



Hazen and Sawyer
4011 WestChase Boulevard, Suite 500
Raleigh, NC 27607 • 919.833.7152

June 9, 2026

Cleve Haddock, Lifetime CLGPO
Procurement Manager
401 S. Greene Street
Greenville, NC 27834

**Re: Professional Engineering Services Related to the Water Service Due Diligence
Preliminary Engineering Report of the Pitt County Megasite North Development**

Hazen and Sawyer is pleased to submit our proposal to provide due diligence for the Pitt County Megasite North Development Water Service Due Diligence project. We recognize the importance of evaluating methods to provide reliable, high-capacity water service to the Megasite while coordinating with parallel due diligence activities and ongoing planning efforts. Hazen is uniquely qualified, and the best team to help GUC with this effort. We bring:

Deep Understanding of GUC's Water Distribution System. Through our recent work with GUC's hydraulic model, including our planning and design work in the distribution system, and our work on the water treatment plant expansion, we have a clear understanding of system performance, existing constraints, and the scale of infrastructure required to move large volumes of water to serve the Megasite. This foundation provides a meaningful head start, allowing our team to focus on evaluating and advancing solutions rather than recreating baseline conditions.

Experience Supporting Large-Scale Due Diligence and Industrial Development. Led by Ken Horner, Hazen's in-house industrial practice brings a strong understanding of industry needs. Our team has supported complex due diligence efforts and will apply that experience to ensure the water infrastructure solutions are aligned with end-user requirements. We will ask the right questions early, coordinate with parallel efforts, and develop recommendations that are both technically sound and practical to implement.

Local Insight and Stakeholder Perspective. We have included Bryan Fagandus of ARK Consulting Group on our team to strengthen our local presence and understanding. His insight into the local social, cultural, and political landscape will support effective stakeholder engagement, inform routing alternatives, and help account for the broader impacts of growth associated with the Megasite.

Our approach is designed to provide a clear, coordinated, and actionable Preliminary Engineering Report, supported by ongoing stakeholder engagement and alignment with parallel efforts. We have structured the work to maintain steady progress while allowing for meaningful input and informed decision-making.

We appreciate the opportunity to support GUC and look forward to working collaboratively with your team. Please feel free to contact us directly with any questions.

Very truly yours,

Todd Davis, PE
Associate Vice President / Project Director

Chris Belk, PE
Associate Vice President / Project Manager

ATTACHMENT #1

RFQ Acknowledgement and Signature Form

RFQ No.: 26-25, For Professional Engineering Services Related to the Water Service Due Diligence Preliminary Engineering Report of the Pitt County Megasite North Development

The undersigned having carefully examined the location of the proposed work, the local conditions of the place where the work is to be done, the Invitation, the General Conditions, the Specifications and all of the documents for this project, proposes to enter into a contract with Greenville Utilities Commission in Greenville North Carolina perform the work listed in this RFQ, including all of its component parts, and to furnish any and all required labor, materials, equipment, insurance, bonding, taxes, transportation and services required for this project in strict conformity with the plans and specifications prepared, including any Addenda, within the time specified.

Addendum Acknowledgement:

The following addendum (addenda) is (are) acknowledged in this RFQ: 1 (responses to questions)

Acknowledgement and Signature:

1. No submittal is valid unless signed in ink by the person authorized to make the submittal.
2. I have carefully read, understand and agree to the terms and conditions on all pages of this RFQ. The undersigned agrees to furnish the services stipulated in this RFQ.

Respondent's Name and Title:

Company Name: Hazen and Sawyer

Address: 4011 Westchase Boulevard, Raleigh, NC 27607 Telephone:

(919) 863-1025

Email: tdavis@hazenandsawyer.com

Contractor License # (if applicable): NC PE License C-0381

Fax: N/A

Cell Number: (803) 767-5071

Expiration Date: N/A

Federal Tax Identification Number: 13-2904652

Authorized Signature:  Date: 06/09/2026

ATTACHMENT #3

Letter of Compliance to E-Verify for Greenville Utilities Commission

1. I have submitted a RFQ for contract or desire to enter into a contract with the Greenville Utilities Commission;
2. As part of my duties and responsibilities pursuant to said RFQ and/or contract, I affirm that I am aware of and in compliance with the requirements of E-Verify, Article 2 of Chapter 64 of the North Carolina General Statutes, to include (mark which applies):
3. X After hiring an employee to work in the United States I verify the work authorization of said employee through E-Verify and retain the record of the verification of work authorization while the employee is employed and for one year thereafter; or
4. I employ less than twenty-five (25) employees in the State of North Carolina.
5. As part of my duties and responsibilities pursuant to said RFQ and/or contract, I affirm that to the best of my knowledge and subcontractors employed as a part of this RFQ and/or contract, are in compliance with the requirements of E-Verify, Article 2 of Chapter 64 of the North Carolina General Statutes, to include (mark which applies):
6. X After hiring an employee to work in the United States the subcontractor verifies the work authorization of said employee through E-Verify and retains the record of the verification of work authorization while the employee is employed and for one year thereafter; or
7. X Employ less than twenty-five (25) employees in the State of North Carolina. Specify subcontractor: ARK Consulting Group, LLC

 Hazen and Sawyer (Company Name)

By: Todd Davis (Typed Name)

  (Authorized Signatory)

 Associate Vice President (Title)

 06/09/2026 (Date)

It is certified that this Proposal/RFQ is made in good faith and without collusion or connection with any other person submitting a proposal on these services. It is also certified that this proposal is made in good faith and without collusion or connection with any GUC employee(s).

Firm Name Hazen and Sawyer Phone (919) 833-7152

Address 4011 WestChase Boulevard

City Raleigh State NC Zip Code 27607

Fax () N/A E-Mail tdavis@hazenandsawyer.com

Authorized Official Todd Davis Title Associate Vice President
Typed Name

 Date 06/09/2026
Signature

**Your submittal should be received no later than
June 9, 2026 at 2:00 pm (EDT).**

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Section 1

Project Team

Hazen brings a proven Project Manager, strong institutional knowledge, and superior expertise in every area of service necessary to recommend an optimal approach for providing reliable and cost-effective water supply to the proposed industrial development.

Hazen's team is led by **Todd Davis**, an expert modeler who performs water distribution system modeling for GUC and is exceptionally familiar with the model and the distribution system, and **Chris Belk**, a seasoned manager and an expert in alternatives analysis and planning for municipalities and utilities. This strong management team is supported by experts in hydraulic modeling, conveyance design, water treatment and supply, industrial water usage, and distribution system planning.

Our proposed organizational chart is shown in **Figure 1-1**. Brief resumes for our team members follow. Full resumes can be found in the *Appendix*.



Figure 1-1

Hazen Benefit

Bryan Fagundus with Ark Consulting Group ensures a strong local presence and brings deep understanding of the local social, cultural, and political climate and conditions.

Mr. Fagundus will help our team:

- Navigate stakeholder engagement & coordination
- Identify benefits and challenges of routing alternatives
- Consider the location and impact of growth in surrounding areas due to the Megasite

ARK CONSULTING GROUP



PROJECT DIRECTOR

Todd Davis, PE

 **Education:** BSME

 **Years of Experience:** 19

 **Certifications:** PE (NC, NY)

 **Location:** Raleigh, NC

Mr. Davis managed the Near-term Transmission and Storage Planning project for GUC, a project that paves the way for this PER.



He also contributed to the Distribution System Master Plan for GUC and is exceptionally familiar with the hydraulic model and your infrastructure. Mr. Davis specializes in the modeling, analysis, planning, design, and construction administration of water conveyance systems. He also brings strong relevant experience in water treatment.

PROJECT RELEVANCE

- Westside Elevated Tank and Distribution System Improvements GUC, Greenville, NC
- Near-term Transmission and Storage Planning GUC, Greenville, NC
- Northwest Area Master Plan Town of Holly Springs, NC
- Conveyance PER Western Wake Intake Partners, NC

PROJECT MANAGER

Chris Belk, PE

 **Education:** MSCEnvE, BSCEnvE

 **Years of Experience:** 27

 **Certifications:** PE (NO, VA, TX)

 **Location:** Raleigh, NC

Mr. Belk will serve as Project Manager and will be the primary point of contact for GUC.



He will be responsible for schedules and budgets, providing technical advisory services, coordinating the project team, and ensuring all project deliverables undergo Hazen's QA/QC process. Mr. Belk is a seasoned and adept Project Manager and a visionary planner with comprehensive relevant experience helping utilities plan for growth and industrial development. He is an expert in the design and permitting of conveyance and storage facilities. His experience includes route development, alternatives development and analysis, regionalization assessment, and multi-stakeholder coordination for water treatment and conveyance projects.

PROJECT RELEVANCE

- Regional Water/Wastewater Utility Master Plan, TriRiver Water, NC
- Triangle Innovation Point Water and Sewer Improvements TriRiver Water, NC*
- Moncure Small Area Plan Chatham County, NC*
- US 421 Corridor Planning NC Dept. of Environmental Quality*

**Projects performed while with another firm*

Our Technical Advisors are industry leaders in water conveyance and treatment, bringing superior process and technical expertise to GUC.

Nichole Johnson, PE

Ms. Johnson co-leads the Conveyance Practice Group for Hazen's Mid-Atlantic region.

She is an expert in the design of water conveyance projects in heavily urbanized, residential, and industrial areas. Her experience includes heavily urbanized, residential, industrial, and environmentally sensitive environments and large pipe systems over miles of terrain.

 **Certification:**
PE: NC

 **Education:**
BSOE

 **Experience:**
22 years

 **Location:**
Raleigh, NC



- Near-term Transmission and Storage Planning GUC, Greenville, NC
- Water Conveyance System for City of Sanford WFF Town of Fuquay-Varina, NC
- Conveyance PER, Western Intake Partners, NC

Tom Tant, PE

Mr. Tant is the former Drinking Water and Conveyance Group Lead for the Mid-Atlantic region and an expert in water supply, treatment, and conveyance.

He is also a visionary planner with deep understanding of the water resources in the region. Mr. Tant is helping Hazen clients throughout the region make plans and develop options to meet anticipated growth.

 **Certification:**
PE: NC, NY, VA, MD, TX, DC

 **Education:**
MSCE, BSCE

 **Experience:**
38 years

 **Location:**
Raleigh, NC



- Near-term Transmission and Storage Planning GUC, Greenville, NC
- Water Conveyance System for City of Sanford WFF Town of Fuquay-Varina, NC
- Conveyance PER, Western Intake Partners, NC

PROJECT RELEVANCE

- Water Distribution System Model Build and System Analysis, ONWASA, NC
- Apex Distribution System Master Plan Town of Apex, NC
- Integrated Master Plan, Raleigh Water, NC

DISTRIBUTION SYSTEM MODELING

Kelly Turner, EI

EXPERIENCE
4 years

EDUCATION
BSOEnvE

CERTIFICATIONS
EI: NC

LOCATION
Raleigh, NC



Ms. Turner specializes in hydraulic modeling, planning, and design of water distribution systems.

