainment of the Company's goals and objectives.

I. Considering rating supervisory employees based, in part, upon their efforts and success in furthering the goal of equal employment opportunity and informing supervisory employees of this evaluation practice.

J. Discussing periodically the Company's commitment to equal employment opportunity with managers, supervisors and employees. During these discussions, the EEO Coordinator will stress the importance of affirmative action and nondiscrimination.

K. Reviewing the qualifications of all employees to ensure minorities, women, protected veterans, and individuals with a disability are given full opportunities for transfers, promotions and training.

L. Providing access to career counseling for all employees.

M. Conducting periodic audits to ensure the Company is in compliance with federal and state laws and regulations requiring:

1. Proper display of posters explaining the Company's obligation to engage in nondiscriminatory employment practices.

2. Integration of all facilities which we maintain for the use and benefit of our employees.

3. Maintenance of comparable facilities, including locker rooms and rest rooms, for all employees.

4. Providing full opportunity for advancement and encouraging minority and female employees to participate in educational, training, recreational and social activities sponsored by the Company.

N. Counseling supervisors and managers to take actions necessary to prevent harassment of employees placed through affirmative action efforts and to eliminate the cause of such complaints. Further, the EEO Coordinator will counsel supervisors and managers not to tolerate discriminatory treatment of any employee by another employee or supervisor and to report all complaints or incidents to the EEO Coordinator.

O. Establishing an internal complaint system that will enable employees to discuss complaints with the EEO Coordinator whenever they feel that they are being discriminated against on the basis of race, color, religion, sex, sexual orientation, gender identity, national origin, disability or protected veteran status.

P. Serving as liaison between the Company and community organizations representing minorities and women.

Q. Developing expertise and knowledge of equal employment opportunity guidelines and regulations to advise and update top management and supervisory personnel concerning developments affecting our equal employment opportunity program.

THE RESPONSIBILITIES OF SUPERVISORS AND MANAGERS

All supervisors and managers have the obligation as part of their general management objectives to support our equal employment opportunity policy and affirmative action program on a day to day basis. Specifically, they should endeavor to:

A. Respond to inquiries about our Affirmative Action and Equal Employment Opportunity Policy, after consulting with our EEO Coordinator.

B. Assist our EEO Coordinator during the investigation of allegations of discrimination.

C. Participate in recruitment and accommodation efforts designed to enable disabled individuals, disabled veterans and others to secure employment and to advance to positions for which they are qualified.

D. Ensure that all federal and state posters explaining the laws prohibiting discrimination are properly displayed.

E. Participate in the development and implementation of affirmative action programs.

AFFIRMATIVE ACTION PLAN FOR WOMEN AND MINORITIES

IDENTIFICATION OF PROBLEM AREAS

The EEO Coordinator will, on an annual basis, as applicable, analyze the Company's processes to identify potential problem areas in the total employment process, which may include review of the following areas:

A. Composition of the workforce by protected group status.

B. Composition of applicant flow by protected group status.

C. Overall employee selection process including position specifications, application forms, interviewing procedures, test administration, test validity, referral procedures, final selection process and other employee selection procedures.

D. New hires, promotions, terminations, etc.

E. Compensation systems to determine whether there are gender-, race- or ethnicity-based disparities.

F. Utilization of training, recreation and social events and other programs that are sponsored by the Company.

G. Technical aspects of compliance with laws prohibiting discrimination in employment and promoting affirmative action programs, e.g., retention of applications, notifications to subcontractors, etc.

H. Whether there is "underutilization" of minorities or women in specific job groups.

I. Whether there is "under-representation" or "concentration" of minorities or women in specific departments.

J. Whether lateral or vertical movement of employees who are members of protected groups occurs at a lesser rate than that of employees who are members of non-protected groups.

K. Whether the selection process eliminates a significantly higher percentage of employees who are members of protected groups than employees who are members of non-protected groups.

L. Ensure that our employment application and other pre-employment evaluation forms or procedures comply with federal and state law.

M. Determine whether job qualifications are accurate in relation to actual functions and duties of the particular job.

N. Whether de *facto* segregation by protected characteristic exists in job titles or job groups.

O. Whether supervisory employees are supporting our affirmative action and equal employment opportunity programs and policies.

P. Whether minorities or women are significantly underrepresented in training or career improvement programs.

Q. Whether we have in place adequate procedures for evaluating the effectiveness of the programs set forth in these Plans.

