March 7, 2019

Town of Holden Beach
110 Rothschild Street
Holden Beach, North Carolina 28462

Attention: Ms. Heather Finnell, Town Clerk

Subject: Letter of Intent
Vacuum Sewer System Station #3 Upgrade
Holden Beach, North Carolina
Green Engineering, PLLC

Dear Ms. Finnell:

Green Engineering appreciates the opportunity to present our qualifications for providing Professional Engineering Services to the Town of Holden Beach for the Vacuum Sewer System Station #3 Upgrade project. Located in Wilson, North Carolina, we are a multi-disciplined firm, having provided Design, Contract Administration and Construction Observation Services since 1957 to our clients throughout eastern North Carolina. As noted in the Request for Qualifications, it is our intent to provide these same services to the Town of Holden Beach for the Project described in the Town’s Request for Qualifications.

Green Engineering and our design team members are intimately familiar with the Scope of the Project due to our recent involvement with the upgrades performed at Vacuum Sewer System Station #4. Our involvement with that project has brought invaluable experience to the members of the design team and this experience will provide the foundation for the successful design and construction of similar improvements to the Town’s Vacuum Sewer System Station #3.

It is our intent to utilize the same Professional Consulting Team that designed, bid and administered the construction of the Vacuum Sewer System Station #4 Upgrade project that is currently being completed. In addition to the original design team of Green Engineering, Dixon Associates (structural) and Dibble & Pledger (electrical), we will be adding Stewart Acoustical Consultants whose responsibility will be to provide technical advice on acoustics and noise control in a residential neighborhood where the closest dwelling to the vacuum station improvements is less than twenty (20) feet.

Thank you again for your time and consideration of our qualifications. Should you have any questions, please do not hesitate to contact me.

Respectfully,

E. Leo Green, P.E.
TOWN OF
HOLDEN BEACH
NORTH CAROLINA

STATEMENT OF QUALIFICATIONS
FOR
IMPROVEMENTS TO
SEWER PUMP STATION #3

GREEN ENGINEERING, PLLC
Engineers, Planners and Surveyors
NC Firm License: P-0115
303 Goldsboro Street East
Wilson, North Carolina 27893

252-237-5365 (PHONE)
252-243-7489 (FAX)
www.greenengineering.com
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Green Engineering’s technical team assembled for the improvements to Holden Beach’s Vacuum Sewer System Station #3 has decades of combined experience in planning, evaluation, design, bid acquisition, construction supervision and project administration for municipal wastewater and local government clients. Our prior experience on similar projects such as the one being proposed in Holden Beach guarantees the Town will be delivered a successful product on a timely schedule.

Fundamental to our approach will be the design parameters and project constraints encountered during the retrofit of the Town’s existing Vacuum Sewer System Station #4 currently being completed. With our project design team actively engaged in the completion of this project and the similar scope of services proposed for the Town’s Vacuum Sewer System Station #3 Upgrade project, our design team will provide the Town a seamless transition to the design and construction of this project. In addition to the modification of Vacuum Sewer System Station #3 to reduce vulnerability due to flooding and improve employee safety by construction an above the ground structure to house the vacuum pumps and all related electrical equipment above the base flood elevation, our design team will evaluate and design a by-pass intercept of pump station #3 at the intersection of Seagull Street and Ocean Boulevard West.

During all the above system evaluation and study, Green Engineering was also engaged with a municipal client in the planning and detailed design of a comprehensive wastewater collection system consisting of a vacuum pump station and vacuum collection mains. We feel that this opportunity has provided our staff with an even stronger background in this type system development and operation.

In our opinion, our experience with the upgrades made to Vacuum Sewer System Station #4 and the preliminary investigations we have made with regards to the by-pass intercept eminently qualifies Green Engineering to provide the Town of Holden Beach the technical expertise it requires to fully implement a project to modify its existing Vacuum Sewer System Station #3.
EXISTING VACUUM STATION NUMBER 3
Section 2 - Firm’s History and Statement

Firm Name and Address
Green Engineering, PLLC

Corporate Office
303 Goldsboro Street East
Post Office Box 609
Wilson, North Carolina 27893
www.greenengineering.com

Principal Contact
E. Leo Green, Jr.
252-237-5365 (PHONE)
252-243-7489 (FAX)
elg@greeneng.com

Business History
Organizational Structure: Partnership
Principals: E. Leo Green, Jr. – CEO
E. Leo Green, III – President

Number of Employees: 18
Square Footage of Office: 10,000
Year 1957: Name changed to F. T. Green & Associates, P.A.
Year 1995: Name changed to Green Engineering, PLLC

Firm’s Licenses
Green Engineering, PLLC is licensed to practice Engineering and Land Surveying in the State of North Carolina under License No. P-0115.

Professional Liability Insurance
Green Engineering, PLLC is insured by a $2,000,000 (per claim) professional liability policy.

Green Engineering has no Federal, State or Local Tax Liens; or any claims or liabilities pending against them.

Equal Opportunity Employer
Green Engineering, PLLC is an equal opportunity employer and does not discriminate in any way on the basis of race, color, religion, sex, national origin, age or disability.
Section 2 - Firm's History and Statement

Our Business Philosophy

To be effective in the consulting engineering field, you must have the experience, proper tools, the time and the knowledge to adequately evaluate a project of this type. For more than 60 years, Green Engineering has embraced that formula. Every client receives our full attention and every project is backed by detailed examination, experienced design and qualified technical personnel using state-of-the-art technology.

Green Engineering boasts a long list of satisfied clients in public, institutional and the private sector throughout North Carolina. Green Engineering consistently exceeds client expectations in the engineering development of municipal and county water systems, sanitary sewer systems, roadways and storm drainage systems, long range infrastructure planning, project financing procurement and detailed project management. Our long-standing client relationships provides us with the tools and knowledge to understand our client's needs and expectations so that we may plan for the long-term and optimize our efforts in developing functional, economically feasible systems.

Our regulatory experience and relationships with these agencies ensures the continuous progression of our client's projects. We facilitate approval from regulatory agencies including the Environmental Protection Agency, North Carolina Department of Environmental Quality, NCDOT, US Army Corps of Engineers, Office of State Construction and the North Carolina Local Government Commission.

We understand that our clients need an open and continuous line of communication to monitor the progress of their projects. At Green Engineering you will have a personal contact with our firm, a contact that can guide you through the process, offer assistance and answer any questions you may have. While you have the luxury of a personal contact, our work is a team effort conducted by a group of professionals, all knowledgeable and empowered to make decisions and offer their assistance.
Financial Stability and Insurance Coverage

Green Engineering’s strength comes from sustained, repetitive, and diversified project experiences based upon proven business principles and utilization of most current technology. Given the economic conditions over the last 9+ years, Green Engineering has been able to sustain its fair share of the municipal infrastructure civil consulting market.

The financial position and strength of the firm is strong, and we do not anticipate any deficiencies with our ability to assign the appropriate resources to complete this project for Holden Beach. Our record of experience depends on satisfactory performance at all levels. We now celebrate 60 years of providing valued engineering and surveying services throughout Central and Eastern North Carolina.

A copy of Green Engineering’s Certificate of Insurance is attached. In addition to this coverage the firm carries a $2,000,000 (per claim) professional liability policy.

There are no active or pending legal disputes or claims against the firm.
Section 2 - Firm's History and Statement

ACORD CERTIFICATE OF LIABILITY INSURANCE

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
Standard Insurance-Rocky Mount
1000 Geneseeus Road
PO Box 8195
Rocky Mount, NC 27804-1105
John T. Smith CPCU, AFIS, AAI

252-446-6156

252-446-6156

252-446-6131

smith@standardins.com

INSURER A: Penn National Security Inc. Co

COVERAGES

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.

A COMMERCIAL GENERAL LIABILITY

CLAIMS-MADE

BUSINESS OWNERS

X OCCUR

X

SENL. AGGREGATE LIMIT APPLIES PER:

POLICY

LOC

OTHER

POLICY NUMBER

BX90734573

12/07/2018

12/07/2019

POLICY EFF

POLICY EFF

LIMITS

2,000,000

2,000,000

B AUTOMOBILE LIABILITY

ANY AUTO

OWNED

SCHEDULED AUTO

ANY AUTO

OWNED

NONOWNED AUTO

X

X

POLICY

LOC

OTHER

POLICY NUMBER

AX90734573

12/07/2018

12/07/2019

POLICY EFF

POLICY EFF

LIMITS

1,000,000

1,000,000

B UMBRELLA LIABILITY

CLAIMS-MADE

EXCESS LIABILITY

POLICY

LOC

OTHER

POLICY NUMBER

UL90734573

12/07/2018

12/07/2019

POLICY EFF

POLICY EFF

LIMITS

5,000,000

5,000,000

B WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY

X

X

PER ACCIDENT

THE

OTHER

POLICY NUMBER

WC90734573

12/07/2018

12/07/2019

POLICY EFF

POLICY EFF

LIMITS

1,000,000

1,000,000

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

Leo Green Jr. & Leo Green III are excluded from coverage.

CERTIFICATE HOLDER

CANCELLATION

Town of Holden Beach
110 Rothschild Street
Holden Beach, NC 28462

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORISED REPRESENTATIVE

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Section 3 - Scope of Work

Survey & Preliminary Design

- **Survey.** Prior to beginning the Preliminary Design Phase, representatives from the Green Engineering will validate all available record drawings of the Vacuum Sewer System Station #3 as it relates to the following components:
  * location of existing structures on the site
  * location of original 404 delineation
  * onsite benchmark to latest adjusted mean sea level elevation
  * horizontal control to latest adjusted datum
  * CAMA designation
  * request Corp of Engineers validate authenticity of existing 404 delineation
  * validate all existing structure(s) elevations with all available As-Built (Record) Drawings
  * validate all horizontal dimensions on the existing structure that will be subject to some
  * modification as a result of the proposed project

- **Preliminary Design – Vacuum Sewer System Station #3.** Prior to any Final Project Design being initiated, Green Engineering's Design Engineers, together with its Consulting Affiliates, will meet at specified intervals, with designated Town representatives to review and discuss all previously developed studies, reports, schematics, suggestions, etc. that may have been submitted by previous Engineers, either commissioned or otherwise obtained. More specifically, this information will yield the following results:
  * a complete understanding of the Town’s expectations of the functionality of all components of the upgraded system when completed
  * degree of storm surge protection of major system components - i.e. electrical, mechanical, units to be located above storm surge; units to remain virtually unprotected below grade
  * desired architectural treatment of all exterior structures, building walls, access stairs, etc.
  * degree of protection for primary electrical service including all metering devices, standby power capabilities
  * seek comments and/or preliminary approval of proposed system modifications from all local, state and federal authorities prior to beginning Final Design Phase
  * To provide an adequate design for noise abatement and control our acoustical consultant will conduct noise level / test (both inside and outside) at the recently completed Vacuum Sewer System Station #4. Collection of this type information is a must to insure that the selected materials of construction are adequate to reduce sound levels generated from the above ground structure will be tolerable at all adjacent residential structures.
Section 3 - Scope of Work

- Preliminary Design – Bypass Intercept of Pump Station #3 Force Main. Green Engineering is aware of the odor issues originating from the vent piping of the outside sewer pump station at Vacuum Sewer System Station (VSS) #4. It is Green's preliminary opinion that this below ground pump station possibly can be eliminated by upgrading the two (2) existing vacuum tank ten (10) horsepower submersible sewer pumps located in the lower level of VSS #4 to pump directly into the existing 8-inch diameter sewer force main on Seagull Street. Concurrent with this change, upgrade the two (2) existing vacuum tank twenty-five (25) horsepower submersible sewer pumps located in the lower level of VSS #3 to pump into the existing 8-inch sewer force main on Seagull Street.