She is familiar with your system through her support during the Near-term Transmission and Storage Planning project for GUC. Her experience includes hydraulic modeling, and pipeline design and field work for model calibration.

PROJECT RELEVANCE

- Sanford WFF Expansion, TriRiver Water, NC (\$192M in financing, including \$60M+ in grants)
- Cooleemee WTP Replacement Davie County, NC (\$41M SRF, Grants-\$8.4M ARPA \$1.1M State Reserve, \$1.6M EDA)
- Funding Assistance, Holly Springs, NC

GRANT COMPLIANCE

Timothy Devine, PE

EXPERIENCE
22 years

EDUCATION
MBA, MEM, BSEnvE

CERTIFICATIONS
PE: NC, NY

LOCATION
Raleigh, NC



Mr. Devine is Hazen's Economic and Financial Services Group Leader.

He is an experienced financial and economic analyst who has helped many municipal water and wastewater utilities optimize investments under multiple constraints. Mr. Devine has provided assistance to enable clients to obtain over \$900 M in grant or favorable term financing in the last five years.

David Briley, PE WTP CAPACITY EVALUATION

Mr. Briley co-leads the Drinking Water Practice Group for Hazen's Mid-Atlantic region; he is an expert in water quality and water treatment planning, process engineering and design.



He has assisted in evaluation, optimization, and design for over 60 WTPs throughout the U.S. Mr. Briley is one of Hazen's Subject Matter Experts in PFAS, ozonation, BAF, and GAC for drinking water applications.



Certification:
PE: NC, VA, NY



Education:
MSCE
BSBioS



Experience:
28 years



Location:
Raleigh, NC

- GUC WTP Upgrades Phase 1
GUC, Greenville, NC
- P.O. Hoffer and Glenville Lake
WTFs GAC Facilities
PWC, Fayetteville, NC
- Cooleemee WTP Replacement
Davie County, NC
- E.M. Johnson WTP Flocc/Sed
Basin Upgrades Phase 2
Raleigh Water, NC

Solomon Salido, EI WTP CAPACITY EVALUATION

Mr. Salido has been working on Hazen's recent projects with GUC.

He specializes in hydraulic analyses and design of water treatment and pumping facilities. He has significant experience in evaluation, testing, and design of pumping facilities, including raw water pumps, deep well pumps for a quarry pump station, and high service pumps.



Certification:
EI: NC



Education:
BSChE



Experience:
1 year



Location:
Raleigh, NC

- GUC WTP Backwash Pump
Replacement, GUC, Greenville, NC
- Teer Quarry Pump Station
City of Durham, NC
- WTP Master Plan, Roanoke Rapids
Sanitary District, NC
- Sanford WFF Expansion
TriRiver Water, NC

Ken Horner, PE PROJECT DEMANDS

As Hazen's Corporate Lead for Data Centers and Tech, Mr. Horner provides leadership on national projects across disciplines to benefit the relationship between the water and tech industries.



He is familiar with a wide variety of project scopes across the practices of water/wastewater treatment, conveyance, stormwater, groundwater, and water supply planning. Mr. Horner has extensive experience working through the due diligence process with utilities.



Certification:
PE: SC



Education:
BSE



Experience:
15 years



Location:
Greenville, SC

- 10X/GPU Invasive Due Diligence
- Project Canvas & Project
Domino, Confidential client
- Desktop Due Diligence On-call
(ongoing), Confidential client
- General On-Call - Pretreatment
Study, Confidential client
- Surface Water Initiative
for Tomorrow (SWIFT)
HRSD, Norfolk, VA

James Hennessy, PE PROJECT DEMANDS & SCHEDULING

Mr. Hennessy is an expert in conveyance design and integrated master planning including project prioritization, phasing and capital planning.



He develops projections for long term planning and trigger-based schedules and interactive dashboards for asset management and master plans. He specializes in the management, analysis, design, and construction administration of conveyance systems.



Certification:
PE: NC



Education:
BSCE



Experience:
12 years



Location:
Raleigh, NC

- Westside Elevated Tank and
Distribution System Improvements
GUC, Greenville, NC
- Northwest Area Master Plan
Town of Holly Springs, NC
- Conveyance PER
Western Intake Partners, NC
- US 421 Corridor Planning
NC Department of Environmental
Quality

Keven Duerr ENVIRONMENTAL

Ms. Duerr is an environmental scientist with experience in botany, natural systems and resources, and permitting.



Her experience includes wetland and stream assessments, threatened and endangered species habitat assessments, environmental impact statements, and federal, state, and local permitting.



Certification:
N/A



Education:
BS Bio



Experience:
24 years



Location:
Raleigh, NC

- US 421 Corridor Planning
NC Department of Environmental
Quality
- Water Conveyance System for
City of Sanford WTP
Town of Fuquay-Varina, NC
- Sanford WFF ER-EID
TriRiver Water, NC

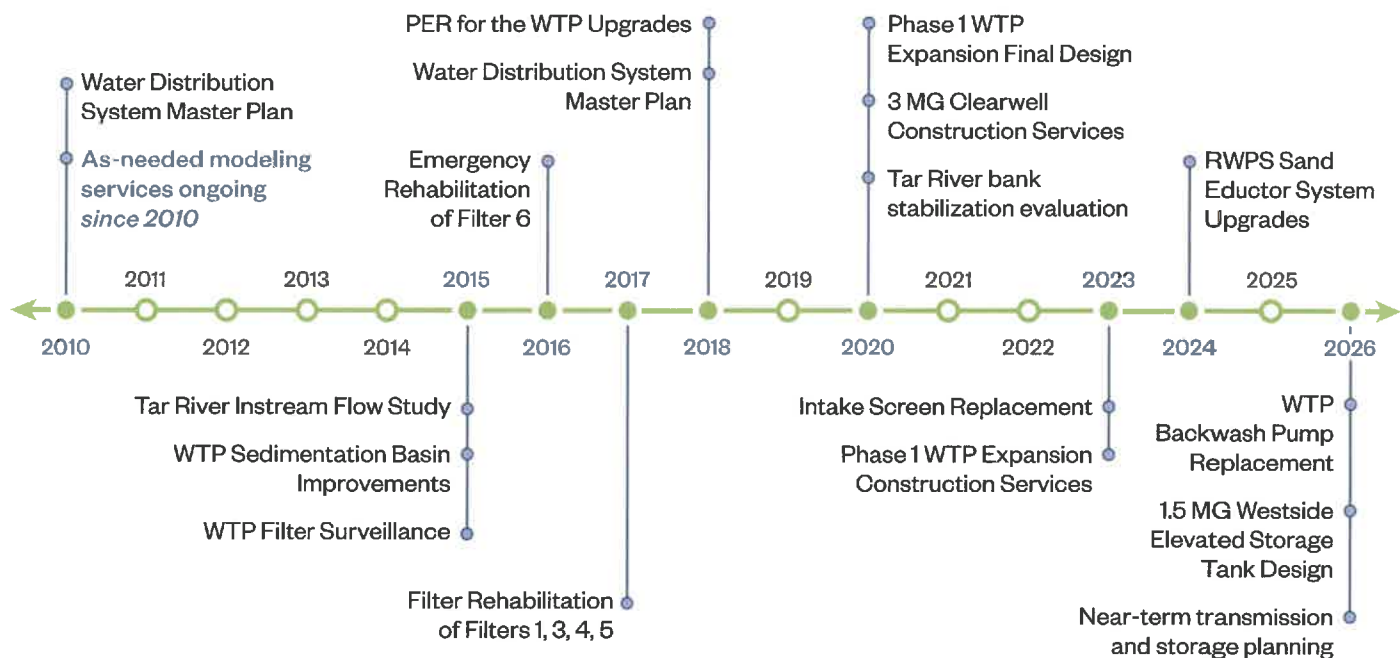
Section 2

Firm Qualifications and Similar Projects

We are experts in modeling, analysis, planning, and design of water treatment, distribution, and storage systems.

Hazen and Sawyer has served as a **trusted advisor to GUC for over 20 years**. Our recent relevant work in the distribution system and at the water treatment plant coupled with our experience performing similar due diligence efforts across the country uniquely equip us to perform this project for you.

Hazen's Experience as a Trusted Advisor



Unparalleled Distribution System Planning and Design Experience in the Region

Hazen has extensive experience in the region helping clients plan, model, and improve their water distribution systems.

Hazen has modeled

60+
systems in
North Carolina

1.4M
linear feet of pipeline design
in North Carolina from
6" to 120"

KEY

• Completed Distribution System Planning Projects



Hazen's Mid-Atlantic team has successfully delivered over **2.5** million linear feet of pipeline projects in the Mid-Atlantic, with over **1.4** million feet completed in the last **10** years

Water Treatment

Hazen is a national leader in water treatment optimization, evaluation, and design. We have successfully delivered numerous water treatment projects throughout the region; our proven approach and close collaboration with clients ensure successful delivery.

Regional Water Treatment Experience

Our staff clearly understands the requirements and specific challenges with upgrading existing facilities.

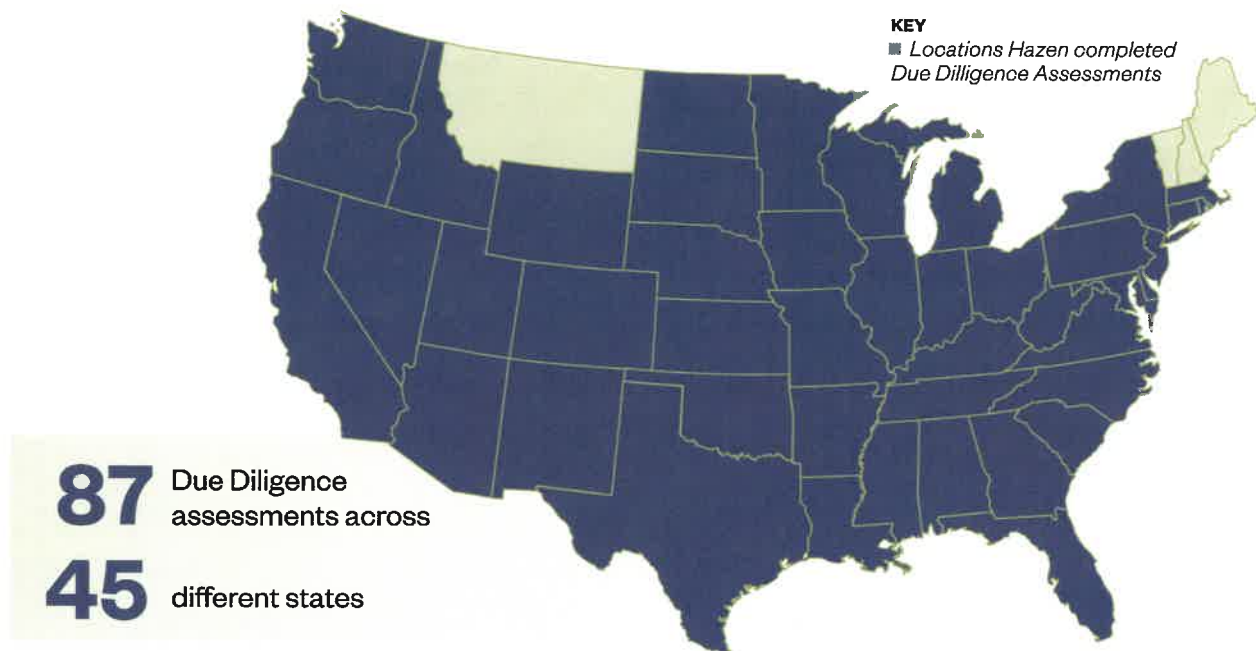
Experience at over
100 WTPs
located in the region

