

STATEMENT OF QUALIFICATIONS

Henderson County

Etowah Sewer AIA

April 25, 2025

April 25, 2025

Marcus A. Jones, County Engineer
Henderson County
1 Historic Courthouse Square
Hendersonville, NC 28792



SUBJECT: RFQ FOR ETOWAH SEWER ASSET INVENTORY AND ASSESSMENT (AIA)

Dear Mr. Jones and Members of the Selection Committee:

Henderson County is strategically positioning itself for the future by evaluating its existing sewer system to gain a clearer understanding of current conditions and to identify necessary rehabilitation, replacement, or repair needs. WithersRavenel has assisted many municipalities throughout the state with water and wastewater system planning, hydraulic modeling, GIS, asset management, and a variety of engineering, planning, funding, and financial services required for this endeavor.

Our team helps communities identify both short- and long-term challenges and enables them to implement meaningful solutions based on qualitative data. We are well-equipped to evaluate your wastewater system seamlessly, guiding the process from project kickoff to completion and bringing specific expertise in AIA-funded initiatives.

By choosing our team, the County will receive the following benefits:

Our familiarity with and proximity to Henderson County. We have teamed with you previously on a successful sewer AIA grant application that will fund this proposed Sewer AIA. Additionally, WithersRavenel has worked on several projects with the County, including capital lifecycle modeling, GIS services, and our firm is providing engineering services for the Berkeley Mills park sports complex expansion. We have also worked with many municipalities in the County, including Hendersonville, Laurel Park, and Saluda. Our experience in your community and the region makes WithersRavenel the best choice to deliver tailored solutions for the results you need.

A deep bench of experienced engineers, GIS, funding and asset management professionals. With more than 460 employee-owners across the state, including a local office in Asheville and headquarters in Cary, WithersRavenel has ample staff to dedicate to your project needs. We are unique in that we have a dedicated team of funding specialists who focus on assisting clients with low-cost/no-cost funding identification, application services, administration services, oversight, and management to ensure your project complies with specific funding agency requirements. Our Utilities, GIS, and Funding & Asset Management teams have the availability and technical expertise to tackle your AIA project immediately. Additionally, our project experience with master planning, asset management, and hydraulic modeling projects is industry leading. We are committed to completing the work for your sewer AIA project in-house.

Previous AIA success experience. WithersRavenel has supported numerous municipalities with AIA grant-funded condition assessments, as well as modeling and engineering services. This includes work in the communities of Marion, Old Fort, Gastonia, and Elkin. We have completed more AIA projects than any other North Carolina-based firm. By collaborating with our funding and finance team, we leverage our experience in AIA-funded project administration to ensure that the County remains compliant, funding is maximized for community needs, and projects are completed by the grant agency's deadline.

We look forward to the opportunity to help Henderson County assess critical wastewater infrastructure and prioritize improvements. If you have any questions or would like to discuss our enclosed qualifications in more detail, please contact us. Our contact information is listed below.

Sincerely,
WITHERSRAVENEL, INC.

A handwritten signature in black ink, appearing to read 'D Kalyanam'.

Deepthi Kalyanam, PE
Project Manager
skalyanam@withersravenel.com
919-678-3805

A handwritten signature in black ink, appearing to read 'Will Cauthen'.

Will Cauthen
Client Officer
wcauthen@withersravenel.com
704-860-4885



OUR PEOPLE YOUR SUCCESS.

BRIEF HISTORY OF FIRM

WithersRavenel, headquartered in Cary, is an Employee Stock Ownership Plan (ESOP) company. Our more than 460 employee-owners excel at providing consulting services for our clients. Founded in October 1983 as Withers & Ravenel, Inc., WithersRavenel is equipped with more than 41 years of serving an array of clients and projects through innovative and cost-effective engineering solutions across North Carolina. **Our firm is stable and successful and has been repeatedly recognized with awards for our growth and financial success.**

AIA EXPERTISE

28

SEWER AIA PROJECTS
IN-PROGRESS OR
COMPLETED IN NORTH
CAROLINA SINCE 2016

North Carolina provides grant funding for water and sewer utilities to encourage the proactive management and financing of their systems. Even without this incentive, there are substantial benefits to investing in asset management planning: repairing or replacing infrastructure is far less costly

before it fails than after. WithersRavenel helps utility providers break down the daunting challenge of understanding their systems into manageable tasks with clear goals and objectives.

By identifying the system assets and evaluating their condition, we are then able to make important data-driven asset management decisions. The work done through AIA projects establishes the remaining service life of assets, prioritizes short-term and long-term capital needs, identifies operations and maintenance strategies, and develops funding strategies so that organizational leaders have all the information they need to adequately manage their assets.

From data collection to GIS database creation and integration, and from capital improvement planning to funding application preparation and beyond, our professionals use repeatable processes to gather accurate data and make actionable recommendations.

This project will be performed primarily from our Asheville office.

In addition to our Cary headquarters, WithersRavenel maintains nine branch locations across North Carolina.

- » Asheville
- » Cary (Downtown)
- » Charlotte
- » Greensboro
- » Pittsboro
- » Powells Point
- » Raleigh
- » Southern Pines
- » Wilmington

PROJECT CONTACT

Deepthi Kalyanam, PE

Project Manager

919-678-3805

skalyanam@withersravenel.com

LOCAL OFFICE

84 Coxe Avenue, Suite 260

Asheville, NC 28801

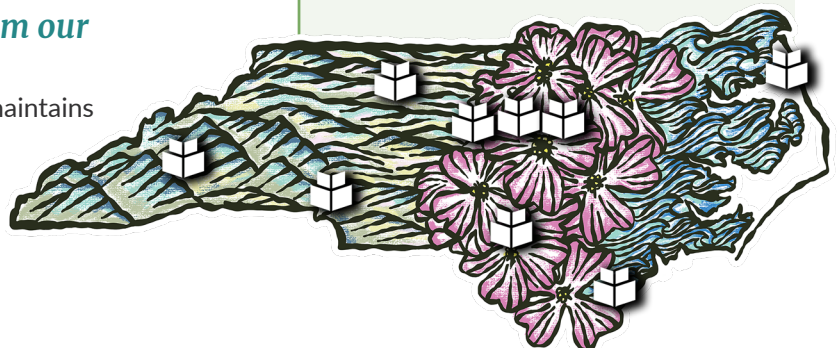
HEADQUARTERS

115 Mackenan Drive

Cary, NC 27511

SERVICES PROVIDED

- » Asset Management
- » Construction Services
- » Design & Planning
- » Economic Development
- » Environmental
- » Funding & Finance
- » Geographic Information Systems
- » Land & Site Development
- » Public Engagement
- » Remote Sensing
- » Stormwater
- » Surveying & Geomatics
- » Water & Sewer Utilities





WATER, SEWER ENGINEERING

The demands of growth and urbanization require progressive water and wastewater resource planning and innovative management practices.

WithersRavenel has diversified experience in planning, engineering analysis, design, construction plans, and specifications related to both water and wastewater projects. WithersRavenel helps communities understand and manage their water resources so that they can support the development of homes, schools, hospitals, and businesses in an environmentally responsible way.

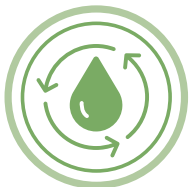
Our staff combines traditional field experience with state-of-the-art technology to provide needs analysis, master planning, computer modeling, wastewater collection and treatment design, water treatment and distribution design, water and wastewater rehabilitation, and specifications.

Funding the repair and replacement of aging infrastructure and the construction of new facilities can be difficult. Costs cannot simply be passed on to the consumer, and a utility must operate within its financial constraints. By working with clients to develop a fiscal roadmap made up of federal and state grants and loans, we help make utility improvements affordable for more people in more places.

SERVICES INCLUDE:

- » Asset Inventories and Assessments
- » Asset Management
- » Conveyance System Rehabilitation
- » Elevated & Ground Storage Design
- » Extended Period Hydraulic Modeling
- » Fire Flow Evaluation
- » Grant and Loan-Funded Projects
- » Preliminary Engineering Reports
- » Pump Station Design
- » Sewer Main Design
- » Water & Sewage Treatment Systems
- » Water & Sewer Utility Management
- » Water Main Design

Utilities Experience: By the Numbers



178

Wastewater Projects



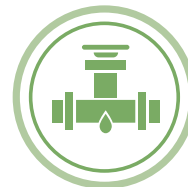
105

Water Main Projects



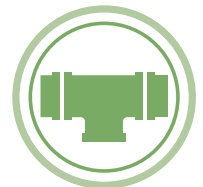
76

Utility Mapping Projects



166,000 LF

Forcemain



390,000 LF

Gravity Sewer Line





Team Experience



DEEPTHI KALYANAM, PE

Project Manager

Deepthi brings 15 years of experience in planning and managing utilities projects, with a strong focus on wastewater treatment, pump stations, flow monitoring analysis, and sanitary sewer infrastructure. At WithersRavenel, she is focused on a range of water and sewer asset management projects, particularly AIA grant-funded initiatives. Her grasp of regulatory requirements has led to successfully assisting municipal clients with state and federal grant and loan applications and subsequent engineering services for various projects.