The use of a common sewer force main by two (2) or more pump stations is an accepted practice in today's world of high-tech computer modeling of multiple variable speed sewer pumping systems. Should this concept come to fruition, the elimination of the dual fifty (50) horsepower outside, odor causing, below ground sewer pump station at VSS #4 can be eliminated. See Flow Diagram on Page 9 for a conceptual illustration of this pump station(s)/force main scenario.
Section 3 - Scope of Work

LEGEND
- EXISTING 8"Ø FORCE MAIN FROM VPS #3 TO VPS #4
- EXISTING 6"Ø FORCE MAIN ON SEAGULL DRIVE
- VPS #3 3"Ø FORCE MAIN CONNECTION TO EXISTING 8"Ø FORCE MAIN ON SEAGULL DR.
- EXISTING 8"Ø FORCE MAIN FROM VPS #4 TO SEAGULL DR.
- INSTALL 8"Ø BYPASS AROUND EXISTING WET WELL PUMP STATION AT VPS #4
- **EXISTING 8"Ø FORCE MAINS TO BE ABANDONED**
Final Design and Permitting

- **Final Design.** Utilizing all input provided throughout the Preliminary Design Phase and in close corroboration with its Consulting Affiliates, Green Engineering will participate in and coordinate the development of final system plan and specifications required to construct the facilities that were discussed, planned and adopted during the Preliminary Phase of the project. These products will be periodically presented to local permitting authorities throughout their development to make sure that methods of construction or system components are being proposed that will meet local ordinances and/or requirements.

All plan and specifications prepared for this Project will be presented in a clear, complete and professional fashion such that the final product will be suitable for distribution to prospective bidders that are qualified to perform public utility work in North Carolina.

Green Engineering and its Consulting Affiliates are well recognized and respected consulting engineering firms in the region. The quality of our collective works typically attracts Contractors with like credentials.

- **Prepare Final Cost Estimate.** Green Engineering will monitor and update Project Cost Estimates for the Owner throughout the development of Final Plans and Specifications. This will serve to abate any potential for surprises that may develop at the time of project receipt. Once all Final Plans and Specifications have been completed, Green Engineering will prepare and submit to Town Representative its Final Opinion of Project Cost for the construction of the Project. These numbers will not guarantee what the Project Bids might be but will be based on the qualifications and experience of the Professional Engineering Group involved with the Proposed Work.

(Let us emphasize the rationale of Green Engineering's decision to utilize the expertise and experience of the Design Affiliates we have chosen to team with in this endeavor. Their knowledge of the original system design and onsite observation of that work in progress, not to mention the records they both continue to maintain of the system components, will certainly assist in streamlining the time required for the design phase of this project.)
Section 3 - Scope of Work

- **Permitting.** Projects of this type typically will require Permit review from many jurisdictions. This one is no different. The following are the Agencies that will be provided the pertinent information necessary for them to determine whether formal Permits are required:

  **Coastal Area Management Act (CAMA)** - Typically CAMA Permits expire after five (5) years. This would apply to the Sewer Pump Station site. Preliminary site plans will be submitted to this Agency once the updated survey work has been completed and all anticipated onsite land disturbing activities can be identified. This activity will begin early on in the Preliminary Design Phase in order to eliminate any delays that may be caused by this bureaucratic process.

  **State of North Carolina Department of Environmental Quality, Division of Water Resources**—This State Agency reviews and approves new sewer pump stations and collection system projects. Since this project is not being developed to accommodate an expanded service area or handle an increase in flow, it is our opinion that a Permit from this Agency will not be required. However, should one be necessary, it can be a “fast track” process which normally takes three (3) to four (4) week to obtain. Our staff will verify this Permit requirement with the Wilmington Regional Office during the Preliminary Design Phase of the Project.

  **Local Building Permit Issued By Town of Holden Beach** – Contact was made with a Holden Beach Inspection Department representative regarding the requirement for a Building Permit for the proposed improvements to Pump Station #4. Since the local Building Inspector will be consulted periodically throughout the design phase of the Project there should not be any delay in obtaining any Permit issued locally.
Section 3 - Scope of Work

Bidding and Contract Award

- **Bidding.** Once the Town is satisfied with the final design of the Project and all Permits have been obtained, the Project will be Advertised for Bids. For public bids, the advertisements are normally placed in publications having circulation in the general area of the Project. Green Engineering will also consult with the Town to ascertain the names of local qualified contractors that may be interested in submitting a bid on the work.

Green and its Consulting Affiliates will also have names of qualified contractors that normally perform work in this area of North Carolina that the Advertisement for Bids will be sent to. Other means of promoting interest in the bid process will be through various construction trade networks and publications that normally follow this type Project.

Projects of this magnitude will normally be advertised for a minimum of thirty (30) days. Included in the Advertisement will be an announcement that a Pre-Bid meeting with Contractors showing interest in the Project will be held ± 15 days prior to the Bid Opening date.

- **Contract Award.** Typically, Bid Dates are set a week or so in advance of regular Town Board meetings in order to give the Engineer sufficient time to review the Bids, prepare Bid Tabulations and develop a Memorandum of Award to be presented to the Town Board for final action.
Section 3 - Scope of Work

Project Construction and Start-up

- **Pre-Construction Conference.** Once Contracts for the Project have been awarded and all Documents have been signed and sealed by the Contractor, the Town's Attorney will authorize the appropriate Town Official(s) to execute same. At that time an on-site (Town Hall) Pre-Construction Conference will be scheduled. Those attending that meeting will include various Town Representatives and Officials; Contractors and Sub Contractors; Project Engineer and Affiliates; Project Inspector(s); Local Utility (power, phone, cable) Representatives; and possibly some State and Federal Regulatory Officials.

The main purpose of the meeting is to identify Project Representatives; review Contractor(s)' Construction Schedule and Cash Flow Projections; discuss timely submittal of Shop Drawings, Payment Requests, Sales Tax Reports, Payment Procedure by Owner; and review Liquidated Damages Requirements specified in the Contract(s). A Notice To Proceed To Construct will be issued at that meeting as well.

- **Construction.** The Contractor will be required to provide an on-site construction trailer for use by his employees, the Engineer and Town Representatives. The Project Engineer will provide all construction staking required by the Contractor for orderly development of the Project. Town and Engineer’s Representatives shall have access to the construction site at all times.

Progress Meeting will be held monthly. The purpose of these meetings will be to discuss work to date and project schedule; any foreseeable changes in the Scope of Work; and job performance and quality of workmanship.

The Engineer and/or his Representative will be available at all time during the Contractor’s performance of the work to answer any questions regarding the intent of the Plans and Specifications; to review the progress of the Work and to represent the Town of Holden Beach should any dispute or potential for dispute arise during the performance of the Work.

Green Engineering's and its Consulting Affiliates possess 100+ years of collective experience in managing projects of this nature and magnitude. Our combined understanding of the Scope of this Project will ensure the Town of Holden Beach of a successful Project and one that will provide the results that were planned and anticipated since its inception.
Section 3 - Scope of Work

- **Project Start-up.** Once all Project work has been completed and all systems are ready to be placed into operation, Green Engineering will instruct the Contractor(s) to notify their respective equipment suppliers to provide start-up services on all newly installed equipment. Concurrent with this equipment start-up, Green Engineering Representatives will prepare a Final Punch List of construction items yet remaining to be satisfactorily completed. Following acceptable attention to this detail the Engineers will schedule a Final Inspection of the Work and request that representatives from the Owner, Contractor(s) and Engineer be in attendance to accept the Project as constructed.

Assuming that all Parties are satisfied with the performance of the Work and all systems are functioning in accordance with their specified design conditions, Project Close-Out can begin.

A few items that will be addressed in Final Project Close-Out will be, acquisition of lien releases from Contractor(s); receipt of all Sales Tax Reports; Notice of all Equipment Warranty Periods; and Preparation, Presentation and Payment of Final Invoices to Contractors by Town.
Staff Availability and Qualifications

The project team identified below has been selected based on their individual abilities and qualifications in providing engineering, environmental and surveying/mapping services in the planning, evaluation, design, permitting, bidding, construction administration and observation of the Sewer Pump Station #4 project. These individuals, each possessing years of experience in the various project phases, work together as a team to provide our clients with turnkey solutions and cost effective designs.

Current work load at Green Engineering is such that it will not interfere with our project team’s ability to meet the Town of Holden Beach’s requirement to provide the necessary proposed improvements to its Sewer Pump Station #3.
Section 4 - Team Organization and Qualifications

Below we have identified the design team members, their professional registrations and their individual qualifications as identified in the Town of Holden Beach’s Request for Qualifications.

**Green Engineering Project Team Members**

Leo Green Jr.             Wilson, N.C.
• License No. 4495 (NC-PE)
• License No. L – 2225 (NC-PLS)

Tom Dienes               Wilson, N.C.
• License No. 27372 (NC-PE)

Penny Glover             Wilson, N.C.

**Associate Team Members**

Dixon Associates Consulting Engineers, Inc.
William P. Dixon, Raleigh, N.C. - License No. 010958 (NC-PE)

Dibble & Pledger, P.A.
Ronald E. Pledger, Washington, N.C. - License No. 011654 (NC-PE)

Stewart Acoustical Consultants
John Gagliardi, PhD, Raleigh, N.C.
Section 4 - Team Organization and Qualifications

This section highlights the roles, responsibilities, and experience of our key project team members.

E. Leo Green, Jr., P.L.S., P.E.  
License No. 4495 & L-2225 (NC), 6481 (SC), 15447 (VA)  
Managing Member, Project Manager

B.S. Civil Engineering - North Carolina State University, 1962

Mr. Green has over forty (50) years of progressive experience in the water and wastewater field. He has participated in the planning, design, construction management and start-up of numerous water supply/water treatment and wastewater collection/disposal/treatment projects throughout North Carolina during this long period.

As Chief Managing Member of Green Engineering, Mr. Green has directed the firm through the planning and implementation of a multitude of regional and single service wastewater projects which conformed to the stringent standards of the U.S. Environmental Protection Agency and the North Carolina Division of Environmental Management. His leadership has helped earn the firm a solid reputation within the municipal, industrial and private sectors served by the company. Long term relationships with counties such as Wilson, Halifax, Columbus, Pasquotank, Northampton and Wake together with municipalities such as Wilson, Raleigh, Zebulon, Weldon, Hertford, Rocky Mount, and Enfield, just to name a few, have brought to fruition many successfully operating projects serving many thousands of people in rural and urban eastern North Carolina.

As a former two term member of the North Carolina Environmental Management Commission, Mr. Green has a diverse understanding of regulatory issues that impact utilities in North Carolina. His ability to navigate through complex regulatory requirements and to provide viable cost effective solutions serves as the basis of his civil engineering record.

Mr. Green's roll as Project Manager will include:  
- Project Scheduling  
- Project Team Coordination  
- Liaison between the Bertie County and Green Engineering
Section 4 - Team Organization and Qualifications

Thomas D. Dienes, P.E.
License No. 27372 (NC-PE)
Project Engineer/Designer

B.S.A.S. Civil Engineering Technology -Youngstown State University, 1993

Mr. Dienes has nineteen (19) years of progressive experience in the water and wastewater field. His experience in these fields includes all aspects of water distribution and wastewater collection and treatment system design, management, and project implementation.