Designed upgrades at
30 WTPs
in the last 5 years

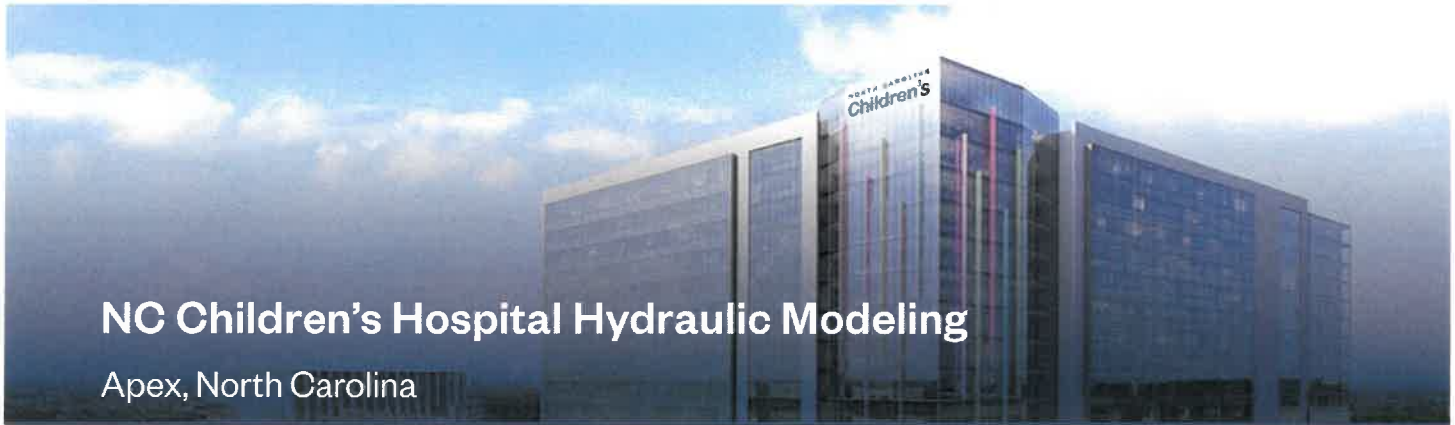
Over
2.0 BGD
WTP capacity

Due Diligence Assessments

Hazen has performed 87 due diligence assessments in 45 different States, to include 5 in North Carolina. Through this experience we have insight into the different demands, demand patterns, and water quality parameters required to serve a wide variety of industries. We will leverage this experience as we develop alternatives for supplying and phasing the necessary water infrastructure needed to serve the proposed megasite and associated ancillary growth in GUC's service area. We also recognize the criticality of aligning with multiple other disciplines inherent in site development to include wastewater, power, transportation (road/rail/air), natural gas, and fiber, and are adept at communicating water specific considerations to all stakeholders.



Our five most similar projects completed by the proposed project follow.



NC Children's Hospital Hydraulic Modeling

Apex, North Carolina

Hazen performed comprehensive hydraulic modeling and infrastructure planning to evaluate site selection and infrastructure planning for the proposed NC Children's Hospital in Apex, NC.

Hazen leveraged our extensive knowledge of the Apex distribution system to provide planning services to NC Children's Hospital in close coordination with the Town and their water resources staff.

The proposed hospital site will include a 500-bed hospital, ambulatory surgical center, medical office buildings, and a behavioral health hospital. It is adjacent to more than 1,100 acres of mixed-use development currently under construction within a rapidly growing service area. The work centered on updating and applying the Town's water distribution system model to assess existing conditions, incorporate future demand projections, and identify system improvements to reliably serve a high-demand, critical-use customer while maintaining overall system performance.

Modeling results were used to identify infrastructure improvements, including strategic transmission main upgrades and system connections, and to provide sufficient pressure and fire flow across all phases of development. Resiliency and redundancy were central considerations throughout the study. The hydraulic model was used to simulate outage scenarios and evaluate system response to potential interruptions in supply, ensuring that critical facilities could maintain service under adverse conditions. Hazen provided actionable recommendations to ensure reliable service, optimize infrastructure investments, and maintain system resiliency across multiple development phases.

The study confirmed near-term distribution system improvements including elevated storage and large diameter transmission, sized new transmission from the north and south to provide adequate resiliency, and ensured the site requirements for domestic demands, fire flow, and service pressures can be achieved at the site.

Team Members

Todd Davis
Project Director

James Hennessy
Project Manager

Tom Tant
Technical Advisor

Kelly Turner
Hydraulic Modeler

PROJECT RELEVANCE

- Hydraulic Modeling
- Transmission Routing/
Sizing
- Economic Development
- Industrial Demands
- Stakeholder Engagement



Northwest Area Utility Master Plan

Holly Springs, North Carolina

Hazen utilized the Town's water system model to evaluate performance given projected industrial growth and to identify improvements required to maintain sufficient system performance through phases of development.

Over the last decade Hazen has provided distribution system modeling services to support system expansion, facilitate development review, and maintain an accurate model. In recent years, the Town has established itself as a hub for biotechnology and life sciences. The Northwest Area Utility Master Plan evaluated overall system performance given the projected increased industrial growth and identified water system improvements required to maintain sufficient system performance through build-out of the industrial area. The plan also evaluated pumping conditions and force main sizing to convey the projected wastewater from the Northwest Area to the Town's Utley Creek WRF.

Findings have helped land large economic developments including FUJIFILM Diosynth Biotechnologies, Amgen, Genentech, Ypsomed, and a large expansion of the CSL Seqirus facility.

Recommended phased improvements include 13,000 LF of 24" transmission main, a 3-mgd sewer pump station, and 27,000 LF of 16-inch force main in the near term and 7,500 LF of 16" distribution main, 7,600 LF of 30" transmission main extension, and 1 MG elevated storage tank in the future.

Hazen continues to coordinate with developers' engineers and Town staff for continued development planning as the Northwest Area sees industries come online.

Team Members

Todd Davis
Project Director

James Hennessy
Project Manager

Tom Tant
Technical Advisor

PROJECT RELEVANCE

- Hydraulic Modeling
- Transmission Routing/
Sizing
- Economic Development
- Industrial Demands



US 421 Highway Corridor Regional Water and Wastewater Infrastructure Concept Plan

NC Department of Environmental Quality, North Carolina

Hazen provided regional planning services for the NC Department of Environmental Quality for the US Hwy 421 Corridor between I-85 and I-95.

The major utilities in the counties of Guilford, Randolph, Chatham, Lee, Southern Wake, Harnett, and Johnston were included in the evaluation. The team led by Hazen and Sawyer, supported by Freese and Nichols, WithersRavenel and Raftelis, provided a high-level evaluation of regionalization opportunities to help support identified industrial sites and associated growth along the Hwy 421 Corridor, which already includes VinFast at the Triangle Innovation Point Megasite, Wolfsped at the Chatham Advanced Manufacturing Site, and Toyota Battery Manufacturing site at the Greensboro-Randolph Megasite. The following elements were included in the project:

- Current and 2050 projected evaluations of Water and Wastewater Demand
- Evaluation of Economic Development Project Impacts on population and demand
- Regionalization Scenarios to address future growth and impact of aging infrastructure
- Evaluations of future wastewater regulations on the Cape Fear River Basin
- Evaluation of the economic impact of demand increases and the potential impact to rates

Findings concluded the viability of utilities depends on investment on regional efforts in the Triad and Lee and Randolph Counties. A collective approach to wastewater treatment will be necessary to meet future requirements in the Haw and Deep River sub-basins. Even with regionalization, significant rate impacts are anticipated. Therefore, future State and Federal subsidization of costs for growth and emerging contaminant treatment will be vital to the success of the region.

Team Members

Tom Tant
Project Director

Chris Belk
Project Engineer

James Hennessy
Project Engineer

Keven Duerr
Environmental Scientist

PROJECT RELEVANCE

- Hydraulic Analysis
- Transmission Routing/Sizing
- Economic Development
- Industrial Demands
- Stakeholder Engagement
- Funding Analysis
- Environmental Studies



Hazen is providing preliminary engineering and final design services for 17 miles of water transmission main, including booster pump station location and design, hydraulic modeling, and route analysis.

The Town of Fuquay-Varina and the Town of Holly Springs are partnering with the City of Sanford to meet long-term drinking water needs. Hazen performed preliminary engineering for the conveyance facilities to deliver water from the expanded Sanford WFF to Fuquay-Varina and Holly Springs, utilizing a shared transmission system, and coordination with the related Hazen and Sawyer City of Sanford WTP and Interbasin Transfer projects. Preliminary engineering included routing for 17 miles of water transmission main, pump station siting, and water modeling for the transmission main and Fuquay-Varina distribution system. Hydraulic modeling included transmission main sizing, booster pump station hydraulic location consideration for each route, and conveyance to each distribution system.

The recommended alternative was based on an assessment of best value considering capital costs, constructability, hydraulic performance and operation and maintenance considerations.

Design phase services are on-going and include survey, geotechnical investigation, stakeholder engagement, design, permitting, and bidding.

Team Members

Nichole Johnson
Project Manager

Todd Davis
Technical Advisor

Chris Belk
Technical Advisor

James Hennessy
Project Engineer

Keven Duerr
Environmental Scientist

PROJECT RELEVANCE

- Hydraulic Modeling
- Transmission Routing/
Sizing
- Stakeholder Engagement
- Environmental Studies



Finished Water Transmission System Preliminary Engineering Report

Western Intake Partners, North Carolina

Hazen provided planning and preliminary engineering to define the optimum raw and finished water conveyance infrastructure to meet the needs of the Western Intake Partners.

The Western Intake Partnership (WIP), consisting of four Jordan Lake Water Supply allocation holders (collectively, “Partners”) – the City of Durham, Orange Water and Sewer Authority (OWASA), Chatham County and the Town of Pittsboro initiated a program to access their Jordan Lake water supply storage allocations through a water supply intake on the west side of Jordan Lake and finished water infrastructure to each of the Partners’ distribution systems.

The project was based on near- and long-term demands of 25 mgd and 85 mgd, respectively. Transmission infrastructure extends over 19 miles. The work included hydraulic modeling and route evaluations to define the facilities providing the best value considering capital costs, life-cycle costs, reliability, broad community needs and energy use. The Envision sustainability framework was applied to the planning and preliminary engineering phases.