EDUCATION

- » MS, Water Resources and Environmental Engineering, Villanova University
- » BS, Civil Engineering, Osmania University

LICENSURE

- » Professional Engineer: NC, 049650

PROJECT EXPERIENCE

- » Water and Sewer AIA Engineering, Tryon, NC. Project Manager
- » VUR Sewer AIA Engineering, East Spencer, NC. Project Engineer
- » Sewer AIA, Archdale, NC. Project Engineer
- » Sewer AIA Engineering, Belhaven, NC. Project Manager
- » Sewer AIA Engineering, Rocky Mount, NC. Project Manager
- » Water AIA Engineering, Martin County, NC. Project Manager
- » Sewer AIA Engineering, Jefferson, NC. Project Manager
- » Sewer AIA Engineering, Fuquay-Varina, NC. Project Manager
- » Water AIA Engineering, Pilot Mountain, NC. Project Manager



BRANDON INSCORE

Project Principal

Brandon is the Funding and Asset Management Practice Area Lead for WithersRavenel. He is responsible for overseeing the areas of Financial Services, Funding, GIS, Pavement, and Asset Management. His passion lies in helping clients plan for the future. In addition to providing consultation for local government clients across North Carolina and beyond, Brandon's experience includes 15 years of public sector experience working for the City of Greensboro before coming to WithersRavenel. As Project Principal, Brandon will act as a liaison between the client and the project team. He will have periodic check-ins with the client to verify that all project milestones are met, address any concerns or questions the client may have, and ensure the team is continually maintaining the highest standards of service and quality. He will also assist in contract preparation and negotiations.

EDUCATION

- » MBA, Liberty University
- » MA, Applied Geography, UNC Greensboro
- » BA, Social Science Education, Elon University

CERTIFICATIONS

- » International Association of Asset Management

PROJECT EXPERIENCE

- » VUR Sewer AIA Engineering, East Spencer, NC. Project Manager
- » Sewer AIA Engineering, Belmont, NC. Project Manager
- » Sewer AIA Engineering, Bessemer City, NC. GIS Manager
- » Sewer AIA, Archdale, NC. QA/QC Manager
- » Sewer AIA Engineering, Rocky Mount, NC. Practice Area Lead
- » Sewer AIA Engineering, Selma, NC. Project Manager
- » Sewer AIA Engineering, Liberty, NC. Project Manager



Team Experience



MALAK BAHRAMI

QA/QC Manager

Malak is WithersRavenel's Director of Asset Management. A longtime professional engineer and program manager, he has a bounty of experience in asset management, including asset inventory, condition assessment, process development, and capital improvement planning. His background also includes experience in infrastructure engineering and construction services. In his role as the Asset Management Program Manager at Fairfax County (VA) Park Authority, he spearheaded the analysis of the existing asset management program and developed innovative new process recommendations and a 5-year plan which included budgeting, resourcing, and scheduling for a portfolio with a net value of over \$1 billion.

EDUCATION

- » BS, Civil Engineer, Structures, Foundations, Construction, Virginia Tech

LICENSURE

- » NASSCO Certified
- » Certified Professional Property Specialist

PROJECT EXPERIENCE

- » Sewer AIA Engineering, Old Fort, NC. Director of Asset Management
- » Sewer AIA Engineering, Tryon, NC. QA/QC Manager
- » Sewer AIA, Belhaven, NC. QA/QC Manager
- » Sewer AIA Engineering, Holly Springs, NC. Project Manager
- » Sewer AIA Engineering, Dunn, NC. QA/QC Manager
- » Sewer AIA Engineering Services, Fuquay-Varina, NC. QA/QC Manager
- » Water AIA Engineering, Martin County, NC. QA/QC Manager
- » Sewer AIA Engineering, Four Oaks, NC. QA/QC Manager
- » Sewer AIA, Belmont, NC. QA/QC Manager



MEGAN POWELL

Funding Lead

Megan has a strong background working for local governments in North Carolina. She has worked on grant administration for ARRA Funds, sustainability projects that involved outreach to the community. As a budget manager and internal auditor, she managed a team responsible for Henderson County's annual \$166 million general fund. Her work involved developing best practices, policies and procedures, complying with Local Government Budget and Fiscal Control Act, and ensuring compliance with all local, state, and federal laws.

EDUCATION

- » MPA, Public Management, Appalachian State University
- » BS, Political Science, Appalachian State University

PROJECT EXPERIENCE

- » Sewer AIA Application, Henderson County, NC. Project Manager
- » Sewer AIA Engineering and Sewer MRF Study, Old Fort, NC. Project Manager
- » Water and Sewer Financial Analysis, Bald Head Island, NC. Project Manager
- » Sewer AIA Application, Bald Head Island, NC. Funding Team Lead
- » Sewer AIA Application, Dobson, NC. Project Manager
- » Helene Response (4827-DR), Woodfin, NC. Disaster Recovery Consultant
- » Helene Response, Spruce Pine, NC. Disaster Recovery Consultant



Team Experience



AMANDA WHITAKER

Director of Funding

Amanda is WithersRavenel's Director of Funding. Her experience is concentrated in grant writing, grant administration, and community and economic development projects. She has successfully written and administered grants for projects all over North Carolina for economic development, neighborhood stabilization, housing rehabilitation, parks and recreation, water and sewer infrastructure, and downtown revitalization.

EDUCATION

- » MPA, UNC Greensboro
- » BA, Political Science, North Carolina State University

CERTIFICATIONS

- » Community Development Academy, UNC School of Government

PROJECT EXPERIENCE

- » Sewer AIA Engineering, Old Fort, NC. Director of Funding
- » Sewer AIA Application, Belmont, NC. Project Manager
- » Sewer AIA Application, Jefferson, NC. Project Manager
- » Sewer AIA Engineering, Rocky Mount, NC. Director of Funding
- » Sewer AIA Engineering, Selma, NC. Director of Funding
- » Sewer AIA Engineering, Southern Pines, NC. Director of Funding
- » Sewer AIA Application, Goldsboro, NC. Project Manager
- » Sewer AIA Application, Jefferson, NC. Project Manager
- » Sewer AIA Application, Harmony, NC. Project Manager



SHANNON MOORE

Finance Lead

Shannon is WithersRavenel's Director of Finance. She brings 24 years of experience as a financial professional, working in the private and public sectors. Previously, she served as the Finance Director for the City of Salisbury. Her responsibilities included leading the City's accounting, purchasing, budgeting, and customer service departments. At WithersRavenel, she leads projects that provide comprehensive financial analysis for municipal utility funds, which include diving into client financial data such as program revenues, expenditures, debt, and other factors. She also works on funded projects to provide financial guidance related to CIPs and asset management.

EDUCATION

- » MBA, Western Carolina University
- » BS, Corporate Finance, Western Carolina University

CERTIFICATIONS

- » Innovation Academy; Municipal Administration, UNC School of Business

PROJECT EXPERIENCE

- » Sewer AIA Engineering, Liberty, NC. Financial Services
- » Sewer AIA Engineering, Clarkton, NC. Director of Finance
- » Sewer AIA Engineering, Broadway, NC. Director of Finance
- » Sewer AIA Engineering, Siler City, NC. Director of Finance
- » Water AIA Engineering, Martin County, NC. Director of Finance
- » Sewer AIA Engineering, Dunn, NC. Director of Finance
- » Sewer AIA Engineering, Selma, NC. Financial Services
- » Sewer Merger Regionalization and Feasibility Study, Hertford, NC. Project Manager



Team Experience



EDUCATION

- » BS, Agriculture
Environmental
Technology, North
Carolina State
University

LICENSURE

- » Professional Land
Surveyor: NC, L-5034

MARSHALL WIGHT, PLS

Survey Project Manager

Marshall is a surveyor and survey director with a background in conventional and GPS field procedures, research, and data processing. He performs boundary topographic surveys; bathymetric surveys; boundary resolution; as-built; monitoring; planimetric and topographic mapping, recombination, right-of-way dedication, and easement mapping. Marshall specializes in remote sensing technologies, including high definition 3D laser scanning, unmanned aerial systems (UAS) legality, flight planning, 3D modeling, orthophoto/surface model generation. He is also competent with stream designs, pebble counts, and pavement/sub-pavement analyses. He has expertise in mapping, designing, and analyzing stream projects from a variety of geographical areas. He also has experience in soil and concrete testing.