R. Whether subcontractors and vendors are notified of their responsibility to assist the Company in attaining the goals and objectives set forth in this Plan.

S. Whether the Equal Opportunity clause is included in purchase orders and other contracts covered by Executive Order 11246.

T. Whether required equal employment opportunity posters are on display.

If the EEO Coordinator's review indicates that the above-listed topics are areas of concern or that other impediments block the entry into or advancement within our workforce of minorities or women, the Company will consider corrective action, as outlined in the Action-Oriented Programs section hereof.

EQUAL OPPORTUNITY AGREEMENT

The Law

- Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.

- Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and sub-contractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.

- Section 503 of the Rehabilitation Act of 1973 states:

  The Contractor will not discriminate against any employee or applicant for employment
  because of physical or mental disability.

- Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal contracts.

- Section 206(A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:

  The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

****

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractors may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped and aged persons.

_____ Hazen and Sawyer

Signature *Name of Business*

WORKFORCE ANALYSIS FORM

Name of Organization: Hazen and Saywer

Categories	Total	White (Not Hispanic or Latino)		Hispanic or Latino		Black or African-American (Not Hispanic or Latino		Native Hawaiian and Other Pacific Islander (Not Hispanic or Latino		Asian (Not Hispanic or Latino		American Indian or Alaskan Native (not Hispanic or Latino		Two or more races (Not Hispanic or Latino		**Total**	
		M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Administrators		4	38		9		4				2				3		
Professionals		776	287	65	36	39	14			75	52	2	1	16	10		
Superintendents																	
Supervisors																	
Foremen																	
Technicians		2	10	1	2	1				1	1				1		
Protective Service																	
Para-Professionals																	
Office/Clerical																	
Skilled Craft																	
Service/Maintenance																	
Total:		782	335	66	47	40	18			76	55	2	1	16	14	982	470

Prepared by: Glenys Herrera Human Resources Manager **Date:** 10 / 04 / 2022

(Name and Title)

Revised 2015-Dec-15

MINORITY BUSINESS ENTERPRISE PROGRAM

Sherita Miller, MPA
Minority Business Enterprise Liaison
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY 40507
smiller@lexingtonky.gov
859-258-3323

OUR MISSION: The mission of the Minority Business Enterprise Program is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long term economic viability of Lexington-Fayette Urban County Government.

To that end the city council adopted and implemented resolution 167-91—Disadvantaged Business Enterprise (DBE) 10% Goal Plan in July of 1991. The resolution states in part (a full copy is available in Central Purchasing):

> *"A Resolution supporting adoption of the administrative plan for a ten percent (10%) Minimum goal for disadvantaged business enterprise participation in Lexington-Fayette Urban County Government construction and professional services contracts; Providing that as part of their bids on LFUCG construction contracts, general Contractors shall make a good faith effort to award at least ten percent (10%) of All subcontracts to disadvantaged business enterprises; providing that divisions of LFUCG shall make a good faith effort to award at least ten percent of their Professional services and other contracts to disadvantaged business enterprises…"*

A Disadvantaged Business Enterprise is defined as a business that has been certified as being at least 51% owned, operated and managed by a U.S. Citizen of the following groups:

- African-American
- Hispanic-American
- Asian/Pacific Islander
- Native American/Native Alaskan
- Non-Minority Female
- Economically and Socially Disadvantaged

In addition, to that end the city council also adopted and implemented resolution 167-91—Veteran-owned Businesses, 3% Goal Plan in July of 2015. The resolution states in part (a full copy is available in Central Purchasing):

> *"A resolution adopting a three percent (3%) minimum goal for certified veteran-owned small businesses and service disabled veteran-owned businesses for certain of those Lexington-Fayette Urban County contracts related to construction for professional services, and authorizing the Division of Purchasing to adopt and implement guidelines and/or policies consistent with the provisions and intent of this resolution by no later than July 1, 2015."*

We have compiled the list below to help you locate certified MBE, WBE and DBE certified businesses. Below is a listing of contacts for LFUCG Certified MWDBEs in Economic Engine (https://lexingtonky.ionwave.net)