Since completing the PER, Hazen has begun design on the finished water transmission system, including: 87,000 lf of 42” Finished Water Transmission Main from the Treatment Facility to the City of Durham Distribution System; Meter site for connection to Chatham County distribution system – US64; Intermediate Two 1 MG Elevated Storage Tanks; and a 27-mgd Booster Pump Station.

Team Members

Tom Tant
Project Director

Nichole Johnson
Project Manager

James Hennessy
*Project Manager
(Program Liaison)*

Chris Belk
Technical Advisor

Todd Davis
Hydraulic Modeling Lead

PROJECT RELEVANCE

- Hydraulic Modeling
- Transmission Routing/
Sizing
- Stakeholder Engagement
- Environmental Studies

Section 3

Project Understanding

Hazen's strong recent relevant work for GUC gives us comprehensive understanding and uniquely qualifies us for this project.

GUC is initiating a PER to support water service planning as part of the due diligence effort for the Pitt County Megasite North. This site is identified as a high-potential Megasite and is currently being screened to attract manufacturing investment under the North Carolina Megasite Readiness Program (NCMRP). The program will fund the due diligence effort and requires compliance with grant documentation and reporting requirements.

Hazen's on-going transmission and storage planning analysis for GUC includes initial planning considerations for the Megasite and Indigreen Corporate Park. This work provides a strong technical foundation for evaluating a broader range of development scenarios and infrastructure needs to meet on-site and off-site demands, to include potential growth north of the Megasite around the Town of Bethel.

We know GUC's water system. Our recent relevant work gives us thorough understanding of your goals for this project. We understand how to support your current near-term needs while also positioning you to readily support economic development in the northern portions of the system. Our work also defines a transmission strategy to convey water to the southern portion of the system and addresses conveyance capacity and system operational reliability needs.

Based on our comprehensive modeling work, we understand the need to further analyze storage as a result of the Megasite. We also know that the planned Westside Storage Tank is compatible with storage improvements supporting the Megasite since these improvements will serve separate functions in different areas of the system.

We also understand that GUC's water treatment plant (WTP) is rated for 32 mgd providing significant permitted capacity to serve the site beyond the current peak day demand of 19.3 mgd. Our recent hydraulic water system analysis demonstrates that the existing water delivery capacity in the northern portion of the water system is insufficient (approximately 2 mgd) to serve the potential demand associated with a Megasite. Much of that 2 mgd may be directed to other near-term growth at the Indigreen Corporate Park. This supports the need for a phased approach for implementing transmission system improvements, which will be warranted early in the development of this Megasite.

Hazen Benefit

Unique understanding ensures an efficient and thorough PER for GUC.

Through our recent hydraulic modeling we understand the hydraulic challenges and the size of the solutions to move big water to this Megasite.

Hazen's thorough understanding of all elements of this project:

- ☒ Ensures a comprehensive PER that supports Megasite Readiness funding
- ☒ Advances the site toward certification and recruitment readiness and
- ☒ Guides implementation of infrastructure improvements in a phased, cost-effective, and constructible manner

Section 4

Project Approach

Hazen's proven approach to distribution system modeling, analysis, and planning ensures an efficient and focused Preliminary Engineering Report for the Pitt County Megasite due diligence effort.

Hazen has maintained and operated GUC's existing water system hydraulic model for over 15 years giving us a detailed understanding of system capacity, limitations, and operations, as well as planned improvements.

We understand how GUC's infrastructure performs under varying demand conditions and how available treatment capacity can be conveyed to support future needs. This is central to the Megasite effort, where the primary challenge is reliably and efficiently delivering capacity to the site and growth areas while maintaining the high standard of service existing customers currently appreciate.

Hazen's approach ensures close coordination with GUC staff and other stakeholders, alignment with regional growth objectives, and clear documentation supporting both technical decision-making and NCMRP funding requirements. Our familiarity with GUC's system and planning priorities enables us to move efficiently into alternatives evaluation, focusing on constructible, phased solutions that minimize risk and support timely implementation.

Hazen Benefit

A strong head start

Our significant history with GUC's hydraulic model will enable us to focus on advancing solutions, rather than recreating baseline conditions, as we evaluate alternatives to serve the Megasite and associated growth.

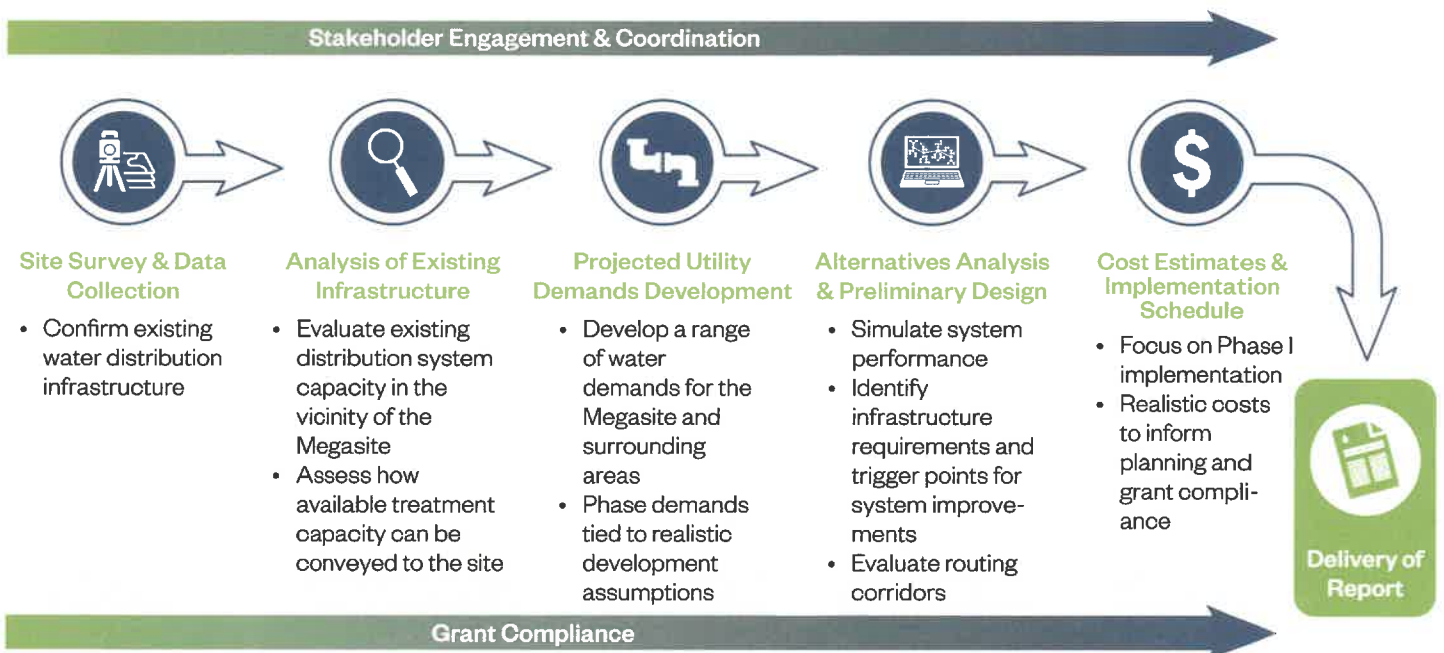


Figure 4-1

Stakeholder Engagement & Coordination

Planning and stakeholder coordination will be integrated throughout the study to support informed decision-making and alignment with GUC and regional objectives. By leveraging our understanding of the system, engagement will focus on key decisions that influence delivery strategy, phasing, and service levels.

Coordination with Pitt County and other stakeholders will ensure alignment with economic development goals and NCMRP requirements. We will focus these discussions on confirming development assumptions, understanding user needs, and ensuring the recommended infrastructure approach supports site competitiveness and certification readiness.

Hazen Benefit



Local perspective on ancillary growth and its impact on infrastructure planning

Headquartered in Greenville, NC, ARK Consulting Group, PLLC bolsters Hazen's stakeholder understanding and outreach

To strengthen this effort, Hazen has included **Bryan Fagundus of Ark Consulting Group, PLLC** on our team. Based in Greenville, Bryan brings valuable insight into the local development community, complementing Hazen's technical expertise. He will support stakeholder coordination efforts, help evaluate the benefits and challenges of routing alternatives, and provide perspective on ancillary growth and its impact on infrastructure planning.

Engagement will be structured around key decision points including confirmation of demand scenarios, identification of delivery strategies, and screening of alternatives allowing stakeholders to provide input as the analysis progresses. This approach supports consensus-building, reduces the potential for rework, and keeps the study focused on actionable outcomes.

Coordination with other GUC infrastructure due diligence planning efforts (gas, sewer, etc.) will align corridor planning considered in this PER with other GUC planning.

Hazen's experience working with utilities, local governments, and regulatory agencies enables us to translate technical analyses into clear, concise information that supports decision-making by both technical and non-technical stakeholders.

Hazen Benefit

In-house industrial practice group understands industry needs

Led by Ken Horner, Hazen will leverage our in-house industrial practice group experience, keeping all phases of industrial development in mind. We understand the various industries' needs and the development planning process. We ask the right questions to make sure this infrastructure serves them well.



Throughout the study, we will provide focused workshop materials that clearly present assumptions, findings, and recommendations, enabling GUC and your partners to make timely, confident decisions.

Site Survey & Data Collection

Confirming existing water distribution infrastructure is a critical early step. We will leverage GUC's latest GIS, recent planning work, and our direct experience with the hydraulic model to verify the system configuration and incorporate recent infrastructure updates. This effort will be efficient and focused, allowing us to quickly transition from data validation to system validation.

Analysis of Existing Infrastructure

In parallel with data collection, we will further evaluate existing distribution system capacity in the vicinity of the Megasite and assess how available treatment capacity can be conveyed to the site. This evaluation will consider hydraulic performance and operational flexibility, with an emphasis on maintaining reliable service while accommodating future growth. Hazen's experience integrating treatment, transmission, and system operations enables us to identify solutions that are both hydraulically sound and operationally sustainable.

Projected Utility Demands Development

Projected water demands for the Megasite and surrounding areas will be developed using a range of planning scenarios informed by stakeholder input and regional growth expectations. Demands will be phased over time and tied to realistic development assumptions, providing a clear framework for evaluating infrastructure needs. Consideration for ancillary growth needed to support the Megasite and its impact on infrastructure planning will be incorporated into demand projections.

Alternatives Analysis & Preliminary Design

Using GUC's hydraulic model, we will simulate system performance across these demand scenarios to identify infrastructure requirements and trigger points for system improvements. This allows us to evaluate not only ultimate demands, but also intermediate conditions that drive phased implementation.

Growth projections across the broader system will also be revisited considering the Megasite. Transmission strategies will be evaluated to ensure corridors serving the Megasite also support regional growth, maximizing long-term system value.

Considering Water Supply

- Prior in-stream flow study indicated a yield of 47 MGD, and will be reviewed
- Coordination with DWR as warranted

Hazen Benefit

Experience at the WTP provides valuable insights

Hazen brings insights into current treatment and hydraulic capabilities and which treatment units may need to be expanded to meet large demands, including upgrading the existing raw water and finished water pumping facilities.