PROJECT EXPERIENCE

- » Sewer Replacement, Cary, NC. Survey Project Manager
- » Church and King Street Water, Hendersonville, NC. Survey Project Manager
- » CDBG-I Interceptor, Burnsville, NC. Survey Project Manager
- » DWI Stream Restoration, Biltmore Forest, NC. Project Manager
- » Lake Howell Intake Study, Cabarrus County, NC. Survey Project Manager
- » Sewer Extension Creek Crossing Elimination, Maggie Valley, NC. Survey Project Manager



EDUCATION

- » BS, Geography and
Planning, Appalachian
State University

TYLER CHRISTIAN

GIS Project Manager

Tyler is a GIS Project Manager with more than 13 years of consulting experience. He has worked on a range of projects for municipal and private clients, providing data collection and database services for water, wastewater, stormwater, environmental, transportation, ADA and other initiatives. He is proficient in ArcGIS Desktop, ArcGIS Pro, GPS, and Arc Collector field collection apps, Python and Esri Model Builder, and other desktop and web-based products.

PROJECT EXPERIENCE

- » Sewer AIA Engineering, Belhaven, NC. GIS Manager
- » Sewer AIA Engineering, Rocky Mount, NC. GIS Manager
- » Water AIA Engineering, Martin County, NC. GIS Manager
- » Sewer AIA Engineering, Dunn, NC. GIS Manager
- » Sewer AIA Engineering, Broadway, NC. GIS Manager
- » Sewer AIA Engineering, Tryon, NC. GIS Manager



Team Experience



EDUCATION

- » BA, Geography, Syracuse University

KRISTY POSSEIN

GIS Specialist

Kristy has more than 20 years of GIS experience, including geodatabase administration, digitizing, creation of GIS coverages from plat data, legal descriptions, as-builts, aerial photography and other related data sources, and conversion of data from paper source documents, existing CAD files, and modern field data collection methods to a personal geodatabase or SDE environment. She is well-versed with providing high quality analytical and capital projects planning maps, and has constructed and published web maps and editable features to ArcGIS Online that helps field staff to perform data collection both on and offline via Collector, Field Maps, Survey123, and Quick Capture mobile apps. Prior to WithersRavenel, she was also involved in training and supporting other staff members on use of Trimble GPS units, ArcGIS Desktop/ArcPro for basic GIS tasks, and technical software support for ESRI installations.

PROJECT EXPERIENCE

- » Sewer AIA, Belmont, NC. GIS Specialist
- » Sewer AIA, Belhaven, NC. GIS Specialist
- » Sewer AIA, East Spencer, NC. GIS Specialist
- » Sewer AIA, Rocky Mount, NC. GIS Specialist



EDUCATION

- » ME, Environmental Engineering, North Carolina State University
- » BS, Chemistry, West Virginia University

LICENSURE

- » Professional Engineer: NC, 056179

CERTIFICATION

- » Institute of Asset Management Certificate in Asset Management: 6132100

CASEY DOLAN, PE

Project Engineer

Casey is a project manager and professional engineer with a background in chemical, biological, and physical principles of environmental engineering; biological and chemical wastewater treatment; and water and wastewater resources engineering. She has significant experience with grant-funded asset management and AIA projects. She also facilitates and performs tasks such as Davis Bacon and American Iron and Steel requirements, review and approval of pay applications, and review and verification of funding reimbursements. She manages and performs tasks for asset management projects relating to water and sewer treatment and conveyance while developing new and innovative ways to help clients expand upon their asset management practices.

PROJECT EXPERIENCE

- » Sewer AIA, Bessemer City, NC. Project Engineer
- » Sewer AIA, Belmont, NC. Project Engineer
- » Sewer AIA, Pilot Mountain, NC. Staff Professional
- » Sewer AIA Engineering, Liberty, NC. Staff Professional
- » Water AIA Engineering, Pilot Mountain, NC. Staff Professional
- » Sewer AIA, Archdale, NC. Project Engineer
- » Sewer AIA Engineering, Selma, NC. Project Engineer
- » Sewer AIA, Goldsboro, NC. Project Engineer
- » Reedy Fork Sewer Project, Greensboro, NC. Staff Professional
- » CDBG-I Sewer Improvements, Kenly, NC. Staff Professional



Team Experience



NICOLE ORGANISCAK, EI

Staff Professional

Nicole is a utilities engineering professional who specializes in asset management and AIA projects. She has extensive knowledge of water distribution and wastewater collection system infrastructure. She performs a variety of tasks for AIA and asset management projects relating to water and sewer treatment and conveyance.

EDUCATION

- » BS, Environmental Engineering, University of Cincinnati

LICENSURE

- » Engineer Intern

PROJECT EXPERIENCE

- » Sewer AIA Engineering, Hertford, NC. Staff Professional
- » Sewer AIA Engineering, Rocky Mount, NC. Staff Professional
- » Sewer AIA Engineering, Fuquay-Varina, NC. Staff Professional
- » Water AIA Engineering, Martin County, NC. Staff Professional
- » Sewer AIA Engineering, Broadway, NC. Staff Professional
- » Sewer AIA Engineering, Clarkton, NC. Staff Professional
- » Sewer AIA Engineering, Dunn, NC. Staff Professional
- » Sewer AIA Engineering, Siler City, NC. Staff Professional



NINA CARAWAY, PE

Director of Hydraulic Modeling

Nina has diverse experience in water resources engineering, with a focus on data analysis and systems modeling. Her experience spans from as large of a scale as climate modeling, basin water management, or statewide planning, to the small but critical details of distribution and collection systems. She helps clients leverage their data to produce predictive and reproducible system analysis with an overall goal of realistic asset management solutions.

EDUCATION

- » MS, Civil Engineering, University of Colorado at Boulder
- » BE, Civil Engineering, Vanderbilt University

LICENSURE

- » Professional Engineer: NC, 045486

PROJECT EXPERIENCE

- » Sewer Hydraulic Model, Kannapolis, NC. Project Manager
- » Sewer System AIA, Archdale, NC. Modeling Engineer
- » Sewer AIA, Lillington, NC. Modeling Engineer
- » Sewer AIA Engineering, Dunn, NC. Modeling Engineer
- » Water System Hydraulic Modeling Support, Dunn, NC. Project Manager
- » Water AIA, Bessemer City, NC. Modeling Engineer
- » Water AIA, Pilot Mountain, NC. Modeling Engineer
- » Water Model Upgrade, Gastonia, NC. Modeling Engineer
- » Sewer AIA, Goldsboro, NC. Senior Modeling Engineer



Team Experience



ALI NAKHLI, PhD, PE
Project Engineer

Ali leads sustainable utility system design and water resources management projects. His background in laboratory- and field-scale experiments and projects, combined with skills in hydraulic modeling for water and sewer systems, means he brings a precise, data-driven, and iterative approach to solving utility system challenges. He is not only adept at data analysis but also capable of interpreting results in a way that is accessible to audiences with varying degrees of technical knowledge.

EDUCATION

- » PhD, Civil and Environmental Engineering, University of Delaware
- » MS, BS, Chemical Engineering, Sharif University of Technology

LICENSURE

- » Professional Engineer: NC, 058056

PROJECT EXPERIENCE

- » Sewer AIA, Dunn, NC. Modeling Engineer
- » Sewer AIA, Archdale, NC. Modeling Engineer
- » Sewer AIA, Goldsboro, NC. Modeling Engineer
- » Sewer AIA, Fuquay-Varina, NC. Modeling Engineer
- » Sewer AIA Engineering, Broadway, NC. Project Engineer
- » Sewer Hydraulic Model, Kannapolis, NC. Modeling Engineer
- » Sewer AIA Engineering Rocky Mount, NC. Project Engineer
- » Sewer AIA Engineering, Southern Pines, NC. Project Engineer
- » Water Model Upgrade, Gastonia, NC. Staff Professional

RESOURCE CAPABILITY

WithersRavenel sees our team as an extension of your staff. Each of the staff members proposed for this contract will be responsive to your project needs and are committed to fulfilling their duties until the projects are completed, especially those with tight deadlines. WithersRavenel's culture is based on establishing long-lasting relationships with our clients to serve the communities where we work and live. Accordingly, for every project we pursue, we conduct a thorough evaluation of our capability and capacity to perform the work. **We ensure that we have enough redundancy in depth and breadth of resources that allow us to commit staff to the contract, with equally qualified backup among our 460 employees at offices across the state, to respond to any request on short notice.**

Our team prepares a schedule for each project and regularly updates the schedule throughout the life of the project. All WithersRavenel project team members have input in creating the schedule, and they assist in defining dependencies, constraints, and duration of tasks. Throughout the project, the project manager works with team members, noting the actual start and end dates of the various tasks. The project manager will keep all team members aware of task start dates and completion dates. If team members see a problem in meeting the schedule of a certain task, they advise the project manager and discuss options for recovering the schedule. If necessary, the project manager will add staff in order to recover the schedule.

LONG-TERM PROJECTS

We have a limited number of projects that are ongoing with construction completions and subsequent certifications that are 3 to 4 years out. We also have many short-term projects (3 to 12 months in duration) that are being completed concurrently. We are adaptive and manage our workload and backlog efficiently.