As a project manager with Green Engineering, Mr. Dienes has been involved with wastewater collection and treatment plant projects and water system expansions for several units of local government. His involvement in these projects includes project design and management and liaison between project owner, contractor and the construction observer.

His work includes wastewater treatment plant design, regional collection and interceptor systems, including gravity systems, pump stations and force mains, and water distribution and sewer collection system modeling using various Bentley Systems design programs.

Mr. Dienes’ design and project management experience has been primarily with municipal and regional water and wastewater systems.

Mr. Dienes’ roll as Project Engineer/Designer will include:
- GIS Technical Data Analysis
- System Modeling
- Quality Control
Section 4 - Team Organization and Qualifications

Penny Glover  
Project Administrative Assistant

Mrs. Glover’s credentials include more than nineteen (19) years of experience in the administration of infrastructure projects, including those administered by the Community Development Block Grant Program and ARRA, NC Rural Economic Development Center, USDA-Rural Development and EDA.

In the field of planning, Mrs. Glover’s specialization embraces the analysis of comprehensive management programs for water treatment and distribution and the collection and treatment of wastewater, the review of regulatory programs and land use plans and the preparation of population projections. She has assisted in research grant programs and the preparation of applications for grant and loan funds for project construction.

Project administrative activities for which Mrs. Glover manages include development of project budgets, contract development and administration, preparation of certified tabulations, approval of contractor payment requests, processing of change orders, requisitioning and disbursing loan and grant funds, preparation of status reports, project accounting and audits.

Mrs. Glover works closely with our clients, government agencies and contractors to develop a positive relationship among all parties that will ensure successful project completion.

Mrs. Glover’s roll as Project Administrator will include:
- Final Report Preparation
Section 4 - Team Organization and Qualifications

History of Recent Green Engineering's Wastewater Projects

Town of Holden Beach – Vacuum Sewer System Station #4
Chris Clemmons, Public Works Director
(910) 842-9315

City of Wilson - Contentnea Creek Wastewater Pump Station Renovation
Barry Parks, Assistant Director of Public Services Water Resources
(252) 399-2374

City of Whiteville – Wastewater Treatment Facility
Travis Faulk, Public Works Director
(910) 642-3422

Town of Zebulon – Wastewater Treatment Facility
Chris Ray, Public Works Director
(919) 269-5285

Town of Hertford – Wastewater Treatment Facility
Pamela Hurtle, Town of Manager
(252) 426-1969

Town of Holly Springs – Wastewater Treatment Facility
Kendra Stephenson, Senior Engineer
(919) 557-3931
Affiliates

DIXON ASSOCIATES, CONSULTING ENGINEERS, INC.
6101 Crescent Knoll Drive
Raleigh, North Carolina 27614
(919) 870-7005

CONTACT: WILLIAM P. DIXON, PE, PRESIDENT

EDUCATION:
Bachelor of Science in Civil Engineering, NCSU, Raleigh, NC, 1978
Master of Civil Engineering - Structures (Major)/Geotechnical (Minor)
NCSU, Raleigh, NC, 1989

REGISTRATION: Professional Engineer - North Carolina, South Carolina, Virginia, Georgia, Maine (inactive), Florida (inactive), New York (inactive)

AFFILIATIONS:
American Society of Civil Engineers
American Concrete Institute
National Society of Professional Engineers
Professional Engineers of NC
Tau Beta Pi - NC Alpha Chapter
(Engineering Honor Society)

EXPERIENCE:

William Dixon has over thirty-five years of experience as a civil/structural consultant, primarily working on commercial, institutional, light and heavy industrial, water resources and bridge related projects. Mr. Dixon is personally involved in all aspects of design, specification, and coordination with other disciplines and field coordination/inspection of construction with all projects performed by DIXON ASSOCIATES. His experience ranges from residential design, mid-rise building design to the design of heavy industrial processing plants. Mr. Dixon has extensive experience with the design and construction administration for water and waste water treatment structures. He is familiar with all of the commonly used structural materials and construction methods. He has significant experience utilizing computer modeling and software capable of optimizing structural design. In addition, Mr. Dixon has significant experience with inspection and investigations associated with renovation and restoration studies, design and implementation.
Section 4 - Team Organization and Qualifications

PAST REPRESENTATIVE PROJECTS IN COASTAL CAROLINAS

Surf City Water Treatment Plant, Surf City, NC, Structural Consultant responsible for structural design of new treatment plant structures.

Swartz Waste Water Treatment Plant, Myrtle Beach, SC, Structural Consultant responsible for structural design of new treatment plant structures.

Vereen Waste Water Treatment Plant, Myrtle Beach, SC, Structural Consultant responsible for structural design of new treatment plant structures.

Reverse Osmosis Facility, Stumpy Point, NC, Structural Consultant responsible for structural design of new treatment plant structures.

New Water Treatment Plant, Cape Hatteras, NC, Structural Consultant responsible for design of new treatment plant structures.

Holden Beach Vacuum Pump Stations, Holden Beach, NC, Structural Consultant responsible for structural design of new submerged pump station structures.

Sullivan’s Island Wastewater Treatment Plant Upgrade, Sullivan’s Island, SC, Structural Consultant responsible for design of water containment structures for plant modifications.

Brunswick County Water Treatment Plant, Brunswick County, NC, Structural Consultant responsible for design of water containment and building structures for new water treatment plant.

Wastewater Treatment Plant Upgrade, Town of Plymouth, NC, Structural Consultant responsible for design of new treatment plant structures.

Camp SeaGull and Seafarer Wastewater Treatment Plant Upgrades, Minnesot Beach, NC, Structural Consultant responsible for design of water containment structures for plant modifications.

Reverse Osmosis Facility, Tyrrell County, NC, Structural Consultant responsible for structural design of new treatment plant structures.

Washington Water Treatment Plant Expansion, Washington, NC, Structural Consultant responsible for design of new treatment plant structures.

Wastewater Treatment Plant Modifications, New Bern, NC, Structural Consultant responsible for design of new treatment plant structures.

Onslow County Water Treatment Plants, Onslow County, NC, Structural Consultant responsible for design of water containment and building structures for two new treatment plants.
Affiliate

DIBBLE & PLEDGER, PA
222 WEST MAIN STREET
POST OFFICE BOX 1885
WASHINGTON, NORTH CAROLINA 27889

Company Contact - Ronald E. Pledger, PE

Minority or Woman Owned Business - No

Brief History of Company –

Lewis M. Dibble, PE Founded Dibble & Associates in 1968. In 1985 the Firm was incorporated in the state of North Carolina. Certificate Number C-0416 and name changed to Dibble & Pledger, P.A. As a firm, Dibble & Pledger, P.A. has 30 years of experience in mechanical, electrical, plumbing, controls and instrumentation Engineering. Dibble and Pledger has provided electrical controls and power design for numerous water and wastewater systems. The firm has worked for various clientele including the Department of Corrections, the Department of State Construction, School Planning Facilities, the Department of Defense, Industrial, Commercial, Municipal, State, Institutional, Educational, and Medical Clientele.

History with Green Engineering

Dibble and Pledger, PA has worked with Green Engineering on numerous water and wastewater plant projects as well as lift station projects for over 30 years.

Dibble and Pledger, PA has provided engineering designs for electrical Power, lighting, standby generation, and controls and Instrumentation associated with these projects. Dibble and Pledger has provided systems integration design on numerous plant projects and designs on SCADA projects throughout North Carolina. Dibble and Pledger provided electrical Engineering design on the previous Holden Beach Lift Stations.
Section 4 - Team Organization and Qualifications

Past Representative Projects in Eastern North Carolina

Fayetteville PWC – Astoria Park at Hope Mills Lift Station
City of Washington – 5th & Respass Lift Station
Town of Beaufort – Lift Station #9
City of Goldsboro – New Hope Road Lift Station
Town of Chocowinity – Bragaw Lane Transmission Lift Station
Town of Chocowinity – Fountain Powerboats Lift Station
City of New Bern – Glenburnie Lift Station
City of New Bern – Evans Mill Lift Station
Holden Beach – Vacuum Lift Stations #2, 3 & 4
Town of Richlands WWTF – Main Plant Lift Station
City of Wilson – Contentnea Lift Station
Town of Swansboro – Tiara Yachts Lift Station
Wayne County – Eureka Vacuum Pump Station
Halifax County – Highway 158 Lift Station
Town of Manteo – Bowstertown Lift Station
Town of Manteo – Cedar Bay Lift Station
Warren County – Sewer Pump Stations
Town of Williamston – Highway 17 Pump Station
Town of Chocowinity – Industrial Park Lift Station
City of Raleigh – Beaver Dam Creek Lift Station
Town of Emerald Isle – Ground Water Pump Station
City of Wilson – Longview Lift Station (Wet Pit / Dry Pit)
Section 4 - Team Organization and Qualifications

Affiliate

STEWART ACOUSTICAL CONSULTANTS
7330 Chapel Hill Road, Suite 201
Raleigh, North Carolina 27607
(919) 858-0899

CONTACT: JOHN C. GAGLIARDI, PhD

EDUCATION: Bachelor of Science in Mechanical Engineering, Marquette University 1980
Master of Science in Mechanical Engineering, Marquette University 1982
PhD, Marquette University 1987

AFFILIATIONS: Member - Acoustical Society of America Activities
Member - North Carolina Chapter - Chair 2009-11
Member – Institute of Noise Control Engineering
Member – Audio Engineering Society
Member – ASTM International American

EXPERIENCE:
John was Technical Director for Technicon Acoustics from 2002 to 2016. Technicon Acoustics is a manufacturer of acoustical materials and an ISO 17025 accredited acoustical testing laboratory. At Technicon, John led the acoustic material product development, customer noise control solutions and operation of the acoustical laboratory. John has also gained a strong foundation as an acoustical consultant, research investigator, and testing laboratory operator while at Orfield Laboratories from 1998-2002. He has extensive experience in laboratory testing of materials and a wide variety of acoustical consulting projects, including product development and teaching a course in architectural acoustics at the University of Minnesota.

ENVIRONMENTAL NOISE

John is especially well-equipped and experienced for evaluating and solving community noise impacts. An initial site evaluation can identify problems from existing noise impacting a planned usage or evaluate the difficulty of quieting planned operations. Planned usage can be evaluated for zoning or permit applications. Noise controls can be developed in the design of new facilities. A full evaluation of existing situations often requires a visit and measurements. We can develop extensive models with sound mapping using the SoundPLAN program.
OCCUPATIONAL NOISE CONTROL

Most workplace noise control is aimed at reducing the risk of hearing damage through reduced noise exposure. John assists industrial/safety engineers to identify and develop controls to meet OSHA requirements for reducing noise and noise exposure. Some employers without such problems strive to create a better atmosphere with easier communication. Our roots are in occupational noise control. The experience Stewart Acoustical Engineers has in some traditional industries of the Carolinas and Virginia far exceeds that of any other consultant. They can help clients develop and implement a cost-effective noise control program for their situation.
Organizational Chart
Green Engineering, PLLC

E. Leo Green, Jr.
Project Manager

Penny Glover
Administrative Assistant

Thomas Dienes
Project Design

Affiliates
Dixon Associates Consulting Engineering, Inc.
Dibble & Pledger, PA
and
Stewart Acoustical Consultants

Green Engineering
Support Staff
CADD, Spec Writers,
Project Administration
and
Construction Supervision
Section 5 - Project Schedule and Reporting

**Project Schedule**

Green Engineering recognizes the importance of strict adherence to project schedules. We are very proud of our track record of completing projects on time and have demonstrated this commitment to the Town of Holden Beach.