Hazen's recent and ongoing evaluations of GUC's transmission and storage system, including the 2018 PER and subsequent near-term planning updates, provide a strong foundation for defining effective infrastructure solutions to serve the Megasite and surrounding growth areas.

Figure 4-2 illustrates the range of potential transmission corridors connecting the existing system to the Megasite, including previously evaluated alignments and additional concepts extending around the east and west. This framework highlights how different routing strategies can be leveraged to support both Megasite demands and broader system objectives. Ensuring continued service expectations for the Town of Bethel and surrounding areas will be a point of focus.

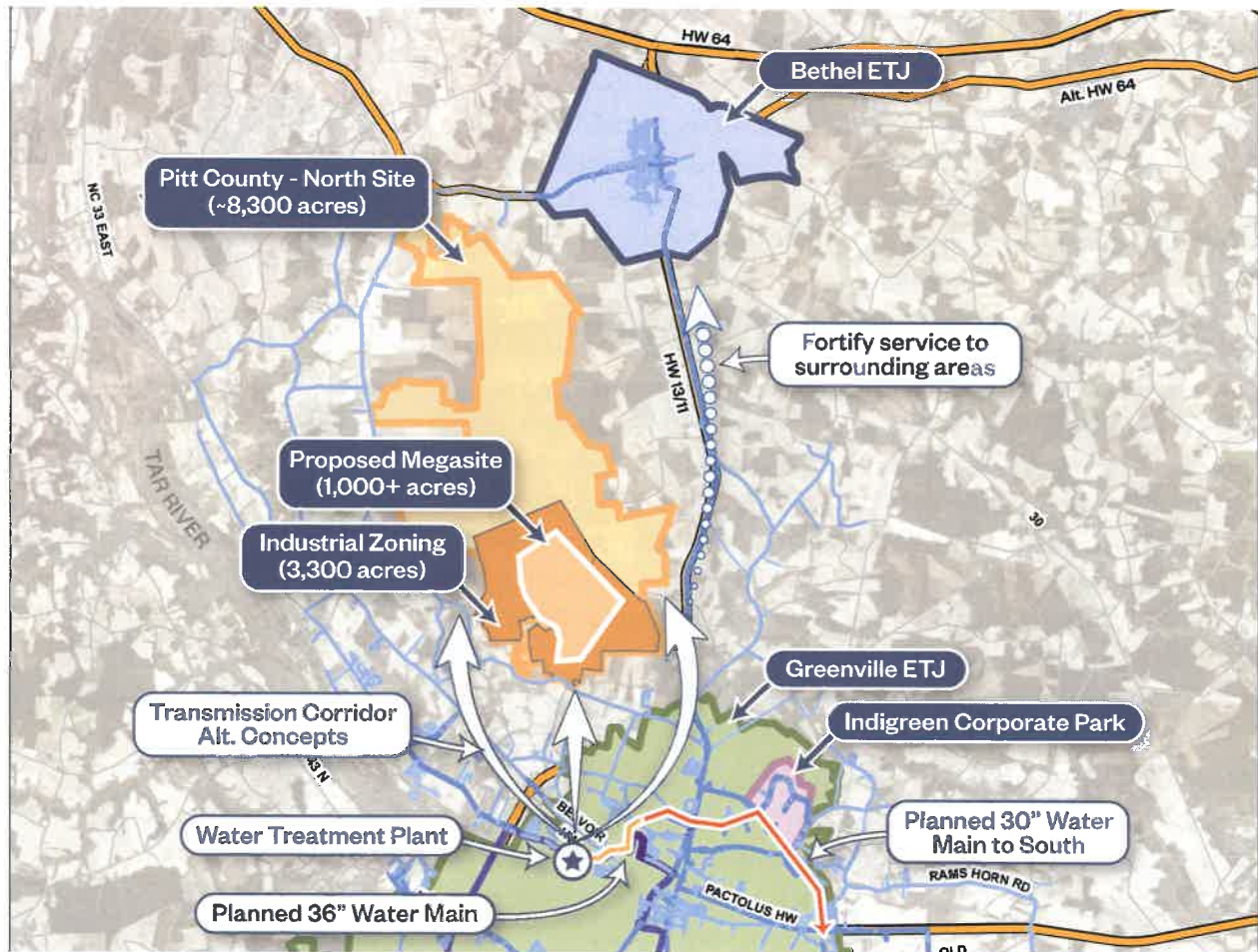


Figure 4-2: Example Transmission Corridors to Consider

Previous analyses identified conveyance limitations from the water treatment plant and developed a strategy to strengthen system reliability through expanded transmission capacity, particularly along the eastern portion of the service area. We have completed more recent evaluations that have refined these recommendations to address near-term needs while positioning GUC to support economic development in the northern portion of the system, including the proposed Megasite. These improvements, including additional storage and targeted transmission expansion, remain aligned with GUC's long-term system vision.

Building on this foundation, our approach will focus on identifying infrastructure solutions that provide **multiple system benefits** supporting the Megasite while also improving reliability, redundancy, and capacity for broader regional growth. In many cases, a single transmission investment can be positioned to address multiple objectives, including reinforcing system performance, supporting planned growth north of the Tar River, and improving operational flexibility across the system.

We will perform targeted desktop evaluations to identify feasible transmission corridors and storage locations, incorporating environmental and constructability considerations from the outset. This initial screening will be followed by site visits to confirm field conditions and identify constraints that may affect routing, constructability, or cost. Environmental factors will be evaluated for each corridor. This integrated, field-informed approach allows us to focus on alternatives that are both practical and implementable.

While our recent modeling evaluation considered just one option for leveraging planned infrastructure corridors to direct water to the Megasite, we recognize the need to evaluate numerous routing and delivery options to achieve capacity and reliability goals for the northern portion of the water system.

Evaluating Environmental Impacts



Environmental factors including wetlands, floodplain impacts, and potential effects on protected species will be evaluated for each corridor to avoid high-risk or infeasible alternatives.

For this PER, we will:

- Develop conceptual alternatives for extending and/or upgrading water service to the Megasite and surrounding areas.
- Expand concepts beyond previously evaluated routing assumptions (e.g., Fleming Road) to include additional east and west corridor approaches that may better align with long-term system growth, system reliability, permitting constraints, and constructability considerations.
- Consider transmission routing, storage requirements, and system reinforcements to support phased implementation while maintaining reliable service and aligning with long-term system goals.
- Evaluate each alternative for capital cost, operational performance, system reliability, environmental impacts, and constructability.

Our experience designing and permitting large-diameter transmission mains informs practical routing strategies that can be efficiently permitted and constructed.

Combined with our understanding of GUC's system, this allows us to focus on alternatives that are realistic, cost-effective, and compatible with long-term system expansion.

Cost Estimates & Implementation Schedule

For the recommended alternative, we will develop planning-level cost estimates and an implementation phasing plan aligned with projected demand and system needs. Cost estimates will reflect key infrastructure components, including transmission improvements, storage, and system upgrades.

Phasing will be tied to demand triggers, allowing GUC to align capital investments with development timing while maintaining system performance and reliability. This approach provides flexibility while ensuring infrastructure is delivered in a cost-effective and constructible manner.

Grant Compliance

We will prepare the PER in accordance with NCMRP grant requirements, ensuring all documentation supports funding, certification, and due diligence objectives. The report will clearly document assumptions, methodologies, alternatives evaluated, and recommended Phase I improvements, providing a defensible basis for both technical decision-making and funding justification.

Hazen Benefit



Cost Estimates & Implementation Schedule

All analyses and results will be documented in a Preliminary Engineering Report (PER) that provides a clear, technically sound basis for decision-making, funding coordination, and advancement of the Megasite toward certification and construction readiness. Our focus is on delivering a document that not only meets NCMRP requirements but also serves as a practical roadmap for implementation.

The PER will focus on Phase I development and will present the alternatives evaluated, the recommended approach, and associated planning-level costs. We know timeliness and maintaining schedule is important for this PER. The Draft PER will be submitted to GUC in May 2027 for review by GUC, local planners, funding agencies, and other stakeholders. The Final PER, incorporating stakeholder input, will be completed in October 2027 and prepared for submission to the appropriate agencies.

Section 5

Project Schedule

Hazen's proposed schedule meets GUC's due date for a preliminary PER in May 2027.

Our proposed schedule is outlined in **Figure 5-1**. We have assumed an August 2026 start, with a draft PER submittal in May 2027 and a Final PER in October 2027. The schedule includes time for GUC review of both submittals and incorporation of comments prior to finalization. A stakeholder coordination period is included during development of the Final PER to support meetings and collaboration with parallel due diligence efforts. Beyond this defined period, we anticipate ongoing coordination with stakeholders throughout the project and will prepare materials as needed to support these discussions. We propose monthly progress meetings with GUC to review status and obtain timely feedback. The schedule also accounts for grant compliance activities occurring throughout the duration of the project. While structured to maintain steady progress, the schedule can be accelerated, if needed, through task overlap and/or reduced review durations. Estimated hours are included for each task, and the level of effort can be tailored once specific project needs are further defined during scoping.

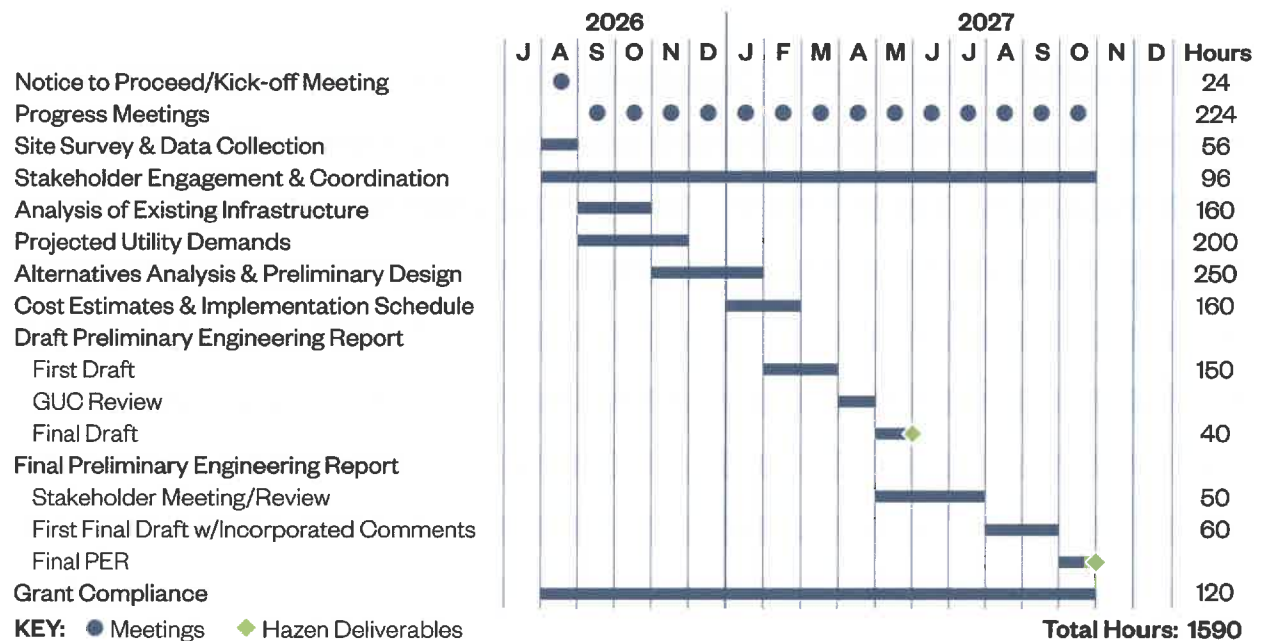


Figure 5-1

Section 6

References

Our references will attest to our ability to deliver cost-effective, high-quality evaluations and client-focused solutions.