Our project management software and consistent internal and external communication methods allow for project delivery and accurate internal scheduling for concurrent projects.



**NORTH CAROLINA BOARD OF EXAMINERS
FOR ENGINEERS AND SURVEYORS**

4601 Six Forks Rd Suite 310
Raleigh, North Carolina 27609

WithersRavenel, Inc.
115 MacKenan Drive
Cary, NC 27511

This is to Certify that:

WithersRavenel, Inc. is licensed with the North Carolina Board of Examiners for Engineers and Surveyors, and is authorized to practice **engineering and land surveying** under the provisions of Chapter 89C and 55B of the General Statutes of North Carolina.

This authorization must be renewed annually, and **expires on June 30, 2025**

License No. : F-1479



**THE NORTH CAROLINA BOARD OF
EXAMINERS FOR ENGINEERS
AND SURVEYORS**

Executive Director

POST IN PLACE OF BUSINESS

Issued 06/28/2024

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ncbels@ncbels.org

WEB Site
www.ncbels.org



NORTH CAROLINA BOARD OF
LANDSCAPE ARCHITECTS

State of North Carolina

BE IT KNOWN THAT

WithersRavenel, Inc.

Having fully met the requirements of the General Statutes of
North Carolina, Chapter 89A, "Landscape Architects,"
and Chapter 55B, "Professional Corporation Act,"

is hereby granted this

CERTIFICATE OF REGISTRATION

by the

**NORTH CAROLINA BOARD OF LANDSCAPE
ARCHITECTS**


and is entitled to provide services of

LANDSCAPE ARCHITECTURE

in the state of North Carolina

CERTIFICATE NUMBER C-158

First Issued
10/11/2001


Board Chair

Expires on
Jun 30, 2025





Team Organization

ORGANIZATIONAL CHART

YOUR TEAM

Our skill set and collaborative project approach will allow us to effectively meet project objectives and deadlines. WithersRavenel sees our team as an extension of your staff. Each of the WithersRavenel staff members proposed for this contract are available immediately and are committed to fulfilling their duties until the projects are completed. **Our project manager, Deepthi Kalyanam, has 40% availability, which is ample to service this contract. Additionally, we can provide services for this contract completely in house.**



Will Cauthen
Client Officer

Malak Bahrami
QA/QC Manager

Deepthi Kalyanam, PE
Project Manager

Brandon Inscore
Project Principal

Funding and Finance

Megan Powell
Funding Lead

Amanda Whitaker
Director of Funding

Shannon Moore
Finance Lead

Geomatics

Marshall Wight, PLS
Survey Project Manager

Tyler Christian
GIS Project Manager

Kristy Possien
GIS Specialist

Asset Management

Casey Dolan, PE
Project Engineer

Nicole Organiscak, EIT
Project Engineer

Utilities

Nina Caraway, PE
Director of Hydraulic Modeling

Ali Nakhli, PhD, PE
Project Engineer

No subconsultants will be used



WILL CAUTHEN ■ CLIENT OFFICER

"Our People, Your Success" are not mere words for us—we go above and beyond through value-added approaches that we bring to our clients and projects. One way we put this philosophy into practice is a Client Officer, which is a complimentary service and will give this contract the attention it deserves. As Client Officer, Will Cauthen will routinely check in with you to ensure all milestones for project are being met and address any concerns or questions Henderson County may have.



Project Examples & References

Sewer AIA

ROCKY MOUNT, NC

REFERENCE

Brenton Bent
Director of Water Resources
City of Rocky Mount
252-972-1290
brenton.bent@rockymountnc.gov

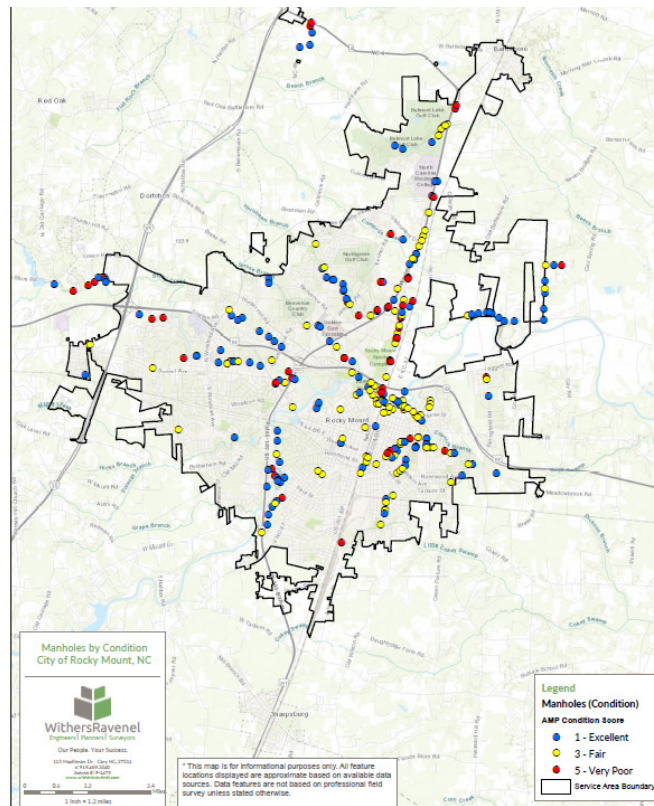
The City of Rocky Mount received an AIA grant for its sewer system. WithersRavenel began the project by reviewing existing data and information related to the system to ensure accuracy and completeness of data. We helped the City create a plan to acquire missing or incomplete data, and began the process of field-locating hundreds of sewer structures into the GIS database.

First, we identified any visible immediate issues and reported them to the client. Then, we verified and collected attribute information including diameter, material inverts, and structural condition.

We also performed a site visit to each of the City's pump stations to document the condition of these facilities. Flow monitoring followed to better understand inflow and infiltration (I&I) issues within the City's system.

Field condition assessment was further utilized to identify specific problem areas. All the information assembled to that point informed the hydraulic model that WithersRavenel built of the City's sewer collection system, including manholes, mains pump stations, and other features and facilities.

Our engineers and technicians then developed an asset management plan (AMP) to prioritize capital improvement needs. The AMP, an operations and maintenance plan, and a 10-year CIP with cost estimates and timelines provides the City with a comprehensive assessment of existing conditions and a roadmap for future improvements and overall asset management. We also provided asset management training for key City employees and stakeholders.





Project Examples & References

Sewer AIA

ARCHDALE, NC

REFERENCES

Zeb Holden
City Manager
City of Archdale
336-431-9141
zholden@archdale-nc.gov

In 2021, the City received an AIA grant to study its sewer collection system and to develop a comprehensive AMP. The sewer collection system conveys approximately 900,000 gallons per day from 4,985 customers to the City of High Point's Eastside Wastewater Treatment Plant (WWTP).

The sewer system assets include 92 miles of gravity mains, 9 miles of force mains, 2,200 manholes, 11 lift stations, and a 2.5 million gallons per day capacity/ownership in the Eastside WWTP.

The City, with the help of WithersRavenel, reviewed GIS data, performed field services, and developed an AMP.

The GIS data review included database schema development and data migration, and the field services includes GPS data collection, attribute population, connectivity, and flow monitoring to identify collection system basins experiencing inflow and infiltration.

Data collected from this review was used to classify critical assets, perform a risk assessment, identify critical projects to include in the City's CIP, and determine operation and maintenance strategies to mitigate future risk of failure.

Wastewater AIA

GRANITE FALLS, NC

REFERENCES

Randy Smith
Public Works Director
Town of Granite Falls
828-396-3131
smith@granitefallsncc.com

WithersRavenel is currently partnering with the Town of Granite Falls to deliver a comprehensive Wastewater Collection System AIA Study. Funded by a \$150,000 grant from the North Carolina Division of Water Infrastructure, the project is designed to enhance the Town's capacity for proactive wastewater system management and long-term financial planning. The scope of services includes GIS-based data collection and inventory development, condition and capacity assessments, and the creation of a 10-year Capital Improvement Plan (CIP). Initiated in late 2024, the project has progressed through major milestones and is now nearing completion, with final deliverables and a Board presentation scheduled for early Fall 2025.

This ongoing effort is yielding a robust set of tools and insights for the Town, including a geospatial asset database, system map books, detailed condition and capacity analyses, and a strategic CIP with cost projections. The work also includes recommendations for operations and maintenance improvements to support long-term asset sustainability. As the project approaches its final stages, WithersRavenel continues to collaborate closely with the Town to ensure all findings are actionable and aligned with future growth and system resilience goals. This engagement highlights WithersRavenel's continued commitment to delivering tailored, grant-funded infrastructure planning and asset management solutions for municipal clients.