Based on our scope of work included and projecting a Notice-to-Proceed of April 8, 2019, our schedule for performance of the major tasks associated with the project are projected below:

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<tr>
<th>Activity</th>
<th>2019</th>
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<tr>
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<td>Project Start-up</td>
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**Project Reporting**

During the Design and Plan Development Phase of the Project, Green Engineering and Town Representatives will establish a schedule for periodic onsite meetings (or conference calls) to review the progress of this phase of work.

Once Construction Contracts have been awarded and, in order for the above timetable to be maintained, Green Engineering, together with Town Representatives, will develop a schedule of regular monthly progress meetings. The purpose of these meetings will be to discuss at a minimum: project schedule, adherence to permit conditions, unanticipated changes to project scope and contractor payment requests.
Vacuum Sewer System
Station #3 Upgrade
Town of Holden Beach, North Carolina
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Prepared For
Heather Finnel, Town Clerk
Town of Holden Beach
110 Rothschild Street
Holden Beach, North Carolina 28462

Prepared By
McGill Associates, P.A.
712 Village Road SW, Suite 103
Shallotte, North Carolina 28470
910.755.5872
March 8, 2019

Heather Finnell, Town Clerk
Town of Holden Beach
110 Rothschild Street
Holden Beach, North Carolina 28462

RE: Vacuum Sewer Station #3 Upgrade - Town of Holden Beach, North Carolina

Dear Ms. Finnell,

In response to the Town of Holden Beach's Request for Qualifications, McGill Associates, P.A. (McGill) is pleased to submit our Statement of Qualifications to provide professional engineering services for the Vacuum Sewer Station #3 Upgrade. We have carefully reviewed the project scope and objectives and are confident in our capabilities to provide the responsive, high-quality professional services required to successfully complete this project. Please consider the following relevant points:

- For more than 35 years, McGill has successfully completed engineering design, permitting, and construction oversight of lift station and force main projects at wastewater treatment facilities throughout North Carolina.

- McGill has compiled a highly competent team for design, permitting, and construction of the Vacuum Sewer Station #3 Upgrade project. We understand the critical steps necessary during design to plan a system and structure that meets the Town's needs, while being sensitive to budget and schedule.

- Our previous work for the Town on the Sanitary Sewer Study gives our team insight into the priorities of the Town leadership as well as the community; these priorities vary from aesthetics and construction disruption to safety and operations. We have a familiarity and understanding of these issues, given our assignment to evaluate this system.

- Your recent Station #4 upgrade project will allow us to streamline efforts, given the Town's direct involvement with the process and thorough objective review of lessons-learned during this project over the past year.

- Our local office in Shallotte is located about 11 miles from the Town of Holden Beach. This proximity enables our staff to be easily accessible to Town staff, visit job sites, and attend meetings, as needed. This also supports our cost-effective approach to achieving successful results in the shortest time possible.

- We have a history of achieving successful results within a required project schedule and we are committed to achieving the same results for Holden Beach on this project.

Our interest in this project goes beyond the professional gratification of performing excellent consulting work. We have a vested interest in serving the Town of Holden Beach, given that most of our Shallotte staff are lifelong residents of this area. We take pride in serving our local communities and helping improve the welfare of its residents. Our team would be pleased to have the opportunity to discuss our qualifications with you further. If you have any questions, please do not hesitate to contact me at 910.755.5872 or michael.norton@mcgillassociates.com.

Sincerely,

McGILL ASSOCIATES, P.A.

MICHAEL NORTON, PE
Principal / Shallotte Office Manager
Contact
Michael Norton, PE, Principal / Shallotte Office Manager
michael.norton@mcgillassociates.com

Firm History
Founded in 1984, McGill is a leading professional firm serving both public and private clients throughout the Southeast. With nine regional office locations, including Shallotte, Asheville, Cary, Hickory, Pinehurst, Smithfield, and Boone, North Carolina; Knoxville, Tennessee; and Newport News, Virginia, our firm conveniently serves a diverse clientele.

With 160 professional and support personnel, we have provided civil and electrical engineering; landscape architecture; environmental consulting; planning; and public finance services for 35 years. Our breadth of services is extensive and continuously evolving.

McGill is firmly committed to providing our clients with real-world solutions that drive innovation, sustainability, and value. Our team is equipped with the necessary resources and expertise to ensure successful results that are on time and within budget, regardless of the project’s location, size, and complexity.

Our Firm in Numbers
- **9** Offices
- **4** States Served
- **35** Years in Service
- **160** Employees
- **1984** First Year in Service

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Office Locations

Services
- Pump Stations
- Wastewater System Collection, Treatment, and Disposal
- Water Distribution System Analysis Planning and Design
- Water Treatment Plant Design
- Water System Supply, Treatment, Storage, and Distribution
- Stormwater Management
- Treatment System Efficiency Analysis
- Regulatory Compliance Evaluations
- Water Treatment Plant Start-Up Training
- Water Source Evaluation and Permitting
- Raw Water Intake Design
- Off-Stream Storage Planning and Design
- Dam and Impoundment Design
- Water Reuse Systems
- Water Storage Facility Design
- Bridge and Stream Crossings
- Booster Pump Station Design
- Instrumentation and Process Monitoring (SCADA)
- Water System Management Plans
- Water System Mapping and GIS
- Safety and Security Planning
- Emergency Response Plans
- Regional Water Planning
- Watershed Management Services
- Drought Impact Analysis
- Construction Administration and Construction Observation
- Funding and Grant Administration
Why Choose McGill

Passionate and Committed to Our Clients
The foundation of McGill’s success has been the firm’s commitment to developing long-term relationships, allowing us to work for multiple repeat clients. This philosophy is evident in our continuing relationships with clients over the past 35 years. We build client relationships on mutual trust, a thorough understanding of our clients’ needs, and confidence in our integrity and competence.

Deliver Innovative Solutions
McGill has been recognized locally, regionally, and nationally for our cutting-edge solutions. Our team is knowledgeable about the latest trends in the profession and has the expertise needed for various project sizes and complexities.

Provide Comprehensive Services
Our staff of 160 dedicated and innovative individuals serve clients across nine offices, and in four states. The range and depth of McGill’s expertise spans the total spectrum from engineering to land planning and recreation, and includes management consulting. We are committed to providing clients with comprehensive services to accomplish their project goals.

Guide Your Community
The McGill team will provide your community with expert guidance, helping you identify your challenges, understand viable solutions, and manage successful completion of your projects. Whether it is researching funding opportunities, conducting master or financial plans, or engaging and educating your citizens for engineering and land planning needs, McGill will be your trusted partner.
Project Design Approach

McGill completed a sanitary sewer system study for Holden Beach's vacuum sewer system; that study considered the vulnerability of the system to various failure scenarios, from flooding to equipment outages. Improvements and modifications were then recommended to reduce risks for system outages, employee safety, and reliability. The resulting recommendation of that report was to create significant modifications to the Town's pump stations, including the elevation of electrical equipment and vacuum pumps above the base flood elevation (BFE), with an initial focus on Pump Station #4, then to proceed with improvements on Pump Station #3.

Having completed the sewer system study, we understand the layout and operations of the Town’s vacuum sewer system, which includes vacuum service to all areas of the island, in four (4) zones, each with an associated pumping station. Each pump station, with all equipment located below grade (and well below the BFE), includes a vacuum collection tank and vacuum pumps, along with sewage transfer pumps. Two (2) of these pump stations (numbers 2 and 3) then transfer sewage to another pump station (numbers 1 and 4, respectively). Pump Stations #1 and #4 also include a submersible duplex pump system to transfer wastes to the Brunswick County collection system on the mainland. The primary challenge with these pump stations is the risk, danger, and vulnerability associated with having all of the equipment below the BFE.

Consequently, we understand that a thorough analysis and design effort need to be completed to best meet all priorities, while raising equipment above the BFE. These issues revolve around constructability, worker safety, operational conveniences, aesthetics, and maintaining operations during construction.

We understand the challenging nature of this type of project and have developed an approach to meeting the Town’s various and critical priorities, including analyzing the effectiveness of the recent improvements to Pump Station #4.

While Pump Station #3 is slightly higher than #4, the challenge in addressing flooding remains much the same. With #4 addressed (identified in our report as the most critical), Pump Station #3 is the next to be addressed. The existing station includes a 3,000-gallon vacuum collection tank, with related valves, sensors, and switches. It collects sewage from the station’s two (2) vacuum zones. Providing vacuum to the tank are two (2) 450 CFM, 25 horsepower vacuum pumps, with a series of electrical and control components connected to the skid-mounted system. The station also includes a pair (2) 10 horsepower transfer pumps located on the end of the collection tank that pump sewage to a submersible wetwell, via a force main, located at Pump Station #4. All of the above listed equipment (and associated electrical equipment and controls) are located within the below-grade concrete structure, well below the BFE.

The purpose of the proposed project is to construct a structure above the existing vacuum pump station with its main level above the BFE. On this upper level, all of the electrical equipment and controls will be housed, as well as the vacuum pump skid. Because of vacuum system characteristics, the collection tank and associated transfer pumps will remain in the lower level of the station.

During recent improvements to Pump Station #4, Alternative 2 from the McGill report (dated April 2017) was selected as the preferred method of providing flood protection and worker safety to the pumping stations. This selection provided a significant step in the pump station improvement planning process, allowing design to begin.
A number of factors must be considered during the design of this new structure, from architectural aesthetics to structural and geotechnical suitability. The new structure could architecturally match that of Pump Station #4, or could be modified to provide a unique look and feel. These critical factors must be considered early in the design process to allow efficient design to proceed. Our project team includes managers, wastewater engineers, architects, structural engineers, surveyors, civil and site designers, geotechnical engineers, and electrical engineers familiar with this type of project who possess decades of experience. The McGill design and construction procedure will allow input by Town staff and leaders, and will be sensitive to individual concerns. While our work progresses through the design, we will also be cognizant of the construction process and how to complete the project with minimal disruption to citizens and visitors. We plan to accomplish a construction staging plan and schedule that include major deliveries, concrete pours, and construction of components outside of the peak vacation season. This would also include any service changes that could cause system downtime.

We understand this project is to include the following components:

- Site survey
- Geotechnical evaluation
- Development of preliminary design options: station layout and flood protection, architectural, aesthetics, and structural
- Presentation of design options to the Town with pros and cons summary, cost analysis (capital and life cycle), and preliminary equipment selections
- Detailed design, including equipment, electrical, and architectural and structural plans (this phase of the project will include preparation of contract documents, technical specifications, and final plans)
- Permitting to include the following:
  - North Carolina Department of Environmental Quality (NCDEQ) - Division of Water Resources
  - Town of Holden Beach
  - Assist the Town with competitive bidding and contract document preparation
  - Provide construction phase services

In order to better facilitate communications and project status updates, we would utilize our standard internal monthly reporting form. This document includes overall project information related to scope and budget factors, while also outlining the work completed during the previous month and planned for the coming month.

**Detailed Design and Permitting**

After the Town and McGill have collaboratively identified the key equipment selections, layouts, architectural styling, and design parameters, our team will provide detailed design and permitting services for the project; these will include topographical surveying, geotechnical evaluation, preparation of design drawings and technical specifications, and preparation of bid documents.