Business	Contact	Email Address	Phone
LFUCG	Sherita Miller	smiller@lexingtonky.gov	859-258-3323
Commerce Lexington – Minority Business Development	Tyrone Tyra	ttyra@commercelexington.com	859-226-1625
Tri-State Minority Supplier Diversity Council	Sonya Brown	sbrown@tsmsdc.com	502-625-0137
Small Business Development Council	Dee Dee Harbut UK SBDC	dharbut@uky.edu	859-257-7668
	Shirie Mack	smack3@email.uky.edu	859-257-7666
Community Ventures Corporation	James Coles	jcoles@cycky.org	859-231-0054
KY Department of Transportation	Melvin Bynes	Melvin.bynes2@ky.gov	502-564-3601
	Shella Eagle	Shella.Eagle@ky.gov	502-564-3601
Ohio River Valley Women's Business Council (WBENC)	Rea Waldon	rwaldon@gcul.org	513-487-6534
Kentucky MWBE Certification Program	Yvette Smith, Kentucky Finance Cabinet	Yvette.Smith@ky.gov	502-564-8099
National Women Business Owner's Council (NWBOC)	Janet Harris-Lange	janet@nwboc.org	800-675-5066
Small Business Administration	Robert Coffey	robertcoffey@sba.gov	502-582-5971
LaVoz de Kentucky	Andres Cruz	lavozdeky@yahoo.com	859-621-2106
The Key News Journal	Patrice Muhammad	paatricem@keynewsjournal.com	859-373-9428

LFUCG MWDBE PARTICIPATION FORM
Bid/RFP/Quote Reference # 56-2022

The MWDBE subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately.

MWDBE Company, Name, Address, Phone, Email	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1. Jackson Group 3945 Simpson Lane. Richmond, KY 40475	- Environmental - Permitting - Cultural Resources	TBD	TBD
2. Third Rock Consultants 2526 Regency Rd Suite #180 Lexington, KY 40503	- Environmental - Permitting - Cultural Resources	TBD	TBD
3. Civil Design, Inc. 9400 Bunsen Pkwy Suite #150 Louisville, KY 40220	- Surveying	TBD	TBD
4.			

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Hazen and Sawyer
Company

Company Representative

10/07/2022
Date

Vice President
Title

LFUCG MWDBE SUBSTITUTION FORM
Bid/RFP/Quote Reference # 56-2022

The substituted MWDBE subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project.

SUBSTITUTED MWDBE Company Name, Address, Phone, Email	MWDBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1. N/A	N/A	N/A	N/A	N/A	N/A
2.					
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Hazen and Sawyer
Company

Company Representative

10/07/2022
Date

Vice President
Title

MWDBE QUOTE SUMMARY FORM

Bid/RFP/Quote Reference # 56-2022

The undersigned acknowledges that the minority subcontractors listed on this form did submit a quote to participate on this project.

Company Name Hazen and Sawyer	**Contact Person** Jon Schubarth, PE
Address/Phone/Email 230 Lexington Green Circle, Suite #520, Lexington, KY 40503, (o) 859.219.1126, jschubarth@hazenandsawyer.com	**Bid Package / Bid Date** #56-2022 / October 7, 2022

MWDBE Company Address	**Contact Person**	**Contact Information (work phone, Email, cell)**	**Date Contacted**	**Services to be performed**	**Method of Communication (email, phone meeting, ad, event etc)**	**Total dollars $$ Do Not Leave Blank (Attach Documentation)**	**MBE * AA HA AS NA Female**	**Veteran**
Jackson Group 3945 Simpson Lane Richmond, KY 40475	Jeremy Jackson	(p) 859.623.0499 jjackson@jacksongroupco.com	09/23/2022	- Environmental - Permitting - Cultural Resources	Email	TBD	VOE	Yes
Third Rock Consultants 2526 Regency Rd, Suite #180 Lexington, KY 40503	Molly Foree	(p) 859.977.2000 mforee@thirdrockconsultants.com	09/23/2022	- Environmental - Permitting - Cultural Resources	Email	TBD	Female/ MBE	No
Civil Design, Inc. 9400 Bunsen Pkwy Suite #150 Louisville, KY 40220	Zack Kline	(p) 502.242.9061 zkline@civildesigninc.com	09/28/2022	- Surveying	Email	TBD	Female/ MBE	Yes

(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

Hazen and Sawyer
Company

Company Representative

10/07/2022
Date

Vice President
Title

LFUCG SUBCONTRACTOR MONTHLY PAYMENT REPORT

The LFUCG has a 10% goal plan adopted by city council to increase the participation of minority and women owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MWDBE vendors on a monthly basis. By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentation may result in termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims. Please submit this form monthly to the Division of Central Purchasing/ 200 East Main Street / Room 338 / Lexington, KY 40507.