Project Examples & References

Sewer AIA

BELMONT, NC

REFERENCES

Jonathan Wilson
Public Works Director
City of Belmont
704-825-0506
jwilson@cityofbelmont.org

WithersRavenel supported the City of Belmont in conducting a comprehensive AIA of its sewer system, funded by a grant awarded during the Fall 2021 North Carolina Department of Environmental Quality (NCDEQ) funding cycle. This effort was part of a broader initiative to enhance the City's asset management capabilities for both water and sewer infrastructure. For the sewer system, the AIA focused on filling inventory gaps, updating GIS data, evaluating the condition and risk of key assets, and developing a forward-looking AMP and CIP.

As part of the data collection effort, 280 manholes were field-located, assessed for attribute information, and photographed, with the results integrated into the City's GIS database.

These represent a portion of the approximately 2,700 manholes in the system, the majority of which still lack verified depth and material data. The study identified infrastructure segments requiring attention due to age, material, or proximity to critical areas and provided recommendations for ongoing maintenance, rehabilitation, and replacement strategies. WithersRavenel's work included integrating updated field data, conducting condition and criticality assessments, and creating lifecycle models to support long-term planning. These efforts are vital to helping the City of Belmont address ongoing challenges with aging infrastructure, prevent sanitary sewer overflows (SSOs), and prepare for the future decommissioning of the City's wastewater treatment plant and regional system integration.

Sewer AIA

OLD FORT, NC

REFERENCES

Pam Snypes
Mayor
Town of Old Fort
828-668-4244 ext.304
mayor@oldfortnc.com

WithersRavenel is currently assisting the Town of Old Fort, with the implementation of an AIA project for the sewer system, funded by an ARPA grant. This effort builds upon existing asset management initiatives and was one of two successful AIA grant applications prepared by WithersRavenel on the Town's behalf. The ongoing study is focused on supplementing and enhancing the Town's original 2018 AMP by addressing key data gaps, particularly in inventory completeness, system condition, and capacity analysis.

The scope of work includes GPS mapping of up to 200 sewer structures, integration of new and historical CCTV data to

investigate the causes of SSOs, GIS updates, and the development of a revised AMP and 10-year CIP. Additionally, a detailed financial and rate study will be delivered to support long-term sustainability. As the project nears its final stages, it is proving critical in helping the Town confront challenges tied to an aging wastewater treatment plant, population growth, and infrastructure strain. The resulting tools and recommendations will better equip the Town to plan capital improvements, reduce SSOs, and proactively manage its utility system well into the future.

Project Examples & References

Sewer AIA Engineering

LIBERTY, NC

REFERENCES

Scott Kidd
Town Manager
Town of Liberty
336-622-4276
townmanager@
townoflibertync.org

WithersRavenel provided professional services for updating missing sanitary sewer manhole attribute data in GIS and completed an asset management plan. Additionally, we produced a report summarizing the components of the AIA sewer study along with a description of the deliverables and outcomes of the project.

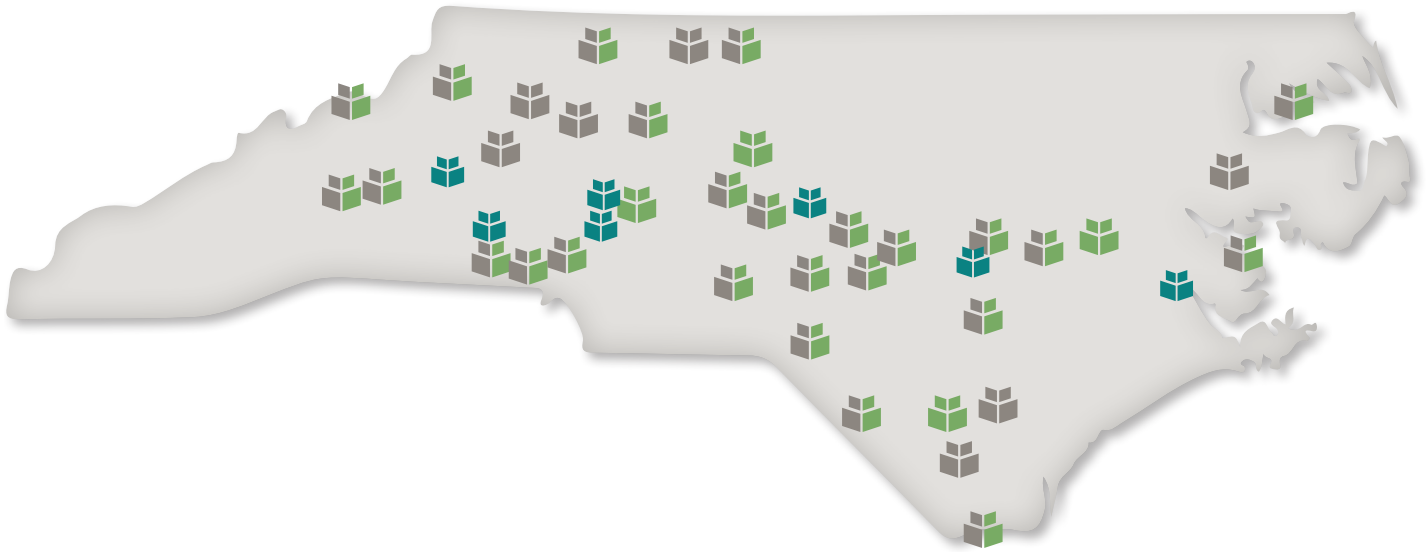
With the AMP in place, the Town of Liberty received an inventory of assets including maps, an assessment of the condition of the infrastructure in the inventory, an updated 10-year CIP with projected costs, an operation and maintenance plan, and a brief evaluation of service areas.

Other services provided by our team consisted of project management, GIS data review, and manhole attribute improvements.

In total, our firm populated the attributes of 597 sewer manholes within the Town of Liberty with missing information. Throughout this project, WithersRavenel team members verified and collected attribute information from the outside structure for pipe diameter, pipe material, inverts, type, and overall structural condition.

Approach photos were generated by a 360-degree panoramic camera and embedded into GIS data.

ADDITIONAL WITHERSRAVENEL AIA PROJECTS



Water

- » Baton Water Corporation
- » Martin County
- » Town of Elkin
- » Town of Pinebluff
- » Town of Taylorsville
- » Town of Walnut Cove
- » Town of White Lake

Sewer

- » City of Rocky Mount
- » Town of Clarkton
- » Town of East Spencer
- » Town of Siler City

Stormwater

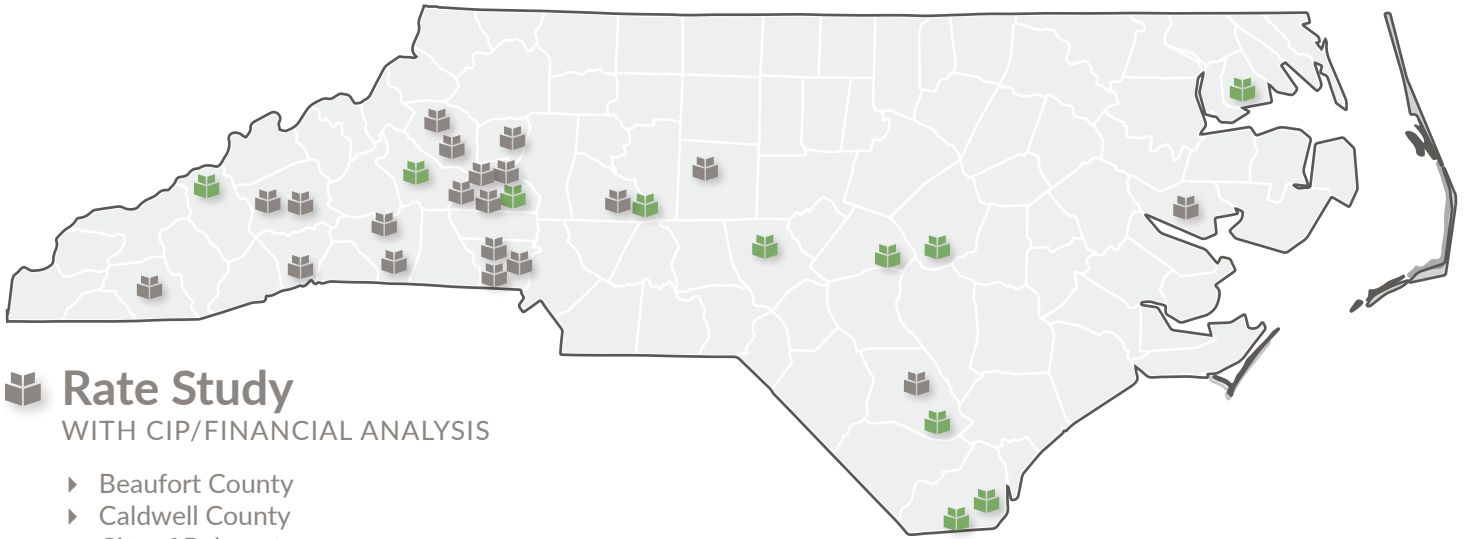
- » City of Dunn
- » City of Kannapolis
- » City of Morganton
- » City of New Bern
- » City of Salisbury
- » Town of Dallas
- » Town of Siler City