Our design approach is intended to provide Town staff with multiple opportunities to review the design and provide input, with planned reviews at the 50% and 90% progress stages. Drawings and specifications will be provided at each review stage, and design review meetings with the Town staff will be scheduled and conducted. We will then submit NCDEQ regulatory permit applications for approval, along with specifications, bid documents, and other supporting material to the Town of Holden Beach for approval.
Bidding and Award

McGill will assist with competitively bidding the project by preparing complete bidding and construction document packages to include: the advertisement, instruction to bidders, bid proposal, bid bond, notice of award, standard agreements, performance bonds, payment bonds, insurance certificates, notice to proceed, general conditions, special conditions, minority business documentation, technical specifications, and project specific documents. The bidding process will be managed as we:

- Communicate activities with the Town
- Coordinate the bid advertisement
- Conduct the pre-bid conference
- Distribute bid packages to prospective bidders
- Prepare addenda (if needed)
- Conduct the bid opening
- Prepare certified bid tabulation
- Review bidder qualifications and make a recommendation for award
- Confirm contract documents and route for execution, following award

Construction Phase

During the construction phase of the project, we will conduct a preconstruction conference with the contractor and all applicable parties, and provide meeting minutes. Following the pre-construction meeting, we will review shop drawing submittals to ensure compliance with the contract documents. Our team uses an internet-based document tracking system to process and transfer items, such as shop drawings and meeting minutes, with provision for appropriate levels of access to the project participants. The remainder of our construction phase services are contract administration and field observation.

Contract administration will include coordination between the owner and the contractor, response to requests for information, review and approval of all contractor pay requests and recommendations for payment based on contractor progress and performance, change order processing, and preparation of close-out documentation. On a critical facility project, such as this, we recommend conducting regular progress meetings to coordinate issues among the stakeholders. We will conduct these meetings and provide minutes to attendees. Our services also include conducting a final walk-through inspection to verify final suitability before owner acceptance, along with verification of compliance through the one-year warranty period.

Field observation will include construction oversight to ensure conformance with project plans and specifications. McGill will also coordinate the scheduling of all necessary testing services to ensure compliance with the project specifications. This testing is furthered with pump stations, where we complete a commissioning process that includes performance testing, staff training, and securing operations and maintenance documentation. We will maintain records of any existing utilities or other site conditions that differ from those shown on the drawings and will note any variances to the new sewer improvements. These changes, along with drawing mark-ups from the contractor, will be utilized to prepare revised record drawings for the Town's use. NCDEQ requires that a certification be submitted by a licensed North Carolina professional engineer, stating that the sewer project was constructed in accordance with the approved plans and specifications. McGill has numerous professional engineers licensed in North Carolina and has ample qualified personnel capable of providing these certifications.
# Holden Beach Pump Station #3 Upgrade Project Schedule

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<th>Task</th>
<th>Duration</th>
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Team Overview

Our goal in assembling the proposed team outlined below is matching the individual and team qualifications with the expertise and experience appropriate for this project. McGill's experienced professional staff were selected for this team based on the individual's qualifications and training. Our comprehensive project team approach is particularly appropriate for projects where coordination, scheduling, and efficiency are important considerations.

Organization Chart

Availability

McGill works within strict schedules to meet project deadlines and objectives. We want to work on this important project and are prepared to adjust our work program to meet your project’s scheduling needs. We understand how important it is to stay on schedule and on budget. This proposal is intended to demonstrate that:

- We have the qualifications and expertise to plan, design, permit, and execute this project.
- We have the capability and availability to achieve the tasks outlined in our proposal, within a prescribed time frame.
- We have a proven record of success for similar previous projects.
- Our personnel and resources are accessible and our proximity to the project can facilitate timely and efficient working conditions and communication.
Michael Norton, PE  
Principal / Shallotte  
Office Manager

Michael Norton has many years of professional engineering and management experience in the public utilities industry and private consulting sector. Michael's experience allows him to successfully plan, design, and manage various projects, which have included power plant outage projects, regional electrical distribution system installations and replacements, major environmental permitting, and land use assessments, as well as commercial, residential, industrial, and municipal development activities.

Michael plans projects with consideration for the design's capacity, anticipating outcomes and focusing on sustainability. He also stresses the importance of communicating with clients and asking questions to determine the best course of action before beginning a project, as well as maintaining communication throughout the implementation stage.

Education
M.B.A., Business Administration, East Carolina University
B.S., Mechanical Engineering with Minor in Graphics Communication, North Carolina State University

Professional Registration
North Carolina Professional Engineer, #025856
South Carolina Professional Engineer, #23041

Professional Associations
National Society of Professional Engineers (NSPE)

Related Experience
- Holden Beach Sewer Study, Town of Holden Beach
- Campus Landscape Master Plan, Town of Leland
- Town Creek Park, Brunswick County
- Stormwater Management & Capital Improvement Plan, Town of Sunset Beach
- 2015 Enterprise Funded Water & Sewer Project, Brunswick County
- FY14 Water Main Design & Permitting, Brunswick County
- FY2009 - 2011 Water Service Area System Improvements, Brunswick County
- Devaun Park Water Distribution System & Sewer Modifications, Brunswick County and The Pauls Corporation

Doug Chapman, PE  
Senior Project Manager

Doug Chapman has practiced engineering in North Carolina for more than 26 years. His experience includes a wide range of public projects, including water and wastewater systems, streets and stormwater, and parks and recreation, in addition to community facilities and planning. Doug has worked in a variety of professional environments, including both public and private sector positions, which have contributed positively toward developing his capacity to solve complex problems and understand the needs of public clients. His contribution to McGill's team has proven to be an asset to our public clients. He is an innovator and a leader in infrastructure and facility planning and design. Doug has worked on numerous projects and is well-versed in public bidding requirements, project funding opportunities, and the need to include the public in projects at the appropriate time and level. He also understands the need to actively manage projects from inception to construction.

Education
B.S., Mechanical Engineering, North Carolina State University

Professional Registration
North Carolina Professional Engineer, #020622

Professional Associations
American Water Works Associations (AWWA)
Water Environment Federation (WEF)

Related Experience
- Holden Beach Sewer Study, Town of Holden Beach
- Sandy Creek Pump Station Improvements, City of Henderson
- Third Creek Wastewater Treatment Plant Influent Pump Station and Headworks, City of Statesville
- Frye Creek Lift Station Improvements, Town of Long View
- Burris Road Pump Station and Force Main Rehabilitation, City of Newton
- Wastewater Pump Station Replacement Project, Town of Drexel
Don Covil, PE  
Project Engineer

Don Covil has provided professional engineering services for a number of consulting firms in North Carolina for over 41 years. He has extensive experience in both the private and public sectors. Don has been involved in hundreds of engineering projects during his professional career, many of which were directly related to sewer and water system designs. He is intimately familiar with the planning, design, and permitting needs of such activities. Don performs engineering computations, man-hour costs, and scheduling for various projects. He has completed plans and specifications for land and site design, water and wastewater systems, stormwater, and erosion control.

Education
M.S., Biological and Agricultural Engineering, North Carolina State University
B.A., Sociology, North Carolina State University

Professional Registration
North Carolina: Professional Engineer, #009499
South Carolina: Professional Engineer, #11479

Related Experience
- Holden Beach Sewer Study, Town of Holden Beach
- Town Creek Park, Brunswick County
- 2015 Enterprise Funded Water & Sewer Project, Brunswick County
- Multiple Special Assessment District (SAD) Water Main Projects, Brunswick County
- 1984 Northwest Water Treatment Plant Transmission Project, Brunswick County
- Multiple Commercial & Residential Water Distribution System Projects, Brunswick County and New Hanover Counties
- FY14 Water Main Design & Permitting, Brunswick County
- FY2009 - 2011 Water Service Area System Improvements, Brunswick County
- Devaun Park Water Distribution System & Sewer Modifications, Brunswick County and The Pauls Corporation
- Various projects and studies in support of municipality operational needs for the Town of Sunset Beach, Town of Ocean Isle Beach, and Town of Verrnamtown

RJ Mozeley, PE  
Project Engineer

RJ Mozeley is a dedicated and talented designer who has demonstrated his acute skills on a wide range of projects, including utility coordination, wastewater collection systems, and water distribution. RJ's experience has led him to develop valuable knowledge of the intricate details of water and sewer systems, as well as how they can be rehabilitated or replaced to improve the well-being of local communities. He is a valued team member, not only for his technical and strategic expertise, but also for his knowledge and attention to detail in designing and preparing construction documents. RJ possesses a vital ability to communicate effectively in conveying technical information clearly and efficiently to staff and clients.

Education
B.S., Civil Engineering, North Carolina State University

Professional Registration
North Carolina: Professional Engineer, #037937

Professional Associations
The North Carolina Section of the American Water Works Association (NC AWWA)
The North Carolina Member Association of the Water Environment Federation (NC WEA)

Related Experience
- Holden Beach Sewer Study, Town of Holden Beach
- Sandy Creek Pump Station Improvements, City of Henderson
- Third Creek Wastewater Treatment Plant Influent Pump Station and Headworks, City of Statesville
- NC 150 Sewer Project, Catawba County
- Wastewater Pump Station Replacement Project, Town of Drexel
- Bunker Hill High School Area Wastewater Collection System and Pump Station, Catawba County
- Burris Road Pump Station and Force Main Rehabilitation, City of Newton
- Chestnut Ridge Lift Station, Town of Blowing Rock
- Realty Street Sewer, City of Lenoir
- Powell Road Sewer Replacement, City of Lenoir
- NC 18 Sewer Improvements, City of Lenoir
- Clarks Creek Wastewater Treatment Plant Planning, City of Newton
- Meadowood Sewer Replacement, City of Lenoir
David Honeycutt, PE
Project Engineer

David Honeycutt has significant experience in a wide variety of water and wastewater projects, including water and sewer line replacements, rehabilitation and extensions, pump stations, and modeling. He has a thirst for knowledge and is continuously looking for the latest technology and advances in the field.

David has been involved in all project phases from planning, scoping, design, and permitting, to construction inspection. He has experience in master planning projects for municipalities to develop a comprehensive plan that can be updated easily, as necessary. David pays excellent attention to design details, yet retains a big-picture perspective to find the best solution. He is a valued member of the firm’s design staff.

Education
B.S., Environmental Engineering, Cum Laude,
North Carolina State University

Professional Registration
North Carolina Professional Engineer, #034999

Professional Associations
The North Carolina Section of the American Water Works Association (NC AWWA)
The North Carolina Member Association of the Water Environment Federation (NC WEA)

Related Experience
- Highway 20 Sewer Replacement, Town of St. Pauls
- Lift Station 3-4, Moore County
- Wastewater Treatment Plant Relocation, Town of Robbinsville
- Third Creek and Fourth Creek Wastewater Treatment Plants, City of Statesville
- Moncure Mega-Site Sewer System Preliminary Engineering Report, City of Sanford and Chatham County
- Beaverdam Creek Outfall, Belgrade Avenue Outfall, and Lagoon Lift Station Improvements, Town of Garland
- Chatham County / City of Durham Water Interconnection, Chatham County
- Hoffman Phase I Sewer Project, Town of Hoffman

Nick Huffman, PE
Project Engineer

Nick Huffman is an experienced electrical engineer who is specifically skilled in the construction oversight of electrical systems to support wastewater treatment facilities.

He has a successful track record for delivering high-quality work on time. Nick’s experience includes design and construction administration for control valves; pump stations; SCADA systems; fire alarm systems; backup, standby, and emergency power; overhead and underground distribution lines; power substations; transmission lines; relay protection; facility power; lighting; and telecommunications. He understands the unique properties that each project entails and enjoys the challenges associated with them; challenges like these have expanded Nick’s knowledge and experience, and this keeps him looking forward to future endeavors in the electrical engineering field.