Bid/RFP/Quote # 56-2022

Total Contract Amount Awarded to Prime Contractor for this Project_____

Project Name/ Contract #	**Work Period/ From:** **To:**
Company Name:	**Address:**
Federal Tax ID:	**Contact Person:**

Subcontractor Vendor ID (name, address, phone, email	Description of Work	Total Subcontract Amount	% of Total Contract Awarded to Prime for this Project	Total Amount Paid for this Period	Purchase Order number for subcontractor work (please attach PO)	Scheduled Project Start Date	Scheduled Project End Date

Not Applicable until work is completed.

By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

Hazen and Sawyer
Company

Company Representative

10/07/2022
Date

Vice President
Title

LFUCG STATEMENT OF GOOD FAITH EFFORTS
Bid/RFP/Quote # 56-2022

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE business enterprises on the project and can supply the appropriate documentation.

_____ Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms to participate.

_____ Included documentation of advertising in the above publications with the bidders good faith efforts package

_____ Attended LFUCG Central Purchasing Economic Inclusion Outreach event

X
_____ Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs of subcontracting opportunities

_____ Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms

X
_____ Requested a list of MWDBE subcontractors or suppliers from LFUCG Economic Engine and showed evidence of contacting the companies on the list(s).

X
_____ Contacted organizations that work with MWDBE companies for assistance in finding certified MWBDE firms to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

X
_____ Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less that seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

X
_____ Followed up initial solicitations by contacting MWDBEs to determine their level of interest.

X
_____ Provided the interested MWBDE firm with adequate and timely information about the plans, specifications, and requirements of the contract.

X
_____ Selected portions of the work to be performed by MWDBE firms in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE participation, even when the prime contractor may otherwise perform these work items with its own workforce

X
_____ Negotiated in good faith with interested MWDBE firms not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

_____ Included documentation of quotations received from interested MWDBE firms which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

_____ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE goals.

_____ Made an effort to offer assistance to or refer interested MWDBE firms to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

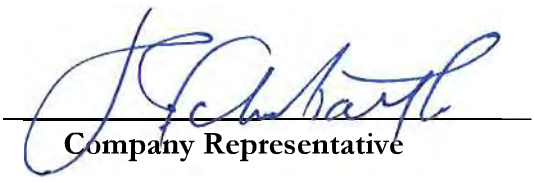
X
_____ Made efforts to expand the search for MWDBE firms beyond the usual geographic boundaries.

_____ Other - any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE participation.

Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement. Documentation of Good Faith Efforts are to be submitted with the Bid, if the participation Goal is not met.

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

Hazen and Sawyer
Company


Company Representative

10/07/2022
Date

Vice President
Title

GENERAL PROVISIONS

1. Each Respondent shall comply with all Federal, State & Local regulations concerning this type of service or good.

   The Respondent agrees to comply with all statutes, rules, and regulations governing safe and healthful working conditions, including the Occupational Health and Safety Act of 1970, *29 U.S.C. 650 et. seq.*, as amended, and KRS Chapter 338. The Respondent also agrees to notify the LFUCG in writing immediately upon detection of any unsafe and/or unhealthful working conditions at the job site. The Respondent agrees to indemnify, defend and hold the LFUCG harmless from all penalties, fines or other expenses arising out of the alleged violation of said laws.

2. Failure to submit ALL forms and information required in this RFP may be grounds for disqualification.

3. Addenda: All addenda, if any, shall be considered in making the proposal, and such addenda shall be made a part of this RFP. Before submitting a proposal, it is incumbent upon each proposer to be informed as to whether any addenda have been issued, and the failure to cover in the bid any such addenda may result in disqualification of that proposal.

4. Proposal Reservations: LFUCG reserves the right to reject any or all proposals, to award in whole or part, and to waive minor immaterial defects in proposals. LFUCG may consider any alternative proposal that meets its basic needs.

5. Liability: LFUCG is not responsible for any cost incurred by a Respondent in the preparation of proposals.

6. Changes/Alterations: Respondent may change or withdraw a proposal at any time prior to the opening; however, no oral modifications will be allowed. Only letters, or other formal written requests for modifications or corrections of a previously submitted proposal which is addressed in the same manner as the proposal, and received by LFUCG prior to the scheduled closing time for receipt of proposals, will be accepted. The proposal, when opened, will then be corrected in accordance with such written request(s), provided that the written request is contained in a sealed envelope which is plainly marked “modifications of proposal”.