Water&Sewer

- » City of Archdale
- » City of Belmont
- » City of Bessemer City
- » City of Clinton
- » City of Dunn
- » City of Gastonia
- » City of Goldsboro
- » City of Marion
- » City of Randleman
- » City of Reidsville
- » Town of Belhaven
- » Town of Broadway
- » Town of Elk Park
- » Town of Green Level
- » Town of Hertford
- » Town of Jefferson
- » Town of Liberty
- » Town of Lillington
- » Town of Old Fort
- » Town of Pilot Mountain
- » Town of Red Springs
- » Town of Selma
- » Town of Troy
- » Town of Southern Pines
- » Village of Bald Head Island

Project Examples & References

WithersRavenel Rate & CIP/Financial Analysis Projects



Rate Study

WITH CIP/FINANCIAL ANALYSIS

- ▶ Beaufort County
- ▶ Caldwell County
- ▶ City of Belmont
- ▶ City of Bessemer City
- ▶ City of Claremont
- ▶ City of Conover
- ▶ City of Elizabethtown
- ▶ City of Hendersonville
- ▶ City of Hickory
- ▶ City of Lenoir
- ▶ City of Lowell
- ▶ City of Newton
- ▶ Town of Biltmore Forest
- ▶ Town of East Spencer
- ▶ Town of Franklin
- ▶ Town of Lake Lure
- ▶ Town of Liberty
- ▶ Town of Spindale
- ▶ Town of Taylorsville
- ▶ Town of Weaverville

CIP/Financial Analysis

- ▶ Catawba County
- ▶ City of Dunn
- ▶ City of Salisbury
- ▶ Maggie Valley Sanitary District
- ▶ Town of Aberdeen
- ▶ Town of Benson
- ▶ Town of Clarkton
- ▶ Town of Hertford
- ▶ Town of Shallotte
- ▶ Town of Valdese
- ▶ Village of Bald Head Island



Project Examples & References

FUNDING RECORD OF SUCCESS

OVERALL FUNDING RECORD OF SUCCESS

Funding is one of the services our multidisciplinary firm provides. Below is a compilation of projects and programs for which we obtained funds. For some of the projects, we also provided engineering and program administration services.

Funding Program	# of Projects	Total Funded
Community Development Block Grant (Infrastructure, Housing, Catalyst, etc.)	45	\$65,790,144
Economic Development (CDBG-ED, ARC, IDf, etc)	31	\$22,815,130
Economic Development Administration (EDA Grants)	4	\$5,204,945
GoldenLEAF (GLF)	22	\$13,998,878
Asset Inventory & Assessment Grants	104	\$18,776,000
Merger & Regionalization Study Grants	22	\$1,165,000
Clean Water Management Trust Fund (CWMTF) Non-Stormwater	23	\$39,630,173
Clean Water Management Trust Fund (CWMTF) Stormwater	8	\$671,744
Parks and Recreation Trust Fund	42	\$16,699,441
SRF Grants & Loans-Water	61	\$192,768,162
SRF Grants & Loans-Sewer	91	\$397,743,205
Rural Center Bond Projects	75	\$29,389,570
Economic Infrastructure (Rural Center)	6	\$2,284,255
Economic Innovation (Rural Center)	2	\$500,000
Clean Water Partners (Rural Center)	48	\$15,926,001
Building Reuse & Renovation (Rural Center)	2	\$876,000
Rural Center Misc. (Planning)	6	\$273,500
USDA	26	\$45,681,335
LASII Stormwater (Planning, Construction)	13	\$17,699,360
Lead Service Line (LSL)	22	\$28,320,504
Other	89	\$91,681,665
TOTAL	742	\$1,007,895,012

Other represents:

FEMA BRIC, LWCF, STAG, ARC, DOT, GLF, Brownfields, High Unit Cost (Original and 2014 Programs), TAG, NCORR ARRA, and Flood Mitigation.

*Rapidly growing our **\$1B+** funding total by assisting public clients like Henderson County.*



Project Approach

APPROACH



PROJECT UNDERSTANDING

It is our understanding that this project originated with the desire to complete work related to AIA for your wastewater collection system.

WithersRavenel's proven approach to CIP development combined with asset condition assessment, paves the way for a strategically prepared AMP to meet the needs of the community.

Our proposed project work plan will provide you with comprehensive assessments and cost-effective recommendations so that your infrastructure is managed wisely while adhering to budgetary guidelines.

Our step-by-step approach to the project is outlined in the Proposed Work Plan that follows and focuses on meeting the County's objectives to:

- » **GIS Database Development:** Establish a detailed wastewater asset inventory using existing data sources and field survey efforts, capturing key asset attributes such as pipe size, material, age, and elevation.
- » **Condition Evaluation:** Analyze asset conditions using pipe age and available historical condition data to develop understanding of asset health.
- » **Data Organization and Risk-Based Prioritization:** Organize asset information within the GIS database to support decision-making through a risk-based prioritization framework.
- » **I&I Identification:** Employ one or more assessment techniques — such as desktop analysis, flow monitoring, smoke testing, CCTV inspection, and manhole assessments — to identify areas of I&I contributing to system inefficiencies.
- » **Repair and Upgrade Recommendations:** Provide targeted recommendations for repairs and upgrades to mitigate I&I impacts and alleviate strain on pump station capacity.

- » **Operation & Maintenance Guidance:** Assess current system conditions and recommend optimized O&M practices to extend asset life and reduce long-term costs.
- » **Asset Management Plan and Capital Planning:** Deliver a comprehensive AMP incorporating a near- and long-term CIP, with project prioritization informed by GIS data and condition assessment results.
- » **Rate Study:** Prepare rate study to plan for financial needs and examine appropriate rates structures based on the developed CIP projects to maintain financial sustainability of the utility.

Additional objectives include the following:

- » Meet regulatory compliance related to project schedules and grant administration requirements.
- » Project closeout and presentation to council.

WithersRavenel takes a comprehensive approach to asset management planning and program development. Developing an Asset Management Program starts by understanding your needs and the current state of the organization's assets and levels of service.

This information provides the basis for asset management activities like securing grant funding, developing effective operations and management strategies, establishing capital needs, and executing long-term financial planning.

Our team uses data to increase the understanding of the state of your assets. This work includes reviewing existing asset data, identifying data gaps, conducting field data collection and attribute population as needed, completing condition assessments, and the review of information about repair history.





Project Understanding and Approach

We use this information to inform recommendations for renewal and replacement. This includes risk-based prioritization based on the likelihood and consequences of failure of assets to establish criticality. Creating strategies to manage the organization's most critical assets helps to mitigate risk to the entire organization.



PROPOSED WORK PLAN

WithersRavenel brings exceptional expertise and a collaborative approach, ensuring a strong partnership with the County. This partnership will be crucial for the successful and timely completion of the work as well as the development of fundable plans. Our team is committed to providing an organized strategy that addresses existing challenges while positioning the County for future growth and maintaining rate affordability for the community.

Our proposed project approach is the following:

Assess, Plan, and Prioritize is a sustainable approach that systematically tackles all the elements to ensure the delivery of a CIP that meets your needs and the goals of your strategic vision.

- » **Assess:** A thorough evaluation of your existing infrastructure is essential, requiring a comprehensive analysis of capacity and reliability.
- » **Plan:** Strategic planning optimizes the County's resources in a holistic way, integrating them into long-term goals for sustainable development.
- » **Prioritize:** To confidently prioritize projects, the final plan must incorporate a rigorous methodology. Criteria for prioritization may include maximizing economic value, optimizing environmental benefits, and fulfilling community objectives.

The criteria will be weighted to develop a project score/priority. Our team will closely work with the County to establish the appropriate decision-making methodology; one that is consistent with the Town's vision, needs, and is acceptable to your community.

Our approach to this project is grounded in sound and proven planning principles and years of experience in asset management projects. We have outlined a summarized project scope of work, highlighting the key elements of each task. We are excited to collaborate with you further to refine the scope and ensure it meets your specific needs.

To complete the tasks outlined in the schedule, we will implement the following work plan:

Project Management and Meetings

This includes the management of the overall scope, schedule, and budget. It also includes coordination with County staff, deliverables, and quality management. This task will include time for the kick-off meeting, monthly progress meetings, critical workshops that will focus on key decisions, as well as development and delivery of presentations to the public and Public Works Advisory Board.

Data Collection and Review

WithersRavenel believes that comprehensive and accurate data is the foundation of a successful AIA project. We compile as much existing information as possible, including historic maps, as-builts, or other record drawings, and the valuable institutional knowledge that we can capture from the Client's operations staff.

Our GIS team will use all available information to create a GIS database using Esri's industry-standard Utilities Data Model which is designed specifically for water and sewer utility systems. After this new GIS database is created, our GIS team will perform a data gap analysis to ensure there are unique identifiers, identify missing or inconsistent attribute information, identify geometric network connectivity issues, and look for other key pieces of information such as condition assessment information for risk-based prioritization scoring. A report with recommendations for filling in the gaps and improvements will be provided.