Education
B.S., Electrical Engineering,
North Carolina State University
B.S., Computer Engineering,
North Carolina State University

Professional Registration
North Carolina Professional Engineer, #036840
South Carolina Professional Engineer, #35652
Tennessee Professional Engineer, #114460
Virginia Professional Engineer, #059110

Related Experience
- Holden Beach Sewer Study, Town of Holden Beach
- NC 150 Wastewater Collection System Electrical Improvements, Catawba County
- Sewer System Improvements Phase 1, Town of Hoffman
- Bunker Hill High School Area Wastewater Collection System and Pump Station Electrical Improvements, Catawba County
- Pump Stations and Generator Improvements, City of Bessemer City
- CDBG Sewer Project (Lift Station Improvements), City of Henderson
- Sanitary Sewer System Rehabilitation CDBG I Project, Town of Red Springs
- Sanitary Sewer System Extension, Governors Island Water and Sewer District
Mike Patton
Construction Services Manager

Mike Patton has 16 years of experience with McGill, progressing from an Engineering Technician/Designer to his current role as Construction Services Manager. His experience covers a wide range of infrastructure projects, notably water and wastewater system projects for municipal clients (wastewater collection systems and water distribution systems, as well as water and wastewater treatment plant design and construction), site development, streetscapes, facilities, and parks. Mike has extensive experience with construction phase services, from field observation to construction administration and management. His role as Construction Services Manager includes directing field operations, preparing contract documents, chairing various project meetings, processing applications for payment, reviewing shop drawings, and negotiating change orders.

Education
B.S., Civil Engineering, University of North Carolina at Charlotte

Related Experience
- NC 150 Wastewater Collection System, Catawba County
- South Mills Sewer Service, Camden County
- NC 1B Sewer Improvement, City of Lenoir
- Sewer Assessment, Town of Maiden
- Powell Road Sewer Replacement, City of Lenoir
- Clarks Creek Water and Sewer Project, Town of Maiden
- 19th Street NW Sewer Replacement, Town of Long View
- Wastewater Treatment Plant Biosolids Study, Town of Valdese
- Whitnel High Service Pump Station, City of Lenoir
Holden Beach Sewer Study

Town of Holden Beach

In 2017, McGill completed a sanitary sewer system study for the Town of Holden Beach that included vulnerability assessments of system components with respect to various failure modes, including flooding from storm surge. The study also considered employee safety, emergency operations, and reducing risks of system failure. As part of this evaluation, McGill reviewed the construction and operations of neighboring systems in Sunset Beach and Oak Island, for comparison with Holden Beach.

A number of items were identified for providing system improvement, from updated GIS mapping to significant pump station improvements. Most identified issues were related to flooding, stemming from all of the pump station equipment being located below the base flood elevation (BFE). Alternatives were developed to address these issues, with pros and cons discussed, as well as opinions of probable costs developed. Through discussions with Town staff and meetings with the Town Board of Commissioners, a preferred alternative was chosen for moving forward. The preferred alternative includes construction of a structure above the BFE to house all of the station electrical equipment and the systems vacuum pumping. This measure will protect the Town’s investment in infrastructure and secure the residents and visitors utility service for the future.
Drexel Sewer Lift Station Replacement
Town of Drexel
The Town of Drexel conveys all of its wastewater to an adjoining sewer collection system that is owned and operated by the Town of Valdese; this has historically been achieved through the collection of all wastewater at the Town's abandoned wastewater treatment plant. The wastewater pump station serving the Town was constructed in the 1970s and functioned as a precast concrete can station with adjoining precast concrete wetwell. That existing pump station experienced an equipment failure in the early 2000s and both the pump gallery and generator deck were flooded with raw sewage. The precast “can” was pumped out and eventually placed back into service, but the generator would never function again. In 2012, the Town of Drexel selected McGill to prepare preliminary replacement plans and a funding application package to the North Carolina Department of Environmental Quality. The project’s design and construction phases were subsequently funded in part by the Clean Water State Revolving Fund. Following the state’s notice of intent to fund, McGill prepared the project’s engineering report and environmental information document, and eventually prepared the design plans, calculations, and specifications to replace the existing pump station with a new station. The new pump station required a new connect on to the existing influent channel, influent gravity sewers to a new 10-foot diameter precast concrete wetwell, two submersible 75-horsepower pumps, valve vault, piping, connection to the existing force main, valves, and all related appurtenances.

Wastewater Treatment Plant #1 Pump Station
Tuckasegee Water & Sewer Authority
As part of the 3.5 MGD wastewater treatment plant expansion of Wastewater Treatment Plant No. 1, McGill designed an 8.75 MGD influent wastewater pump station to convey the influent sewer flow to the expanded treatment facility.

Sandy Creek Pump Station Improvements
City of Henderson
McGill assisted the City with improvements to the Sandy Creek Lift Station. Our team helped the City become eligible for $900,000 in principal forgiveness funding and $900,000 in 0% interest loan funding from the North Carolina Clean Water SRF program. We provided survey, design, and permitting services for this project that generally included replacing existing pumps and mag drives with two (2) new 300 HP, 4 MGD (peak flow) pumps and VFDs; replacing the existing mechanical screen with a new screen and compactor system that will discharge to a dumpster; adding a flow meter and bypass pumping connection, valves, piping, and new electrical room; replacing the existing generator with new generator; and adding SCADA to allow for monitoring with the Water Reclamation Facility and related appurtenances.
Frye Creek Lift Station Improvements  
**Town of Long View**

The project included a series of equipment and piping replacements and repairs to the 1.0 GPM pump station, which is equipped with a manual bar screen, wet well, non-clog dry-pit sewer pumps with drive shaft couplings, and constant speed motors. The project consisted of general replacements and rehabilitation of equipment, including one dry-pit sewage pump (which is constructed with hardened impellers to protect it from grit), several isolation valves, and one check valve. The project also included installation of permanent bypass pumping connections. Due to the fact that the lift station collects approximately half of the Town’s sewage, the pump station could not be taken off line for more than matter of minutes, therefore, logistics planning was crucial to the project’s success.

**Beaverdam Creek Outfall, Belgrade Avenue Outfall, and Lagoon Lift Station Improvements**  
**Town of Garland**

McGill assisted with the preparation of the CDBG funding application, design engineering, and construction oversight for this project, which includes the replacement of approximately 11,000 LF of 12-inch gravity sewer interceptor, the replacement or rehabilitation of approximately 33 manholes, and the rehabilitation of an existing lift station in the Town of Garland, which were approximately 50 years old. This project will improve water quality and result in an improved standard of living. The existing lift station was abandoned after construction of a new self priming suction lift pump station with a new wetwell, electrical control panel, and SCADA telemetry system. An automatic transfer switch was also installed to work with the existing standby generator at the site.

**Yarborough Road Facility Expansion**  
**Town of Ocean Isle Beach**

In 2018, the Town of Ocean Isle Beach began planning for a facility expansion adjacent to the wastewater treatment plant on Yarborough Road. McGill provided design plans for the site development, including grading and storm water management, as well as those necessary for public sewer permitting through the County of Brunswick and State of North Carolina to establish service. Pump station and force main design and permitting have been completed and will be followed by construction phase testing and final certification in 2019.

**Ocean Isle Beach East End Sewer Modifications**  
**Town of Ocean Isle Beach**

This project involved the conversion of an existing pump station to a manhole, the design and construction of a new pump station at an alternate location due to environmental impacts and risks, the construction of approximately 720 LF of 8-inch gravity sewer from the abandoned pump station (converted to a manhole) to the new pump station, and the construction of approximately 340 LF of new 6-inch force main. McGill staff managed the design, permitting, and construction administration phases of this project, including all final certifications.

**Water System Improvements, Sewer System Improvements, and Lift Station Improvements**  
**Town of Mount Olive**

McGill assisted the Town of Mount Olive with the preparation of three (3) CDBG applications, design engineering, and construction oversight for the rehabilitation of four (4) lift stations, approximately 3,150 LF of existing water line, and approximately 1,950 LF of existing gravity sewer line. These projects were funded by approximately $2.8 million in CDBG-I funding. The four (4) lift stations were aging suction lift type pump stations with existing self priming pumps ranging in capacity from 100 GPM to 300 GPM. Rehabilitation of these stations included complete replacement of all mechanical and electrical equipment and the addition of standby generators with automatic transfer switches and SCADA system telemetry to bring them into compliance with current regulations.
TOWN OF HOLDEN BEACH

Request for Qualifications
For
VACUUM SEWER SYSTEM STATION #3 UPGRADE PROJECT

EAST COAST ENGINEERING & SURVEYING, PC
4918 MAIN STREET * PO BOX 2469
SHALLOTTE, NORTH CAROLINA 28459
910-754-8029 * 910-754-8049
www.eces.biz

MARCH 8, 2019
March 8, 2019

Ms. Heather Finnell, Town Clerk
Town of Holden Beach
110 Rothschild Street
Holden Beach, North Carolina 28462

Subject: Vacuum Sewer System Station #3 Upgrade
Town of Holden Beach, Brunswick County, North Carolina

Dear Ms. Finnell:

East Coast Engineering & Surveying, P.C. is pleased to present three (3) copies of our Response to the Town's Request for Qualifications for Survey Services, Design, Permitting, Bidding and Construction Contract Administration Services required for the subject project.

Review of the enclosed document will reveal that we offer a Project Team extremely familiar with the Town of Holden Beach and have had successful implementation of many similar previous projects. Our understanding of the project, our long-term commitment to the Town of Holden Beach, along with our past knowledge gained from working on numerous similar projects throughout the County, ensures that our Project Team can begin immediately with no learning curve requirements. The Town will receive the advantages of a local-based professional Project Team that is extremely familiar with the requirements related to this Project. The working relationship of effective communication and trust that we have developed over the years of working with Holden Beach will help assure the highest caliber project that will be delivered on time and budget.

Considering our previous experience and proximity to the project, we will respond promptly and favorably to all project challenges. The knowledge we have gained through previous experience will assure that the Town will receive timely service by the most experienced Team that both lives and works within our home County. If selected for this project, our team is ready to begin work immediately.

We again appreciate the opportunity to submit our qualifications to the Town of Holden Beach for consideration. Should you have any questions or comments, please do not hesitate in contacting us at your convenience.

Sincerely,

[Signature]

Alan C. Lewis, President
Director of Construction Management
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RESPONSE TO
REQUEST FOR QUALIFICATIONS
for
TOWN OF HOLDEN BEACH
VACUUM SEWER SYSTEM - STATION #3 UPGRADE

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   Relevant Experience
III. PROJECT TEAM
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   Christopher D. Stanley, PLS
   Robert E. Tucker, PE
   J. Christian Russell, PE
   Barry R. Guise, PE
   Jackson Starling, EI
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INTRODUCTION OF FIRM
INTRODUCTION

East Coast Engineering & Surveying, PC (East Coast) offers expertise in professional services for the Town of Holden Beach Vacuum Sewer System—Station #3 Upgrade Project. East Coast is a privately held corporation originally founded in 1996 and reorganized in early 2007 to include surveying services. We are a full service civil engineering and surveying firm which currently has eighteen employees. Our office is headquartered in Shallotte, North Carolina.

Our close proximity to the project site offers the unique capability for immediate response of officers and employees to any issue in need of attention. The majority of our firm’s engineering and surveying employees are not only residents but are natives of Brunswick County and offer a true devotion toward high quality performance in service for their community.