7. Clarification of Submittal: LFUCG reserves the right to obtain clarification of any point in a bid or to obtain additional information from a Respondent.

8. Bribery Clause: By his/her signature on the bid, Respondent certifies that no employee of his/hers, any affiliate or Subcontractor, has bribed or attempted

to bribe an officer or employee of the LFUCG.

9. Additional Information: While not necessary, the Respondent may include any product brochures, software documentation, sample reports, or other documentation that may assist LFUCG in better understanding and evaluating the Respondent's response. Additional documentation shall not serve as a substitute for other documentation which is required by this RFP to be submitted with the proposal,

10. Ambiguity, Conflict or other Errors in RFP: If a Respondent discovers any ambiguity, conflict, discrepancy, omission or other error in the RFP, it shall immediately notify LFUCG of such error in writing and request modification or clarification of the document if allowable by the LFUCG.

11. Agreement to Bid Terms: In submitting this proposal, the Respondent agrees that it has carefully examined the specifications and all provisions relating to the work to be done attached hereto and made part of this proposal. By acceptance of a Contract under this RFP, proposer states that it understands the meaning, intent and requirements of the RFP and agrees to the same. The successful Respondent shall warrant that it is familiar with and understands all provisions herein and shall warrant that it can comply with them. No additional compensation to Respondent shall be authorized for services or expenses reasonably covered under these provisions that the proposer omits from its Proposal.

12. Cancellation: If the services to be performed hereunder by the Respondent are not performed in an acceptable manner to the LFUCG, the LFUCG may cancel this contract for cause by providing written notice to the proposer, giving at least thirty (30) days notice of the proposed cancellation and the reasons for same. During that time period, the proposer may seek to bring the performance of services hereunder to a level that is acceptable to the LFUCG, and the LFUCG may rescind the cancellation if such action is in its best interest.

    A. Termination for Cause

    (1) LFUCG may terminate a contract because of the contractor's failure to perform its contractual duties

    (2) If a contractor is determined to be in default, LFUCG shall notify the contractor of the determination in writing, and may include a specified date by which the contractor shall cure the identified deficiencies. LFUCG may proceed with termination if the contractor fails to cure the deficiencies within the specified time.

(3) A default in performance by a contractor for which a contract may be terminated shall include, but shall not necessarily be limited to:

(a) Failure to perform the contract according to its terms, conditions and specifications;

(b) Failure to make delivery within the time specified or according to a delivery schedule fixed by the contract;

(c) Late payment or nonpayment of bills for labor, materials, supplies, or equipment furnished in connection with a contract for construction services as evidenced by mechanics' liens filed pursuant to the provisions of KRS Chapter 376, or letters of indebtedness received from creditors by the purchasing agency;

(d) Failure to diligently advance the work under a contract for construction services;

(e) The filing of a bankruptcy petition by or against the contractor; or

(f) Actions that endanger the health, safely or welfare of the LFUCG or its citizens.

B. At Will Termination

Notwithstanding the above provisions, the LFUCG may terminate this contract at will in accordance with the law upon providing thirty (30) days written notice of that intent**,** Payment for services or goods received prior to termination shall be made by the LFUCG provided these goods or services were provided in a manner acceptable to the LFUCG. Payment for those goods and services shall not be unreasonably withheld.

13. Assignment of Contract: The contractor shall not assign or subcontract any portion of the Contract without the express written consent of LFUCG. Any purported assignment or subcontract in violation hereof shall be void. It is expressly acknowledged that LFUCG shall never be required or obligated to consent to any request for assignment or subcontract; and further that such refusal to consent can be for any or no reason, fully within the sole discretion of LFUCG.

14. No Waiver: No failure or delay by LFUCG in exercising any right, remedy, power or privilege hereunder, nor any single or partial exercise thereof, nor the exercise of any other right, remedy, power or privilege shall operate as a waiver hereof or thereof. No failure or delay by LFUCG in exercising any right, remedy, power or privilege under or in respect of this Contract shall affect the rights, remedies, powers or privileges of LFUCG hereunder or shall operate as a waiver thereof.