For 75 years, Hazen and Sawyer has delivered engineering solutions to our clients' most-pressing challenges. We work closely with our clients to ensure their input is incorporated, their concerns are addressed, and their goals for each project are achieved. As requested by the RFQ, we have provided contact information for references in **Figure 6-1**. We encourage you to contact your peers to substantiate Hazen's responsive service and superior technical abilities.



	Northwest Area Master Plan Kendra Parrish, PE, CFM Executive Director of Utilities & Infrastructure Town of Holly Springs kendra.parrish@hollyspringsnc.gov (919) 557-3935
	Water Conveyance System for City of Sanford Mike Wagner Public Utilities Director Town of Fuquay-Varina mwagner@fuquay-varina.org (919) 567-3911
	NC Children's Hospital Hydraulic Modeling Simon George Vice President, Real Estate, Development, & Facilities at NC Children's NC Children's Simon.George@ncchildrens.org (919) 607-3842
	Water Transmission System PER Syd Miller Assistant Director for Administration, Communication & Compliance Department of Water Management City of Durham Sydney.Miller@durhamnc.gov 919.560.4381 ext. 35201

Figure 6-1



Todd Davis, PE

Associate Vice President

Mr. Davis is an expert in the analysis, planning, design, and construction administration of water and wastewater conveyance projects.

Education

BSME, University of South Carolina, 2007

Certification/License

Professional Engineer: NC, NY

Areas of Expertise

- Field testing and analysis of water distribution systems
- Water distribution system modeling and planning
- Hydraulic evaluation of pumping
- Water treatment

Experience

- 19 total years
- 19 years with Hazen

Professional Activities

Water For People

American Water Works Association

NC Children's Hospital Hydraulic Modeling, Town of Apex, NC

Project Director. Led the vision for the hydraulic modeling and system planning for a proposed 500-bed hospital campus and adjacent 1,100+ acre mixed-use development in a rapidly growing service area. The project included updating and applying the Town of Apex water distribution model to evaluate existing conditions, project future demands, and assess system performance. Identified transmission upgrades, storage needs, and key system connections to meet pressure, fire flow, and reliability requirements. Delivered actionable recommendations to support phased development, ensuring resiliency, redundancy, and reliable service under outage scenarios for this critical-use facility.

Finished Water Transmission System

Western Intake Partners (WIP), NC

Project Engineer. Hazen is designing 87,000 lf of 42" Finished Water Transmission Main, a metered connection to the Chatham County distribution system, two 1-MG Elevated Storage Tanks, and a 27 MGD booster pump station. WIP includes four Jordan Lake Water Supply allocation holders – the City of Durham, OWASA, Chatham County, and the Town of Pittsboro. Mr. Davis led the hydraulic modeling of numerous routing alternatives from the WTP to the Partner's systems and provided insights into benefits and challenges associated with hydraulic conveyance, operational strategies, and the equalization storage analysis needed within the transmission system. Mr. Davis also evaluated how water is best delivered to each of the Partner's water systems.

Pullen to Bain Reinforcing Main, Raleigh Water, NC

Hydraulic Modeling. Project includes preliminary engineering, routing study, design, and construction administration for approximately 15,300 feet of 36-inch transmission main, 2,000 feet of 24-inch water main, 8,600 feet of 16-inch reclaimed water main, and 6,200 feet of 6 and 8-inch water distribution main replacement. The infrastructure additions and improvements are through a heavily developed residential, commercial, and institutional area outside of Downtown Raleigh requiring significant coordination with many private, state, and municipal stakeholders. Services include route development, hydraulic modeling, cost estimation, design, permitting, bidding, and construction administration.



Chris Belk, PE

Associate Vice President

Mr. Belk is a seasoned and adept Project Manager and a visionary planner with comprehensive relevant experience helping utilities plan for growth and industrial development.

Education

MS, Environmental Engineering,
North Carolina State University,
1999

BS, Environmental Engineering,
North Carolina State University,
1996

BA, Anthropology, Wake Forest
University, 1992

Certification/License

Professional Engineer: NC, VA, TX

Areas of Expertise

- Project management
- Conveyance design and permitting
- Water/Wastewater master planning
- Mechanical design of water and wastewater treatment facilities
- Water resources planning
- Environmental permitting
- Hydraulic design

Experience

- 27 total years
- 20 years with Hazen

Professional Activities

North Carolina American Water
Works Association

- Safewater Endowment Committee, Active Member
- Board of Trustees, WEF Delegate (2018-2021)
- Board of Trustees (2009-2016), Served as Chair in 2014
- Water for People Committee, past Chair – Kenneth J. Miller Founders Award recipient

Triangle Innovation Point Water and Sewer Improvements City of Sanford, NC*

Route Evaluation & Permitting Lead. Provided preliminary and final design services and environmental permitting assistance for additional water and sewer capacity required to serve the incoming industry at Triangle Innovation Point (TIP). The TIP is one of the largest economic development projects in North Carolina's history and paved the way for the area to compete on the global stage to recruit substantial projects. The project was completed in multiple phases and funded by federal and state grants.

Moncure Small Area Plan, Chatham County, NC*

Water/Wastewater Services Lead. Worked with Nealon Planning and others to develop a small area plan for the Moncure area of Chatham County. The electric car maker VinFast located a manufacturing facility on the eastern portion of the Triangle Innovation Point megasite known as "TIP East" near Moncure. Mr. Belk's role was to evaluate and make recommendations for water and wastewater infrastructure needs for multiple growth scenarios. The work included numerous public meetings to solicit the input of the community and help them to develop their vision of future land use in this southeastern portion of the County.

US Highway 421 Corridor Regional Water and Wastewater Infrastructure Concept Plan

NC Department of Environmental Quality, NC

Chatham/Lee County Lead. Served as Chatham/Lee County lead for the regional water and wastewater regionalization evaluation encompassing major utilities across Guilford, Randolph, Chatham, Lee, Southern Wake, Harnett, and Johnston Counties. Coordinated with Chatham and Lee County stakeholders and supported evaluation of 2050 water and wastewater demands, economic development impacts, regionalization strategies, regulatory requirements, and rate implications. The study assessed utility needs to support major industrial growth along the Hwy 421 Corridor and identified the need for regional investment, collaborative wastewater solutions, and State/Federal funding to meet future demand and regulatory challenges.

**Projects performed while with another firm*



Nichole Johnson, PE

Associate Vice President

Ms. Johnson co-leads the Conveyance Practice Group for Hazen's Mid-Atlantic region and is an expert in the design of water conveyance projects.

Education

BSCE, The University of Toledo,
2004

Certification/License

Professional Engineer: NC

Areas of Expertise

- Water distribution main design
- Wastewater collection system design and evaluation
- Wastewater treatment facility evaluations and design

Experience

- 22 total years
- 12 years with Hazen

Professional Activities

American Water Works Association

Finished Water Transmission System

Western Intake Partners (WIP), NC

Project Manager. Hazen is designing 87,000 lf of 42" Finished Water Transmission Main, a metered connection to the Chatham County distribution system, two 1-MG Elevated Storage Tanks, and a 27 MGD booster pump station. WIP includes four Jordan Lake Water Supply allocation holders – the City of Durham, OWASA, Chatham County, and the Town of Pittsboro. The PER included transmission main route analysis and siting of the storage tanks and pump station. The design includes survey and SUE of the corridor, geotechnical, hydraulic modeling, permitting, easement acquisition for 100 easements, and bidding. Additionally, the Envision sustainability framework is being applied to all components of the project.

Water Conveyance System for City of Sanford WFF

Town of Fuquay-Varina, NC

Project Manager. Hazen performed preliminary engineering and design for conveyance facilities to deliver water from Sanford to Fuquay-Varina and Holly Springs. Preliminary engineering included a routing study for 17 miles of transmission main, pump station siting, modeling for the transmission main and Fuquay-Varina distribution system, and coordination with the related Hazen, City of Sanford WTP and IBT projects. Services include design, permitting, and bidding of 13.5 miles of 36" transmission main, 5 miles of 24" and 30" distribution system piping, two booster pump stations and two 1.5 MG ground storage tanks. Permitting includes NCDOT, Norfolk Southern Railroad, NC Public Water Supply, NC Erosion and Sediment Control, Chatham County Site Approval, 401/404 Environmental Approval, and Fuquay-Varina Site Plan Approval.

Southeast Feeder Main, City of Greensboro, NC

Technical Advisor. The project consists of 66,000 lf of 24", 16", and 8" water transmission main. The project will improve hydraulic conductivity in this area of the water distribution system and will indirectly assist in supplying the Greensboro-Randolph Megasite. The project is divided into five independent contracts for effective management and construction schedule. Project permitting includes NCDOT and railroad encroachment agreements, 401/404 approval, NC Public Water Supply ATC, NC E&SC, and county specific permits.



Tom Tant, PE

Vice President

Mr. Tant is the former Mid-Atlantic Conveyance Group Lead for Hazen and Sawyer and an expert in the planning, routing, design, rehabilitation, replacement, and construction of water conveyance systems.

Education

MCE, North Carolina State University, 1993

BSCE, North Carolina State University, 1991

Certification/License

Professional Engineer: NC, NY, VA, MD, TX, DC

Areas of Expertise

- Distribution system planning, design and rehabilitation
- Collection system planning, design and rehabilitation
- Pumping facility design
- Construction administration

Experience

- 38 total years
- 35 years with Hazen

Professional Activities

American Water Works Association

Water Environment Federation

Association of State Dam Safety Officials

Water Conveyance System for City of Sanford WTP Town of Fuquay-Varina, NC

Project Director. Hazen performed preliminary engineering and design for conveyance facilities to deliver water from Sandford to Fuquay-Varina and Holly Springs. Preliminary engineering included a routing study for 17 miles of transmission main, pump station siting, modeling for the transmission main and Fuquay-Varina distribution system, and coordination with the related Hazen, City of Sanford WTP and IBT projects. Services include design, permitting, and bidding of 13.5 miles of 36" transmission main, 5 miles of 24" and 30" distribution system piping, two booster pump stations and two 1.5 MG ground storage tanks. Permitting includes NCDOT, Norfolk Southern Railroad, NC Public Water Supply, NC Erosion and Sediment Control, Chatham County Site Approval, 401/404 Environmental Approval, and Fuquay-Varina Site Plan Approval.