Project Understanding and Approach

Data Management

Database Development

In accordance with best practices, we use Esri's industry-standard Utilities Data Model designed specifically for water and sewer utility systems.

Data Migration

If a new or updated schema is necessary, our team is well versed in migrating existing data into new schemas using advanced GIS tools.

Attribute Population

In the office, our staff will work with the County in combing through as-built drawings to collect other information, such as age. The install date or age is useful in determining the estimated remaining service life of pipe for future lifecycle modeling purposes. It will be necessary to have the input of staff to verify the accuracy of the data, and identify areas that pose problems, are likely to experience high growth, and that have been rehabilitated.

GPS Collection and Field Services

Location and Attribute Population

Our team will focus on collecting missing attribute information in problem areas and critical study areas identified by working with the County.

The field services team will assist with survey, locating missing features on the ground using survey-grade GPS equipment under the direction of a Professional Land Surveyor (PLS).

Data collected will be imported into the GIS database for assessment and each record will be given its unique identifier.



Our field services teams will conduct attribute collection using Esri's Collector Application on a mobile device. The crews will attribute missing data such as material, diameter, depth, and condition through a combination of field assessment and record drawing review.

Configure GIS Database, Integrate New Data

Our GIS team will take all of this data and configure it into GIS to create a complete and high-functioning database ready for publishing, querying, and data analysis.

The County will receive a GIS database as well as hard and soft copy system maps that can be used to visualize the condition of the infrastructure. When complete, WithersRavenel can train County staff to edit and maintain the GIS and remain available for any amount of time desired for consultation and assistance.

Condition Assessment

At WithersRavenel, we employ a variety of condition assessment strategies tailored to the unique challenges of your utility. Our approach begins with a desktop review of asset age, historical data, and expected service life, followed by on-site visual inspections to identify visible issues. For a more comprehensive evaluation, we conduct field assessments such as CCTV investigations, flow monitoring, smoke testing, and pump station evaluations, including monitoring performance and drawdown testing. We use latest technologies such as SewerAI - advanced machine learning platform to streamline pipeline condition assessments. This allows for automated, NASSCO-compliant defect identification and scoring based on CCTV inspection footage, enhancing both accuracy and efficiency in our asset management workflows. These methods ensure a thorough understanding of your infrastructure's condition, enabling us to provide data-driven insights and recommendations to guide decision-making and future planning.

The condition assessment strategies outlined above will help WithersRavenel and the County pinpoint areas of I&I within the system. WithersRavenel will use the data gathered from these assessments to provide targeted recommendations for rehabilitation, repairs, and upgrades. These improvements will alleviate strain on the collection system, enhance its capacity, and ultimately reduce costs associated with system inefficiencies.



Project Understanding and Approach

Risk Matrix

Risk matrices are an effective tool for prioritizing infrastructure repair and replacement needs, helping to maximize the use of limited Capital Improvement Plan (CIP) funds. **These matrices, such as the example below, illustrate the intersection between the likelihood of asset failure and the potential adverse impacts on both human health and the environment.**

By utilizing this tool, we can prioritize the sanitary sewer assets and appurtenances that require the most immediate attention.

Operations & Maintenance (O&M) Plan

The O&M Plan included in our Asset Management Plan (AMP) provides a list of recommended best practices for the Town to follow in order to extend the useful life of its wastewater system assets.

The O&M recommendations in the AMP will be developed in close consultation and collaboration with Town staff, ensuring that the plan is a comprehensive list of activities that the Town is currently performing and plans to implement following the completion of this project.

Rate Study

WithersRavenel's financial services team will analyze current financial data and rates to determine sustainability and affordability. This helps local governments understand their expense and revenue streams in a deeper way so that they can gain a clear picture of their short- and long-term financial responsibilities and plan with certainty.

RISK MATRIX

		Potential Consequences				
		Not Significant	Minor	Moderate	Major	Severe
Likelihood	Almost Certain	Medium	High	Very High	Very High	Very High
	Likely	Medium	High	High	Very High	Very High
	Possible	Low	Medium	High	High	Very High
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Low	Low	Medium

Example of a risk matrix



Project Understanding and Approach

Asset Management Plan (AMP)

Our team brings extensive experience and a proven track record in developing comprehensive AMPs that are both strategic and actionable. We are fully equipped to deliver an AMP that integrates condition assessment results and GIS data to guide risk analysis and project prioritization.

Leveraging these tools and methodologies, we will perform a detailed risk assessment to identify and prioritize rehabilitation and replacement projects, supporting both near-term needs and long-term planning goals.

The final AMP deliverable would include the following key components:

- » **State of System Inventory:** A comprehensive catalog of wastewater system assets including pump stations, manholes, gravity mains, force mains, and other key infrastructure components.
- » **Risk Analysis:** Risk scoring for each asset, based on the likelihood and consequence of failure. This methodology ensures a data-driven approach to prioritizing capital investments.
- » **CIP:** A prioritized list of recommended rehabilitation and replacement projects, complete with estimated costs, categorized across short- and long-term planning horizons.

- » **O&M Strategies:** Targeted recommendations to optimize maintenance practices, reduce operational costs, and extend the useful life of assets.
- » **Lifecycle Model and Financial Analysis:** An evaluation of long-term financial requirements, incorporating the current state of the system and rate forecasts to ensure sustainable funding for future capital needs.

Scheduling

WithersRavenel prepares a schedule for each project using a Gantt chart format. All project team members have input in creating the schedule, and they assist in defining dependencies, constraints, and duration of tasks. Throughout the project, the team assists the Project Manager with the tracking of the project, noting the actual start and end dates of the various tasks. They keep all team members aware of task start and completion dates. This ensures on-time delivery of the project.

If they see a risk in meeting the schedule of a certain task, team members advise the Project Manager and discuss mitigation options for recovering the schedule. If necessary, the Project Manager will acquire additional staff and resources in order to recover the schedule.

PROPOSED SCHEDULE

Task	Deliverable Description	Estimated Timeline from Notice to Proceed
Complete contracting, form project team, and schedule kickoff meeting	N/A	1 month
Data collection, assessment of current mapping, Geodatabase design	Gap analysis results	2-3 months
GIS database development, field surveying services, GIS database completion	Esri Geodatabase	4-8 months
Condition assessment (CCTV, smoke testing, pump station performance evaluation, etc.	Map with identified defects	9-12 months
Risk analysis, 10 Year CIP development, draft AMP	Draft AMP document and draft CIP	13-15 months
Final AMP and Board presentation	Final AMP document and final Board presentation	16-17 months
Project closeout	N/A	18 months



Insurance Requirements



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

10/31/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Edgewood Partners Insurance Agency 3780 Mansell Rd. Suite 370 Alpharetta GA 30022		CONTACT NAME: Greyling COI Specialist PHONE (A/C, No, Ext): 770.756.6599 FAX (A/C, No): 770.756.6599 E-MAIL: greylingcerts@greyling.com ADDRESS:	
INSURED WithersRavenel, Inc. 115 MacKenan Drive Cary, NC 27511		INSURER(S) AFFORDING COVERAGE INSURER A: Hartford Casualty Insurance Company NAIC # 29424 INSURER B: Allied World Surplus Lines Insurance Co 24319 INSURER C: Hartford Fire Insurance Company 19682 INSURER D: INSURER E: INSURER F:	

COVERAGES

CERTIFICATE NUMBER: 1314761407

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:		20UUGKL0345	10/30/2024	10/30/2025	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY		20UEGKL0814	10/30/2024	10/30/2025	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 10,000		20RHGXU6057	10/30/2024	10/30/2025	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N <input checked="" type="checkbox"/> N <input type="checkbox"/> A	20WBGAQ2751	10/30/2024	10/30/2025	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
B	Professional Liability incl. Pollution Liability		03140472	10/30/2024	10/30/2025	Per Claim 2,000,000 Aggregate 4,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

CERTIFICATE HOLDER

CANCELLATION

Sample Certificate	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE
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ACORD 25 (2016/03)

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Fee & Expense Schedule

WithersRavenel, Inc.

Effective January 1, 2025

Schedule is subject to change which typically occurs on an annual basis.