With well over 125 years of combined experience in the design, permitting and construction management of wastewater collection systems, our team has the knowledge and understanding of all issues required for a successful project. We have over 125 miles of wastewater collection system design, permitting and project management experience within Brunswick County. Each project has been highly successful due to the fact that our team members maintain close coordination with Staff members with the best possible attention to detail. We have an excellent record of completing projects on time and under budget with very few change orders being required during construction. We understand the importance of carefully identifying all aspects of a project prior to design. We will evaluate and recommend the potential type of system to be used based on the various parameters determined during the study and planning process. This includes, potential existing utility conflicts, access requirements, potential population projections and any future expansion capabilities of each project. As reflected in the Project Team portion of this document our team offers unmatched knowledge of the understanding and needs of our Clients.

Included within this document is the requested information regarding roles and qualifications of the key personnel which will be assigned to the project, experience on similar projects, and a project schedule including key milestones. Also included is a brief description of our project approach for the Town of Holden Beach Vacuum Sewer System—Station #3 Upgrade Project.

Our team will use the same previously successful methods that we have implemented on previous projects in order to assure budget and schedule constraints are met. As noted in the Experience on Similar Project Section of this Proposal, our previous projects have been completed on schedule and well under budget, resulting in substantial savings to our Clients.

In response to the request of why we feel that our firm should be selected for this work, we offer that our attention to detail, our unsurpassed acquisition of critical field data necessary to produce accurate designs while also reducing possibilities of expensive construction change orders, our close and prompt coordination with all involved parties and our experience and reputation in providing quality project management as a few of the reasons to select our firm. Award of this project to our firm will also demonstrate the desire to promote local businesses in the County.

Lastly, a schedule and estimate of man-hours required to complete the project are included, the project schedule and man-hour estimate maybe modified to address any desired changes that may by requested by the Town.
RELEVANT EXPERIENCE
**Historical & Recent Design Services**

East Coast Engineering & Surveying, PC takes pride in achieving client satisfaction and are dedicated to completing a project on time and under budget. As reflected on the recent project listings below, our firm has designed and managed numerous Water Distribution and Wastewater System Projects, Site Development and Park Design Projects within Brunswick County, and our team is confident that we have the expertise, knowledge and experience to get the job done.

<table>
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<tr>
<th>PROJECT NAME</th>
<th>CLIENT</th>
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<td>Brunswick County Water Distribution Systems, Sewer Design, Site Development Planning</td>
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<td>Carol Lynn Small Diameter Sewer System</td>
<td>William Pinnix, 910-253-2500</td>
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<td>Variable Grade Gravity Sewer System</td>
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<td>Force Main Design w/ connection to WWTP</td>
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<td>Rivers Edge Plantation &amp; Golf Club, LLC</td>
<td>Mark Saunders</td>
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<td>Gravity, Pressure, Force Main, Main Lift Station</td>
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<td>The Pearl Golf Course Community</td>
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<tr>
<td>Gravity, Pressure, Force Main, Main Lift Station</td>
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<td>Sea Trail Golf Club &amp; Resort Plantation</td>
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<td>Jon Mendenhall, Town Administrator</td>
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<td>Gravity, Pressure, Force Main &amp; Main Lift Station</td>
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<td>The Reserve @ Sunset Harbor</td>
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<td>Tideland Preserve</td>
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<td>Main Pump Station &amp; Force Main Design</td>
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<td>Ocean Isle West Destination Resort</td>
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<td>Gravity, Pressure, Pump Station Design</td>
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<td>Little Beach Landing Resort</td>
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<td>Gravity, Pressure, &amp; Pump Station Design</td>
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<td>Town of Sunset Beach</td>
<td>Hiram Marziano, Town Administrator</td>
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<td>Park Design, Stormwater Management &amp; Survey</td>
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<td>Town of Shallotte</td>
<td>Mimi Gaither, Town Administrator</td>
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<td>Force Main &amp; Pump Station Design</td>
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EXPERIENCE ON SIMILAR PROJECTS

Major Local Municipal & Private Projects:

- County of Brunswick
- Town of Shallotte
- Brunswick Water & Sewer H2GO
- Ocean Isle Palms
- Tideland Preserve
- The Reserve @ Sunset Harbor
- Sea Watch Subdivision
- Sea Trail Plantation
- St. James Plantation
- Brunswick Plantation
- Farmstead Plantation
- Ocean Ridge Plantation
- Winding River Plantation
- River’s Edge Plantation
- Ocean Isle West Resort
- The Pearl
- Stonecrest Development
- Little Beach Landing
- Juniper Creek Subdivision
- San Rio Ocean & River Club
- Kingfish Bay Development
- Ocean Breeze Family Campground

Totaling Over 650,000 lf of 2" - 12" Pressure Sewers & Force mains, & 4" - 12" Gravity Sewers & Lift Station Design

In addition to the above summary of previous sewer system projects, our project team experience includes the design of the Carol Lynn Subdivision Small Diameter Variable Grade Gravity Sewer System for Brunswick Regional Water and Sewer H2GO. This innovative project is the first such system to be permitted within the State of North Carolina. Our firm takes pride in the fact that we are constantly on the cutting edge of technology while exploring multiple possible solutions to every problem.

Our project team offers unmatched knowledge of the understanding and needs of Brunswick County. Our provision of complete in-house local services affords a much more efficient means to expedite design, permitting and construction of the project. Our team has extension experience in gravity sewer, pressure sewer, vacuum, forcemain and pump station design. Our experience of well-over 125 years affords Clients with knowledgeable and seasoned professionals that are extremely well versed in the implementation of new construction techniques and cost control methods necessary for the successful completion of utility projects.

Our firms proven track record is our best resource to show our ability to meet both project time and budget restraints.
SEA WATCH—Pump Station Design

East Coast Engineering & Surveying, PC provided engineering and surveying services for the design and construction of a 281,110 gpd variable speed wastewater pump station and control building to serve 943 Single-Family Residences within the Sea Watch Development located in central Brunswick County.

The Pearl—Gravity, Pressure Sewer & Pump Station Design

East Coast Engineering & Surveying, PC provided engineering and surveying services for the design and construction of over 60,000 LF of gravity sewer, pressure sewer, wastewater pump station and force main to serve a 54 Hole Golf Course, 2 Golf Club Houses, POA Facilities, 1,368 Multi-Family Units, 356 Single-Family Residences, 169 Duplex Cottages, a 50 Unit Hotel & Spa and a Commercial Area for The Pearl Mixed Use Development located in Calabash.

Kingfish Bay—Gravity, Pressure Sewer & Pump Station Design

East Coast Engineering & Surveying, PC, provided engineering and surveying services for the design and construction of over 12,000 LF of gravity sewer/pressure sewer/force main collection system and the main wastewater pump station to serve a Multi-Phase Residential Subdivision w/POA Amenity Center within Calabash, NC.

Rivers Edge—Gravity, Pressure Sewer & Pump Station Design

East Coast Engineering & Surveying, PC, provided engineering and surveying services for the design and construction of over 70,000 LF of gravity sewer/pressure sewer/force main collection system and the main wastewater pump station to serve an 18 Hole Golf Course, POA Amenity Center, Clubhouse, 786 Multi-Family Units and 511 Single-family Residences for Rivers Edge Plantation located within Shallotte, NC.

SAN RIO RIVER & BEACH CLUB—Gravity, Pressures Sewer, Force Main & Pump Station Design

East Coast Engineering & Surveying, PC provided engineering and surveying services for the design and construction of approximately 20,000 LF of pressure sewer collection system, a 32,860 gpd wastewater pump station and approximately 15,000 LF of off-site force main to serve 156 Single-family Residences within San Rio River & Beach Club located within Shallotte, NC. Since the design anticipated project build-out of over 750 dwelling units, the wastewater pump station was designed and constructed such that only larger wastewater pumps would be required to be installed within the station wet well upon future development.
East Coast Engineering & Surveying, PC has a team of professionals with unparalleled experience, knowledge and understanding of all issues required for a successful Vacuum Sewer System Station #3 Upgrade project. Mr. Alan C. Lewis, as President of East Coast Engineering & Surveying, P.C. and Director of Planning & Project Management Services, will provide quality assurance to insure the project achieves the required level of quality while conforming within budgetary constraints. He has 30 years of civil engineering, surveying and project management experience. Having served as Project Manager on numerous prior Sewer Projects, Mr. Lewis is well versed in their policies and standards.

Mr. Christopher D. Stanley, PLS is Vice-President of East Coast Engineering & Surveying, PC and Director of Surveying Services. Having served as the surveying manager for all previous municipal projects performed by ECES, Mr. Stanley is very familiar with base mapping and the field survey data required for accurate design and will serve as the Surveyor In-Charge to assist with any and all mapping and GIS Services.

Robert E. Tucker, PE, Vice-President and Director of Engineering Services with 45 years of experience will serve as Project Manager and as the Engineer of Record for any authorized work. As such, he will be responsible as the team’s liaison with the Town of Holden Beach and the State Regulatory Agencies. Mr. Tucker will be responsible for general project oversight, direct the preparation of work on wastewater flow projections, hydraulic modeling; and review the existing pump stations. Mr. Tucker, having worked for the County of Brunswick as County Engineer and the City of Cary as Director of Development Services, has a clear understanding of what is required for municipal projects.

Our support staff of design engineers, including J. Christian Russell, PE, Barry R. Guise, PE and Jackson Starling, IE, have the right combination of experience, knowledge and technical expertise to make this project a success.
OUR SPECIALTY CONSULTANTS of Edward Brunner, PE with Brunner Associates, Inc., Jim Lewis with Coastal River Engineering, PLLS, Land Management Group & ECS Carolina, LLP along with our staff of technicians, survey personnel, construction observers and administrative assistants will assure project success.

With over 150 years of combined design and construction experience, our team has unsurpassed knowledge and understanding of all issues required for the implementation of a successful Vacuum Sewer System #3 Upgrade.

BRUNNER ASSOCIATES, INC. is a local Structural Architectural Firm located in Brunswick County offering structural design, construction administration, ADA Code Compliance and architectural plans. Brunner Associates, Inc. led by Edward Brunner, PE offers a wide range of experience in fields in the public and private sector. Through total dedication to every project and attention to detail they have earned a reputation of providing quality results. With over forty-five years of experience Brunner Associates, Inc. has worked within some of the most recognizable communities in Brunswick County.

COASTAL RIVER ENGINEERING, PLLC is a local Mechanical, Electrical & Plumbing (PM&E) Firm located in Brunswick County offering architectural and structural design; construction administration, PM&E services and forensic investigation services. They offer a wide range of experience in fields in the public and private sector. Coastal River Engineering has defined innovation and integrity in its business areas by holding steadfast to core principles of long-term relationships, high-integrity dealings, and the delivery of value to customers. Their business has enjoyed repeat business from multiple clients who recognize our principles.

LAND MANAGEMENT GROUP, INC (LMG) is a full-service environmental firm comprised predominantly of soil scientist, wetland biologists and geologists. We have worked very closely with LMG for over twenty years and have successfully completed numerous environmental consulting projects within Brunswick County. LMG has provided a full range of environmental services for over 30 years and specialize in 404 wetland delineation and mapping, 404/401 permitting, groundwater hydrology, wetland mitigation strategies, water quality assessments, CAMA permitting, soil mapping assessment and compensatory mitigation projects throughout the Carolinas. Most of LMG’s core activities involve various levels of wetland/soil mapping and wetland delineations culminating in a jurisdictional determination by the US Army Corps of Engineers (USACE). LMG has demonstrated experience particularly with large-scale delineation work in challenging landscapes of the Coastal Plain.