Finished Water Transmission System, Western Intake Partners (WIP), NC

Project Director. Hazen is designing 87,000 lf of 42" Finished Water Transmission Main, a metered connection to the Chatham County distribution system, two 1-MG Elevated Storage Tanks, and a 27 mgd booster pump station. WIP includes four Jordan Lake Water Supply allocation holders – the City of Durham, OWASA, Chatham County, and the Town of Pittsboro. The PER included transmission main route analysis and siting of the elevated storage tanks and booster pump station. The design includes full survey and SUE of the transmission corridor, geotechnical investigation, hydraulic modeling, permitting, easement acquisition for 100 easements, and bidding. Additionally, the Envision sustainability framework is being applied to all components of the project.

Occoquan River Crossing, Fairfax Water, VA

Project Manager. System analyses, planning, preliminary engineering and detailed design for 2,500 lf of 36" and 42" water transmission main to serve Prince William County Service Authority (PWCSA) and Virginia-American Water (V-AW) south the Occoquan River. The project is jointly funded by Fairfax Water, PWCSA and V-AW. The river crossing of parallel 42" transmission mains will be completed via a 8 ft x 10 ft rock tunnel.



Kelly Turner, EI

Assistant Engineer II

Ms. Turner specializes in the analysis, planning, and design of water distribution systems.

Education

BS, Environmental Engineering,
North Carolina State University,
2022

Certification/License

Engineer Intern: NC

Areas of Expertise

- Field testing and analysis of water distribution systems
- Water distribution system modeling
- Distribution system master planning

Experience

- 4 total years
- 4 years with Hazen

E.M. Johnson Raw Water Main PER, Raleigh Water, NC

Project Engineer. This project includes preliminary routing and design for a new raw water line from Falls Lake to E.M. Johnson WTP (EMJWTP). This additional waterline will add resiliency and redundancy to the water system and eliminate a bottleneck which also serves as a single point of failure. Analysis includes route selection and analysis, cost estimates, as well as material recommendations

Raleigh Water Integrated Master Plan, Raleigh Water, NC

Project Engineer. Completed an analysis of the water system performance and recommended transmission improvements and operational conveyance strategies to address capacity and reliability goals.

Apex Water Model Update, Town of Apex, NC

Project Engineer. Built hydraulic model in Infowater Pro, performed field testing (FFTs and HGLs) and calibrated model, demand and production analysis (diurnal curve production, NRW, billing data, MDD PF). Presented “Navigating the Nuances of Distribution Model Calibration in Light of Regional System Interconnectivity” at NC One Water Fall 2025 Conference.

Water System Model Update, Onslow County Water and Sewer Authority, NC

Project Manager. Led the rebuilding of the hydraulic water system model using GIS data; planned and performed field tests (HGL tests, fire flow tests) for model calibration. The model was updated using recent ONWASA billing records. Led operator interviews to ensure the operations of the water system, treatment plant finished water pumps, Black Creek Aquifer wells, and distribution system.

Cape Fear Public Utility Authority, Water Master Planning City of Wilmington, NC

Project Engineer. This project includes evaluating the current water distribution system and recommending capital improvement projects to fix system deficiencies. Hydraulic modeling was performed in Infowater Pro for current and future planning year conditions. Improvements were recommended based on pressures, velocities, fire flow, and water age.



Tim Devine, PE

Senior Associate

Mr. Devine is Hazen's Economic and Financial Services Group Leader; he has helped clients obtain over \$900 M in grant or favorable term financing in the last five years.

Education

BSEnvE, United States Military Academy at West Point, 2004

MBA, University of North Carolina at Chapel Hill, 2012

MEM (Master of Environmental Management), Duke University, 2012, Water and Air Resources Concentration

Leadership in Energy and Environmental

Certification/License

Professional Engineer: NC, NY

Areas of Expertise

- Environmental permitting and analysis
- Financial analysis
- Municipal water and wastewater process and design
- Master planning

Experience

- 22 total years
- 14 years with Hazen

Professional Activities

Water Environment Federation

American Water Works Association

- Veteran Liaison, NC

NC One Water

Utility Management Committee Chair, 2022

WTP Expansion Project Funding Analysis, Greenville Utilities Commission, Greenville, NC

Task Lead. Assisted GUC in analysis of available below market rate funding opportunities for their WTP expansion project and led the development and submittal of applications for identified financing alternatives. Project was approved for over \$65 million of low interest funding through a combination of both NC State Revolving Fund loans and EPA WIFIA financing. Enabled the entire project to be funded at a lower interest rate than if funded by traditional sources such as revenue bonds, saving GUC millions of dollars on annual debt service payments over the lifetime of the loans. Was the first project in NC to be selected for both SRF and WIFIA financing.

Sanford WFF Expansion Regional Funding Assistance TriRiver Water, NC

Funding Assistance. Assisted the City of Sanford, Town of Holly Springs and Town of Fuquay-Varina obtain over \$220 million in low-interest loan and grant financing from over six different funding programs/sources. Mr. Devine oversaw the strategic review of potential funding opportunities, development of selected funding opportunity applications, and coordination with funding agencies post award for compliance with regulatory administrative requirements. Funding applications and approved funding accruals were built over a four-year period, maximizing the total funding amounts that each of the participating partners were able to obtain to support this project. This project received the largest amount of Drinking Water State Revolving Fund awards ever given to a project in the State of North Carolina.

Funding Assistance, Town of Holly Springs, NC

Project Manager. Led a team of engineers and financial analysts in assisting the Town of Holly Springs prepare four funding applications for the Spring 2022 NC Division of Water Infrastructure funding round. The applications included requests for funding assistance for the Town's participation in the City of Sanford WTP expansion project, the construction of a new water distribution pipeline to connect the Town to the City of Sanford WTP, and develop asset management plans for both the Town's water and wastewater systems. The total application request was for \$40 million in low interest loan funding and \$400k in planning grant funding.



David Briley, PE

Vice President

Mr. Briley co-leads the Drinking Water Practice Group for Hazen's Mid-Atlantic region; he is an expert in water treatment and one of Hazen's Subject Matter Experts in PFAS.

Education

MSCE, North Carolina State University, 1998

BS, North Carolina State University, 1993

Certification/License

Professional Engineer: NC, NY, VA

Areas of Expertise

- Water treatment plant evaluation and process optimization
- Water treatment pilot testing
- Water treatment plant design and construction
- Water and wastewater master planning
- Water supply planning
- Environmental assessments
- Interbasin transfer certifications

Experience

- 28 total years
- 17 years with Hazen

Professional Activities

American Water Works Association

North Carolina American Water Works Association-Water Environment Association

American Council of Engineering Companies

WTP Expansion Phase 1

Greenville Utilities Commission, Greenville, NC

Project Manager. Design of upgrades to expand WTP capacity from 22 to 32 mgd and to position GUC for compliance with future regulated contaminants. Pilot testing of intermediate ozone and biologically active filtration (BAF) was conducted to evaluate treatment benefits for converting the WTP to BAF as well as strategies to optimize BAF operation. Project elements include replacement of intake screens, pump station upgrades, new rapid mix, sludge blanket clarifiers, and filters designed to accommodate biological filtration, finished water storage, new pre-chemical and bulk storage facilities, and modifications to residuals lagoon. An ozone system assessment was conducted to define improvements to optimize performance and reliability of the ozone system. The project was being delivered by the Construction Manager at Risk method.

Williams WTP Basin Improvements, City of Durham, NC

Project Manager. The Williams WTP was facing challenges related to conditions and process performance, limiting capacity for the nearly 100-year-old facility. Conducted a process evaluation to assess performance of the rapid mix, floc, sedi, and filtration. Filter surveillance and operator training was conducted to optimize filter operations. Bench-scale testing was conducted to optimize operations, and full-scale testing is planned to assess the reliable capacity of the facility. An evaluation of sludge collection technologies was performed. WTP capacity had been limited due to operations of residuals handling facilities and the 10% limitation of the backwash recycling. An evaluation of the residuals management facilities provided opportunities to optimize operations and alleviate impacts on WTP production. Condition assessment and development of structural repairs were performed for the process basins and clearwell. Other project elements included an energy efficiency study, and a disinfection (CT) tracer study.



Solomon Salido, EI

Assistant Engineer I

Mr. Salido specializes in hydraulic analyses and design of water treatment and pumping facilities.

Education

BS, Chemical and Biomolecular Engineering, Vanderbilt University, 2025

Certification/License

Engineer Intern: NC

Areas of Expertise

- Pump station design
- Hydraulic modeling

Experience

- 1 total year
- 1 year with Hazen

GUC WTP Backwash Pump Replacement

Greenville Utilities Commission, Greenville, NC

Assistant Engineer. Hazen performed a comprehensive evaluation of the existing filter backwash pumping system at the Greenville Utilities Commission (GUC) Water Treatment Plant to assess its ability to reliably meet current and future needs. The evaluation included a detailed review of existing pump performance, hydraulic conditions, and system constraints relative to required backwash flow rates and filter media expansion targets. The study identified hydraulic limitations associated with existing pumps, piping, and control valves, and evaluated the impact of varying clearwell levels, and operational scenarios on backwash effectiveness. Hazen developed and compared improvement alternatives, including pump replacement and piping modification.

Sanford Water Filtration Facility Expansion, TriRiver Water, NC

Technician. Provided support to design engineers on this project. The project involves expansion of an existing 12-mgd facility to 18-mgd including new raw water intake, pump station, and transmission; improvements to existing process basins and filters; new rapid mix, flocculation, sedimentation basins and dual media filters; new cast-in-place concrete clearwell; new post-filter GAC adsorption facility for PFAS mitigation; improvements to existing and new finished water pump station; new chemical storage and feed facility for all plant chemicals; new gravity thickener, dewatering building with belt filter presses, new lamella plate settler and recycle pump station for the equalized backwash waste. Reviewed and addressed contractor change requests through detailed hydraulic analysis as an Assistant Engineer.

Teer Quarry Pump Station, City of Durham, NC

Assistant Engineer. Assisted with the design of a deep well pump station located at Teer Quarry in Durham, NC. Developed a hydraulic model to evaluate a broad range of pumping scenarios. Selected pumps and control valves and developed their corresponding preliminary equipment specifications.



Kenneth Horner, PE

Senior Associate

As Hazen's Corporate Lead for Data Centers and Tech, Mr. Horner provides leadership on all related projects and topics and works across geographies and disciplines to benefit the relationship between the water and tech industries.