15. Authority to do Business: The Respondent must be a duly organized and

authorized to do business under the laws of Kentucky. Respondent must be in good standing and have full legal capacity to provide the services specified under this Contract. The Respondent must have all necessary right and lawful authority to enter into this Contract for the full term hereof and that proper corporate or other action has been duly taken authorizing the Respondent to enter into this Contract. The Respondent will provide LFUCG with a copy of a corporate resolution authorizing this action and a letter from an attorney confirming that the proposer is authorized to do business in the State of Kentucky if requested. All proposals must be signed by a duly authorized officer, agent or employee of the Respondent.

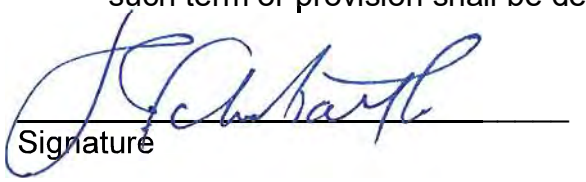
16. Governing Law: This Contract shall be governed by and construed in accordance with the laws of the Commonwealth of Kentucky. In the event of any proceedings regarding this Contract, the Parties agree that the venue shall be the Fayette County Circuit Court or the U.S. District Court for the Eastern District of Kentucky, Lexington Division. All parties expressly consent to personal jurisdiction and venue in such Court for the limited and sole purpose of proceedings relating to this Contract or any rights or obligations arising thereunder. Service of process may be accomplished by following the procedures prescribed by law.

17. Ability to Meet Obligations: Respondent affirmatively states that there are no actions, suits or proceedings of any kind pending against Respondent or, to the knowledge of the Respondent, threatened against the Respondent before or by any court, governmental body or agency or other tribunal or authority which would, if adversely determined, have a materially adverse effect on the authority or ability of Respondent to perform its obligations under this Contract, or which question the legality, validity or enforceability hereof or thereof.

18. Contractor understands and agrees that its employees, agents, or subcontractors are not employees of LFUCG for any purpose whatsoever. Contractor is an independent contractor at all times during the performance of the services specified.

19. Contractor [or Vendor or Vendor's Employees] will not appropriate or make use of the Lexington-Fayette Urban County Government (LFUCG) name or any of its trade or service marks or property (including but not limited to any logo or seal), in any promotion, endorsement, advertisement, testimonial or similar use without the prior written consent of the government. If such consent is granted LFUCG reserves the unilateral right, in its sole discretion, to immediately terminate and revoke such use for any reason whatsoever. Contractor agrees that it shall cease and desist from any unauthorized use immediately upon being notified by LFUCG.

20. If any term or provision of this Contract shall be found to be illegal or unenforceable, the remainder of the contract shall remain in full force and such term or provision shall be deemed stricken.



Signature

10/07/2022
Date

AMENDMENT 1 —
CERTIFICATION OF COMPLIANCE FOR AMERICAN RESCUE PLAN ACT EXPENDITURES

The Lexington-Fayette Urban County Government ("LFUCG") may classify the subject matter of this bid as an expenditure under the American Rescue Plan Act of 2021. Expenditures under the American Rescue Plan Act of 2021 require evidence of of the contractor's compliance with Federal law. Therefore, by the signature below of an authorized company representative, you certify that the information below is understood, agreed, and correct. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

The bidder agrees and understands that in addition to all conditions stated within the attached bid documents, the following conditions will also apply to any Agreement entered between bidder and LFUCG, if LFUCG classifies the subject matter of this bid as an expenditure under the Amerian Rescue Plan Act. The bidder further certifies that it can and will comply with these conditions, if this bid is accepted and an Agreement is executed:

1. Any Agreement executed as a result of acceptance of this bid may be governed in accordance with 2 CFR Part 200 and all other applicable Federal law and regulations and guidance issued by the U.S. Department of the Treasury.

2. Pursuant to 24 CFR 85.43, any Agreement executed as a result of acceptance of this bid can be terminated if the contractor fails to comply with any term of the award. This Agreement may be terminated for convenience in accordance with 24 CFR 85.44 upon written notice by LFUCG. Either party may terminate this Agreement with thirty (30) days written notice to the other party, in which case the Agreement shall terminate on the thirtieth day. In the event of termination, the contractor shall be entitled to that portion of total compensation due under this Agreement as the services rendered bears to the services required. Either party may terminate this Agreement for good cause shown with forty-five (45) days written notice, which shall explain the party's cause for the termination. If the parties do not reach a settlement before the end of the 45 days, then the Agreement shall terminate on the forty-fifth day.

3. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The contractor will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

(1) Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.
(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.
(4) The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
(5) The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
(6) The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
(7) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part, and the contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
(8) The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance.