Description	Rate
Engineering & Planning	
Construction Project Professional	\$165
Construction Manager I	\$170
Construction Manager II	\$185
Senior Construction Manager	\$210
CAD Technician I	\$115
CAD Technician II	\$130
Senior CAD Technician	\$160
Designer I	\$145
Designer II	\$170
Senior Designer	\$190
Landscape Architect I	\$170
Landscape Architect II	\$195
Landscape Architect III	\$215
Senior Landscape Architect	\$235
Landscape Designer I	\$145
Landscape Designer II	\$160
Planning Technician	\$125
Planner I	\$135
Planner II	\$160
Planner III	\$185
Senior Planner	\$195
Project Engineer I	\$185
Project Engineer II	\$195
Project Engineer III	\$215
Senior Project Engineer	\$235
Assistant Project Manager	\$195
Project Manager	\$215
Senior Project Manager	\$235
Resident Project Representative I	\$110
Resident Project Representative II	\$130
Resident Project Representative III	\$145
Senior Resident Project Representative	\$160
Staff Professional I	\$100
Staff Professional II	\$160
Staff Professional III	\$170
Staff Professional IV	\$210
Senior Staff Professional	\$220
Senior Technical Consultant	\$275
Client Experience Manager	\$250
Director	\$255
Principal	\$285
Zoning Specialist	\$370
Project Coordinators	
Project Coordinator I	\$105
Project Coordinator II	\$125
Project Coordinator III	\$135
Senior Project Coordinator	\$145
Lead Project Coordinator	\$160

Description	Rate
Funding & Asset Management	
GIS Senior Specialist	\$185
GIS Specialist	\$165
GIS Survey Technician I	\$85
GIS Survey Technician II	\$110
GIS Survey Technician III	\$130
GIS Survey Lead	\$145
GIS Technician	\$105
GIS Analyst I	\$130
GIS Analyst II	\$145
GIS Project Manager	\$185
F&AM Assistant Project Manager	\$180
Intern I	\$75
Intern II	\$95
F&AM Implementation Specialist	\$165
F&AM Project Consultant I	\$130
F&AM Project Consultant II	\$140
F&AM Project Consultant III	\$145
F&AM Project Consultant IV	\$150
F&AM Senior Project Consultant I	\$165
F&AM Senior Project Consultant II	\$170
F&AM Project Manager	\$185
F&AM Principal	\$285
F&AM Director	\$255
F&AM Staff Professional I	\$80
F&AM Staff Professional II	\$125
F&AM Staff Professional III	\$170
F&AM Staff Professional IV	\$210
F&AM Senior Project Manager	\$235
F&AM Senior Technical Consultant	\$270
Geomatics	
Geomatics CAD I	\$110
Geomatics CAD II	\$130
Geomatics CAD III	\$145
Geomatics Project Manager I	\$185
Geomatics Project Manager II	\$195
Geomatics Project Manager III	\$225
Geomatics Project Professional I	\$165
Geomatics Project Professional II	\$190
Geomatics Principal	\$265
Geomatics Remote Sensing Crew I	\$235
Geomatics Remote Sensing Crew II	\$330
Geomatics Survey Crew I	\$170
Geomatics Survey Crew II (2 Man)	\$205
Geomatics Survey Crew III (3 Man)	\$250
Geomatics Senior Manager	\$235
Geomatics Survey Tech I	\$70
Geomatics Survey Tech II	\$100
Geomatics Survey Tech III	\$130
Geomatics Survey Tech IV	\$140
Geomatics Sr. Technical Consultant	\$235
Geomatics SUE Crew 1	\$205
Geomatics SUE Crew 2	\$280

Description	Rate
Environmental	
Environmental Technician I	\$90
Environmental Technician II	\$105
Environmental Technician III	\$110
Environmental Senior Technician	\$125
Environmental Project Geologist I	\$165
Environmental Project Geologist II	\$180
Environmental Project Geologist III	\$205
Environmental Senior Project Geologist	\$225
Environmental Asst. Project Manager	\$180
Environmental Project Manager	\$205
Environmental Senior Project Manager	\$225
Environmental Director	\$255
Environmental Project Engineer I	\$165
Environmental Project Engineer II	\$180
Environmental Project Engineer III	\$205
Environmental Senior Project Engineer	\$225
Environmental Principal	\$285
Environmental Project Scientist I	\$165
Environmental Project Scientist II	\$180
Environmental Project Scientist III	\$205
Senior Environmental Project Scientist	\$225
Environmental Scientist I	\$115
Environmental Scientist II	\$140
Environmental Scientist III	\$150
Environmental Geologist I	\$115
Environmental Geologist II	\$140
Environmental Geologist III	\$150
Environmental Professional I	\$115
Environmental Professional II	\$140
Environmental Professional III	\$150
Environmental Senior Tech. Consultant	\$250
Administrative	
Administrative Assistant	\$75
Administrative Assistant I	\$90
Administrative Assistant II	\$100
Administrative Assistant III	\$110
Marketing Administration I	\$100
Marketing Administration II	\$130
Director of Marketing	\$165
Office Administration	\$80
Office Administrator I	\$130
Office Administrator II	\$135
Office Administrator III	\$140
Expenses	
Bond Prints (Per Sheet)	\$1.75
Mylar Prints (Per Sheet)	\$11.00
Mileage	Per IRS
Delivery - Project Specific (Distance & Priority)	
Subcontractor Fees (Markup)	1.15
Expenses / Reprod. / Permits (Markup)	1.15
Other	
Expert Witness	\$400



Attachment I

Attachment I: Vendor Information Form			
Company/Firm Name			
WithersRavenel			
Mailing Address			
115 MacKenan Drive, Cary, NC 27511			
Contact Name		Contact Title	
Deepthi Kalyanam		Project Manager	
Phone Number	Fax	Email	Website
919-678-3805	919-467-6008	skalyanam@withersravenel.com	https://withersravenel.com/
Federal Tax ID Number		Unique Entity Identification Number (SAM.gov)	
56-1740520		SK8ECFTPUEH7	
Required Documentation		Internal Routing	
Completed IRS W-9 form dated within calendar year and signed by authorized personnel.		W9 Received	<input checked="" type="checkbox"/> YES
Minority and Women Owned Business (MWBE) certification, if applicable.		MWBE Certification Received	<input type="checkbox"/> YES <input checked="" type="checkbox"/> N/A
		Unique Entity Identification Number confirmed in SAM.gov	<input checked="" type="checkbox"/> YES



Attachment I

Form **W-9**
(Rev. March 2024)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

Go to www.irs.gov/FormW9 for instructions and the latest information.

Give form to the
requester. Do not
send to the IRS.

Before you begin. For guidance related to the purpose of Form W-9, see *Purpose of Form*, below.

Print or type. See Specific Instructions on page 3.	1 Name of entity/individual. An entry is required. (For a sole proprietor or disregarded entity, enter the owner's name on line 1, and enter the business/disregarded entity's name on line 2.)	
	WithersRavenel, Inc.	
	2 Business name/disregarded entity name, if different from above.	
	3a Check the appropriate box for federal tax classification of the entity/individual whose name is entered on line 1. Check only one of the following seven boxes.	4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):
	<input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C corporation <input checked="" type="checkbox"/> S corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> LLC. Enter the tax classification (C = C corporation, S = S corporation, P = Partnership) Note: Check the "LLC" box above and, in the entry space, enter the appropriate code (C, S, or P) for the tax classification of the LLC, unless it is a disregarded entity. A disregarded entity should instead check the appropriate box for the tax classification of its owner. <input type="checkbox"/> Other (see instructions) _____	Exempt payee code (if any) <u>5</u> Exemption from Foreign Account Tax Compliance Act (FATCA) reporting code (if any) <u>n/a</u> <i>(Applies to accounts maintained outside the United States.)</i>
3b If on line 3a you checked "Partnership" or "Trust/estate," or checked "LLC" and entered "P" as its tax classification, and you are providing this form to a partnership, trust, or estate in which you have an ownership interest, check this box if you have any foreign partners, owners, or beneficiaries. See instructions <input type="checkbox"/>		
5 Address (number, street, and apt. or suite no.). See instructions.		
115 MacKenan Drive		
6 City, state, and ZIP code		
Cary NC 27511		
7 List account number(s) here (optional)		
Requester's name and address (optional)		

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. See also *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number									
			-				-		
or									
Employer identification number									
5	6	-	1	7	4	0	5	2	0

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
- I am not subject to backup withholding because (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
- I am a U.S. citizen or other U.S. person (defined below); and
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and, generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign
Here

Signature of
U.S. person

Ashley Cade

Date 1/2/2025

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

What's New

Line 3a has been modified to clarify how a disregarded entity completes this line. An LLC that is a disregarded entity should check the appropriate box for the tax classification of its owner. Otherwise, it should check the "LLC" box and enter its appropriate tax classification.

New line 3b has been added to this form. A flow-through entity is required to complete this line to indicate that it has direct or indirect foreign partners, owners, or beneficiaries when it provides the Form W-9 to another flow-through entity in which it has an ownership interest. This change is intended to provide a flow-through entity with information regarding the status of its indirect foreign partners, owners, or beneficiaries, so that it can satisfy any applicable reporting requirements. For example, a partnership that has any indirect foreign partners may be required to complete Schedules K-2 and K-3. See the Partnership Instructions for Schedules K-2 and K-3 (Form 1065).

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS is giving you this form because they



THANK YOU!



WithersRavenel
Our People. Your Success.