Education

BS, Engineering, University of Central Florida

Certification/License

Professional Engineer: SC

Areas of Expertise

- Comprehensive water solutions for industrial/private sector clients with a focus in tech/data center markets
- Program management for large-scale Utility Management Programs such as DC Water, City of Baltimore, NYC DEP, etc.
- Contracting and delivery methods across the water consulting, design, and construction profession including industrial and municipal clients

Experience

- 15 total years
- 3 years with Hazen

Industrial & Private Market Regional Lead. Provided strategic direction to leadership and project teams throughout the eastern US; Developed and maintained client relationships and supported pursuits, contracting, and delivery of projects across various industries

Global Lead – Water in Tech. Advised corporate and regional leadership to develop and execute strategies and establish a position as a trusted water engineering consultant for industry-leading tech firms around the world.

Americas Account Lead – Amazon Account. Provided leadership and coordination to maintain and grow one of AECOM's largest, most diverse, and most strategic accounts on projects throughout the Americas as well as leading strategic global initiatives.

Greenville Water Department Lead. Responsible for profitability of the department; project delivery, and client relationships for multiple municipal clients in the region; this experience provides familiarity with utility operations that can be leveraged in "industrial adjacent" consulting to existing municipal clients at Hazen.



James Hennessy, PE

Senior Associate

Mr. Hennessy is an expert in conveyance design and integrated master planning including project prioritization, phasing and capital planning.

Education

BSCE, North Carolina State University, 2013

Certification/License

Professional Engineer: NC
Associate DBIA

Areas of Expertise

- Field testing and analysis of water distribution systems
- Water distribution system modeling
- Wastewater collection system design and evaluation
- Water distribution system design and evaluation
- Water and wastewater pipeline rehabilitation
- Water, wastewater and population projections
- Integrated master planning

Experience

- 12 total years
- 12 years with Hazen

Northwest Area Master Plan, Town of Holly Springs, NC

Project Engineer. Hazen evaluated anticipated water and sewer demands in the Northwest Area and provided recommendations on infrastructure sizing and routing to accommodate development through 2030. Recommended improvements to the distribution system include 11,000 LF of 24", 7,500 LF of 16", 7,600 LF of 30", and a 1 MG elevated storage tank to properly serve long-term needs. Recommended wastewater improvements include a new pump station at the Friendship Development site and 16" forcemain from the Friendship Pump Station to the Utley Creek WRF.

NC Children's Hospital Hydraulic Modeling, Apex, NC

Project Manager. Led hydraulic modeling and system planning for a proposed 500-bed hospital campus and adjacent 1,100+ acre mixed-use development in a rapidly growing service area. Updated and applied the Town of Apex water distribution model to evaluate existing conditions, project future demands, and assess system performance. Identified transmission upgrades, storage needs, and key system connections to meet pressure, fire flow, and reliability requirements. Delivered actionable recommendations to support phased development, ensuring resiliency, redundancy, and reliable service under outage scenarios for this critical-use facility.

Finished Water Transmission System

Western Intake Partners (WIP), NC

Program Liaison/Project Engineer. Hazen is designing 87,000 lf of 42" Finished Water Transmission Main, a metered connection to the Chatham County distribution system, two 1-MG Elevated Storage Tanks, and a 27 MGD booster pump station. WIP includes four Jordan Lake Water Supply allocation holders – the City of Durham, OWASA, Chatham County, and the Town of Pittsboro. The PER included transmission main route analysis and siting of the storage tanks and pump station. The design includes survey and SUE of the corridor, geotechnical, hydraulic modeling, permitting, easement acquisition for 100 easements, and bidding. Additionally, the Envision sustainability framework is being applied to all components of the project.



Keven Duerr

Associate

Ms. Duerr is an environmental scientist with experience in botany, natural systems and resources, and permitting.

Education

BS, Biology, University of North Carolina at Chapel Hill, 2000

Areas of Expertise

- Environmental assessments and environmental impact statements (SEPA and NEPA)
- Wetland delineations (Tidal and Non-Tidal)
- Wetland and stream permitting
- Wetland mitigation site searches
- Mitigation design and specifications
- Natural resource investigations
- Threatened and endangered species surveys
- Preparation of environmental documents
- Invasive species management

Experience

- 24 total years
- 15 years with Hazen

Big Branch 2 Pump Station and Force Main, Town of Apex, NC

Environmental Evaluation and Permitting. Led delineation of waters of the US and protected riparian buffers under local ordinances, habitat assessments for threatened and endangered species, surveys for red-cockaded woodpecker, and desktop review of historic properties for approximately 4.9 miles of new force main and a 4-mgd pump station with access road. Developed mitigation plan to compensate for permanent modification of forested buffer that was required as mitigation under a previous project's EIS. Prepared application for Standard Permit under Section 404 of Clean Water Act and Individual Water Quality Certification under Section 401 of Clean Water Act. Coordinated with regulatory agencies through permit review process to obtain authorizations for proposed construction of infrastructure.

Harleyville Reach Water Transmission Main, Lake Marion Regional Water Agency, Harleyville, SC

Environmental Evaluation. Conducted wetland delineations and stream assessments for approximately 6.6 miles of new waterline extending from Harleyville to Holly Hill, SC and met with the U.S. Army Corps of Engineers to review the delineations and assessments.

Snow Hill Road Force Main, Durham, NC

Environmental Evaluation and Permitting. Performed delineation of waters of the US and protected riparian buffers under NC rules and Durham City/County ordinance, habitat assessments for threatened and endangered species, surveys for smooth coneflower, and desktop review of historic properties for approximately 14,543 feet of force main and gravity sewer. Coordinated with USACE and NCDWR regarding sensitive resources for permitting. Prepared and submitted the application for authorization under the Clean Water Act and Neuse River Buffer Rules.



Bryan C. Fagundus, PE
Principal



Bryan C. Fagundus, PE is Principal of Ark Consulting Group in Greenville, NC. Growing up in Winterville, Mr. Fagundus possesses vast local knowledge and construction experience that is exemplified by practical constructability in design, relevant construction cost estimation, and construction phasing and prioritization. Bryan has over twenty-six years of civil engineering experience designing and managing a variety of projects including: master planning and site planning for sectors including industrial, institutional, healthcare, urban redevelopment, retail, hospitality

and residential; preparation of storm drainage and storm water quality plans addressing culvert and pipe system modeling, storm water quality facility design, water distribution system modeling and design, wastewater collection systems, construction cost estimating, project prioritization and constructability review. Bryan's hands-on administrative background ensures designs are cost effective, constructible, and strategically phased to minimize disruption and maximize long term value.

EDUCATION:

East Carolina University, 1995-1997
B.S. Civil Engineering, NC State University, 2001

REGISTRATIONS:

Professional Engineer, NC, Lic. #: 31970
Professional Engineer, VA, Lic. #: 056455
Professional Engineer, SC, Lic. #: 39070
Professional Engineer, KY, Lic. #: 36654

Licensed General Contractor, NC, Lic. #: 76437

ASSOCIATIONS:

National Society of Professional Engineers
Professional Engineers of North Carolina
American Society of Civil Engineers
Town of Winterville Stormwater Advisory Board, Chair

EMPLOYMENT:

13 years with Ark Consulting Group, PLLC
13 years with other firms

PROJECT 1 | Pitt County-North Megasite Rezoning Support

Client: Weyerhaeuser Company | **Location:** Northern Pitt County, NC | **Scale:** 8,300+ acres total; 3,300 acres rezoned industrial | **Year:** 2024–2025

Ark Consulting Group served as the primary technical surveying and engineering consultant for Weyerhaeuser in connection with the 3,300-acre industrial rezoning comprising the Pitt County-North Megasite. Over an 18-month engagement, Ark prepared boundary survey and mapping documentation in support of the rezoning application, with Scott T. Anderson, PE leading the firm's participation in public informational meetings and hearings before the Pitt County Board of Commissioners and relevant planning bodies. The effort culminated in the successful July 2025 rezoning of 3,300 acres to industrial classification, a critical milestone enabling Pitt County to secure its option on the property and access EDPNC Megasite Program grant funding. Ark's existing familiarity with the parcel boundaries, site configuration, access constraints, and adjacent infrastructure makes this prior engagement a direct and immediate precursor to the due diligence scope now being procured.

PROJECT 2 | Otterwood Development — Due Diligence & Schematic Planning

Client: Kern Company (Paul B. Kern, III) | **Location:** City of Havelock ETJ, Craven County, NC | **Scale:** 190+/- acre Multi-parcel assemblage; mixed commercial & residential | **Year:** 2023–Ongoing

Ark Consulting Group was retained by Kern Company to perform comprehensive due diligence investigations and schematic master planning for a multi-parcel assemblage (Craven County Parcels 6-213-178, 6-213-189, 6-213-209, 6-213-009, and 6-213-4) located within the City of Havelock's Extraterritorial Jurisdiction. The scope closely mirrors the due diligence methodology required for the Pitt County-North Megasite engagement. Ark prepared a base map from recorded deeds and GIS data; coordinated directly with the City of Havelock Planning Department on zoning, dimensional standards, and entitlement strategy; evaluated existing and available water, sanitary sewer, and electric utility infrastructure with the City of Havelock Public Utilities Department and Craven County Water Department; assessed stormwater management requirements under City, County, and NCDEQ regulations (including the Neuse River Basin rules timeline); and performed desktop screening and field delineations for potential wetlands and jurisdictional streams. Ark developed schematic street and lot layout plans accommodating a mix of neighborhood commercial, office, single-family detached, duplex, townhome, and garden-style multi-family residential uses in conformance with the City of Havelock Zoning Ordinance and NCDOT street and driveway access policy. Upon owner approval of the preferred schematic plan, Ark represented Kern Company in presentations to the City of Havelock planning staff and to NCDOT to obtain feedback on driveway access.

PROJECT 3 | West New Bern — Multi-Phase Due Diligence, Master Planning & Development Services

Client: Weyerhaeuser Company / D.R. Horton | **Location:** West New Bern, Craven County, NC | **Scale:** 100–500 acres; multi-phase mixed residential & commercial | **Year:** Ongoing

Ark Consulting Group has served as a multi-phase civil engineering and planning consultant for large-scale residential and commercial development in the West New Bern area of Craven County, working with both Weyerhaeuser as the original timberland owner and D.R. Horton, one of the nation's largest residential builders, as development transitioned from raw land to active buildout. This long-term engagement has encompassed the full arc of project delivery from initial site investigation through development planning and construction support. Services provided have included: site due diligence investigations, including evaluation of zoning and entitlement conditions, utility feasibility, stormwater regulatory requirements, and development constraints; conceptual and schematic master planning for phased mixed-use development accommodating residential land uses (single-family detached, attached, and multi-family) alongside neighborhood commercial and office uses; stormwater management system evaluation and planning, including analysis of detention and water quality requirements under Craven County and NCDEQ regulations and coordination with the Neuse River Basin stormwater rules; earthwork evaluation, including cut/fill analysis, mass grading feasibility, and phasing strategy to optimize site preparation costs; coordination with the City of New Bern, Craven County, and NCDOT on access, utilities, and development approvals; and civil design support for residential subdivision and commercial site improvements. This engagement demonstrates Ark's capacity to manage complex, multi-client, multi-phase development projects from raw land due diligence through constructed improvements directly analogous to the trajectory anticipated for the Pitt County-North Megasite.