Provided, however, that in the event a contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by the administering

agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

4. If fulfillment of the contract requires the contractor to employ mechanic's or laborers, the contractor further agrees that it can and will comply with the following:

(1) Overtime requirements: No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such a workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such a workweek.

(2) Violation: liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) Withholding for unpaid wages and liquidated damages. LFUCG shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower-tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower-tier subcontractor with the clauses set forth in paragraphs (1) through (4) of this section.

5. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.

6. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency Regional Office.

7. The contractor shall include these requirements in numerial paragraphs 5 and 6 in each subcontract exceeding $100,000 financed in whole or in part with American Rescue Plan Act funding.

8. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

9. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency Regional Office.

10. The contractor shall include these requirements in numerical paragraphs 8 and 9 in each subcontract exceeding $100,000 financed in whole or in part with American Rescue Plan Act funds.

11. The contractor shall comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

12. The contractor shall report each violation to LFUCG and understands and agrees that LFUCG will, in turn, report each violation as required to assure notification to the Treasury Department and the appropriate Environmental Protection Agency regional office.

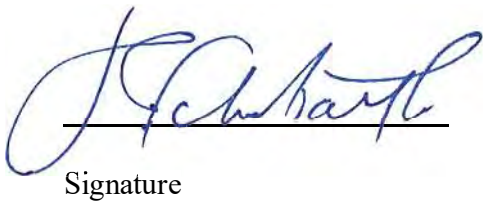
13. The contractor shall include these requirements in numerical paragraphs 11 and 12 in each subcontract exceeding $100,000 financed in whole or in part with American Rescue Plan Act funds.

14. The contractor shall include this language in any subcontract it executes to fulfill the terms of this bid: “the sub-grantee, contractor, subcontractor, successor, transferee, and assignee shall comply with Title VI of the Civil Rights Act of 1964, which prohibits recipients of federal financial assistance from excluding from a program or activity, denying benefits of, or otherwise discriminating against a person on the basis of race, color, or national origin (42 U.S.C. § 2000d et seq.), as implemented by the Department of the Treasury’s Title VI regulations, 31 CFR Part 22, which are herein incorporated by reference and made a part of this contract (or agreement). Title VI also includes protection to persons with ‘Limited English Proficiency’ in any program or activity receiving federal financial assistance, 42 U.S.C. § 2000d et seq., as implemented by the Department of the Treasury’s Title VI regulations, 31 CFR Part 22, and herein incorporated by reference and made a part of this contract or agreement.”

15. Contractors who apply or bid for an award of $100,000 or more shall file the required certification that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency. Each tier certifies to the tier above that it will not and has not used federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Each tier shall also disclose any lobbying with non-federal funds that takes place in connection with obtaining any federal award. Such

disclosures are forwarded from tier to tier, up to the recipient. The required certification is included here:

a. The undersigned certifies, to the best of his or her knowledge and belief, that:
   (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
   (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
   (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.
b. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.



Signature

10/07/2022

Date

Firm Submitting Proposal: Hazen and Sawyer

Complete Address: 230 Lexington Green Circle, Suite 520, Lexington, KY 40503
Street City Zip

Contact Name: Jon Schubarth, PE Title: Vice President

Telephone Number: (859) 219-1126 Fax Number: N/A

Email address: jschubarth@hazenandsawyer.com

Appendix C | Addendum Acknowledgment

MAYOR LINDA GORTON

LEXINGTON

TODD SLATIN
DIRECTOR
CENTRAL PURCHASING

ADDENDUM #1

RFP Number: #56-2022

Date: September 26, 2022

Subject: Sanitary Sewer Remedial Measures Plan Program Management Consulting Services

Address inquiries to:
Brian Marcum
Brianm@lexingtonky.gov

TO ALL PROSPECTIVE SUBMITTERS:

Please be advised of the following clarifications to the above referenced RFP:

1. RFP electronic opening is October 7, 2022, 2:00 pm.

Todd Slatin, Director
Division of Central Purchasing

All other terms and conditions of the RFP and specifications are unchanged. This letter should be signed, attached to and become a part of your submittal.

COMPANY NAME: Hazen and Sawyer

ADDRESS: 230 Lexington Green Circle, Suite 520, Lexington, KY 40503

SIGNATURE OF BIDDER: _____

Hazen and Sawyer
230 Lexington Green Cir., Suite 520 • Lexington, KY 40503