ECS, LLC (ECS) is a diversified environmental consulting firm that has performed similar projects throughout the state of North Carolina. We have worked with ECS for over eighteen years and have successfully completed numerous quality control testing, special inspections, geotechnical engineering and environmental consulting projects in southeastern North Carolina. If required ECS will provide onsite geotechnical explorations and engineering as may be required with emphasis in groundwater issues, slope stability evaluations and problem soil sites. The firm’s laboratory is accredited by the US Army Corps of Engineers (USACE) and the NC Department of Transportation (NCDOT).
SUMMARY

Alan Lewis has provided services in both the private and public sectors spanning over 30 years with experience including planning, design, and project management for water distributions and transmission systems, construction management and project permitting for commercial and residential projects. He has extensive project experience in project management, preparing technical specifications, cost estimating, construction administration and construction inspections. He is well versed in the design, permitting, bidding and construction phase of civil engineering projects. He has extensive water and sewer system experience throughout Brunswick County. Mr. Lewis has a good working relationship with both Brunswick County Engineering and Brunswick County Public Utilities and over the past 30 years has been fortunate to assist in the design, permitting, bidding and construction management of over 800,000 LF of water mains within Brunswick County on multiple SAD and CIP and over 700,000 LF of water mains within local municipalities and local private projects.

ASSOCIATIONS

Alan’s past associations include the American Society of Civil Engineers, AWWA, SBI Rotary, SBI Chamber of Commerce, BCC Foundation and Committee of 100. He is proud to have served on the Town of Shallotte Planning Board, Brunswick County Planning Board, Cape Fear Rural Transportation Advisory Board, Brunswick County Lockwood Folly Roundtable, Camp United Methodist Church Trustees, Town of Shallotte Aldermen, Town of Shallotte Mayor Pro-Tempore and Town of Shallotte Mayor. Currently serves on the Board of Trustees for the NC School of Science & Math.

PROJECT EXPERIENCE

Ocean Isle Palms, Ocean Isle Beach, NC Project Manager/Quality Control for the construction and re-design of an off-site force main to tie the development to the Ocean Isle Beach Wastewater Treatment Plant (newly acquired by Brunswick County) and the installation of water distribution and pressure sewer system, stormwater, road infrastructure for multiple phases within the Multi-Family Residential Community within the Town of Ocean Isle Beach, North Carolina.
Sea Watch Development, Holden Beach, NC: Project Manager for the design and construction of a 281,110 gpd variable speed wastewater pump station and control building to serve 943 Single Family Residences within Coastal Brunswick County.

Brunswick Regional Water & Sewer H2GO—Quality Control Manager for the design, surveying and permitting of a force main and pump station. Project consisted of system modifications to reverse the flow from the existing pump stations to new proposed gravity interceptor and new regional pump station. Project is currently in the construction phase and will be completed in Fall of 2019.

Little Beach Landing, Ocean Isle Beach, North Carolina: Planning, design, permitting, bidding and construction services for a residential resort development on the barrier island of Ocean Isle Beach. The infrastructure consisted of water distribution, gravity and pressure sewer system, pump station, force main, storm drainage system and roadway systems. Worked closely with US Army Corps of Engineers and NC Division of Coastal Management to permit Coastal Bridge System for the residential lots on upland islands and for nature trail.

River Edge Golf Club & Plantation, Shallotte NC: Project Manager/Quality Control for the planning, design, permitting and construction of over 70,000 LF of waterline and wastewater distribution systems, stormwater, multi lift stations, road infrastructure for an 18 Hole Golf Course Community, Club House, POA Facility, 786 Multi-Family Units and 511 Single Family Residences with the Town of Shallotte.

San Rio Beach & River Club, Shallotte, NC: San Rio River & Beach Club, Shallotte, NC: Project Manager is a residential community along the Shallotte River which is located within both the Town of Shallotte and Brunswick County jurisdictions. Provided engineering and surveying services for the design and construction of approximately 20,000 LF of pressures sewer collection systems, a 32,860 gpd wastewater pump station and approximately 15,000 LF of off-site force main to serve single family residences within San Rio. Since the design anticipated project build out of over 750 dwelling units, the wastewater pump station was designed and constructed such that only larger wastewater pumps would be required to be installed within the station wet well upon future development.

Sea Trail Golf Club & Plantation, Sunset Beach, NC: Project Manager/Quality Control for the planning, design, permitting and construction of over 120,000 LF of waterline and wastewater distribution systems, stormwater, multi lift stations, road infrastructure for 54 Hole Golf Course, Club House, POA Facility, Multi-Family Units and Single Family Residences with Sunset Beach, North Carolina.

The Pearl, Calabash, NC: Project Manager/Quality Control for the planning, design, permitting and construction of over 60,000 LF of waterline and wastewater distribution systems, pump station, stormwater, multi lift stations, road infrastructure for a 54 Hole Golf Course Community, 2 Golf Club Houses, POA Facilities, 1368 Multi-Family Units and 356 Single Family Residences, 169 Duplex Cottages, 50 unit Hotel & Spa with Commercial Area within the Town of Calabash, North Carolina.

Rainwater Harvesting Project, Kigali, Rwanda: Liaison/Senior Technical Advisor for field data collection, design and construction of facilities to capture, store and deliver seasonal rainwater for non-potable water uses for an extensive 30 acre commercial project. Design included gravity collection with pump station, particle settlement within underground storage reservoir and automated pressure delivery systems.

Various Brunswick County Water System Projects & SADs: Project Manager on all projects for the design, permitting, bidding and construction services to provide potable water and fire protection to areas in Brunswick County that were lacking water service. Project consisted of 12' - 2" waterlines and Horizontal Directional Drills, with Oak Island Project assisted of a meter vault, PSV vault and over 1200 LF of C900 PPVC HDD under the Atlantic Intracoastal Waterway of which we obtained all Federal and State permitting required for Subaqueous Easements.
SUMMARY

Chris Stanley is a licensed professional land surveyor with over 26 years of experience in the surveying industry. He has extensive experience in both the private and public sectors. He has performed over 500,000 ft of route surveys associated with numerous Brunswick County CIP and SAD projects over the span of twenty-six years. He also has provide boundary, topographic, wetland, as-built, highway construction, site construction staking, subdivision development, annexation surveys, legal descriptions, title research, easement acquisition, beach monitoring and hydrographic surveys. He has performed numerous CAMA surveys and is very familiar with the permitting process. Mr. Stanley has an extensive background with Carlson and AutoCad Civil 3D Software allowing for the collection of raw field data and efficiently translate the data into then usable information necessary for Civil Engineering Design. His knowledge of what field information is required during the design phase of project is an asset from working closely with engineers and assures timely and cost efficient services.

ASSOCIATIONS

Chris currently serves as Vice-President and Director of Surveying Services for East Coast Engineering & Surveying, PC. He is one of the firm’s Principals. Chris, a native of Brunswick County, and his family reside in Ocean Isle Beach, North Carolina. He is a member of the North Carolina Society of Surveyors. Chris serves as an Adjunct Instructor at Brunswick Community College in the Surveying Program and former member of the Brunswick County Planning Board.

PROJECT EXPERIENCE

Brunswick Regional Water & Sewer H2GO—US17 Sewer Interceptor, Forecmain, & Regional Lift Station Project: Surveyor in charge of all field data acquisition, quality control and survey control, utility easements, and base mapping for overall project to areas within BRWS H2GO System. Perform route surveys along proposed gravity and forcemain routes as necessary for design. Project is currently out for bids and is scheduled to begin construction in fall of 2018.
Recent Brunswick County Waterline Improvement Projects: FY16 Water System Improvement Projects, Middle River/Smith Road Water Improvements, Oak Island Water Improvement Project, US 74/76 & Hwy 87 Water System Improvement Project, IUS74 South Water Connection Project, Brunswick County CIP Projects: (2000/01 Sea-Shore/Boonesneck, Sunset Harbor): Project Surveyor in charge of all field data acquisition, quality control and survey control for overall project to areas in Brunswick County that were lacking service. Created all base mapping used in civil design work, staking for installation of Surveyed and mapped Sub-aqueous Easement under the AIWW and Hydrographic survey of proposed AIWW crossing was required for Oak Island Project.

The Pearl: Project Surveyor in charge of boundary survey, wetland locations and mapping per USACE requirements, topographic surveys, roadway, construction staking of roadways and utilities, as-built surveys, easements, and base mapping.

Brunswick Regional Water & Sewer H2Go: Project Surveyor in charge of all field data acquisition, quality control and survey control for overall project to areas in Leland, NC consisting of utility easement surveys for waterline installation, easement locations of over 20,000 lf and location/mapping of sewer lines and services. Performed utility location work for project with Carol Lynn subdivision where first small diameter variable grade sewer system was designed.

River Edge Golf Club & Plantation, Shallotte NC: Project Surveyor in charge of boundary survey of 300 acres+ project consisting of 18 Hole Golf Course Community, Club House, POA Facility, 786 Multi-Family Units and 511 Single Family Residences. Survey scope included wetland location and mapping per USACE requirements, topographic survey of amenity areas, staking of golf course route, topographic surveys along roadways for civil design, construction staking of roadways and utilities, as-built surveys of water and sewer systems, CAMA permitting for docks, prepare recordable plats of lots for conveyance, stormwater pond restoration surveys, and hydrographic surveys to support CAMA related work.

Brierwood Golf Club, Shallotte NC: Project Surveyor in charge of boundary survey within project consisting of 18 Hole Golf Course. Survey scope included wetland location and mapping per USACE requirements, topographic survey of club house and amenity areas, as-built surveys of water and sewer systems, CAMA permitting for docks and prepare recordable plats of lots for conveyance.

Town of Sunset Beach, Sunset Beach, NC: Project Surveyor in charge of all field data acquisition and mapping of various boundary and topographic surveys to support town infrastructure expansion. Provided services related to FEMA such as Elevation Certificates and LOMA’s. Performed mapping services for annexation projects. Performed Bathymetric Surveys on Jinks Creek Feeder Canal for maintenance dredging with mapping and assist with permitting through the Division of Coastal Management.

Town of Holden Beach, Holden Beach, NC: Project Surveyor in charge of all field data acquisition and mapping of various boundary and topographic surveys to support town infrastructure expansion. Performed bathymetric surveys, including base mapping, for annual the Beach Re-nourishment Program spanning from landward toe of dune seaward to 2,500 feet off shore. Provided bathymetric surveys and mapping for their annual maintenance dredging project consisting of 20+ navigable canals, including volume calculations and topographic surveys of USACE Spoil Areas.

William Family Trust, Ocean Isle Beach, NC: Perform boundary and topographic surveys consisting of over 300 acres including work within USACE AIWW right-of-way and monitoring of erosion along Atlantic Ocean. Provided boundary and mapping services for division of estate.

Brunswick County Parks & Recreation, Brunswick County: Provide boundary and topographic surveys on 50 acre tract for public park with water access. Mapping service for civil design.
SUMMARY

Robert E. Tucker, PE has provided engineering services for the past 45 years in both the private and public sector, with experience with commercial, residential, and municipal projects. Having served as County Engineer for the County of Brunswick as well as Director of Development Services for the City of Cary, Robert has an extensive background in planning, design and construction of a variety of public works projects while employed with local government. He has extensive experience in project management, cost estimate, design, permitting, Federal and State environmental permitting, master planning, site planning, and resort development. He has experience with the design, and project management for water distributions systems, wastewater pump stations, collection systems, management and permitting, stormwater and erosion control, for both commercial and residential projects. Mr. Tucker will be involved with the engineering reports, water models and hydraulic reports and calculations for this particular project. He has a good working relationship with North Carolina Department of Energy, Minerals and Land Quality, NC Division of Coastal Management, and US Army Corps of Engineer Staff which is invaluable when working with in Coastal North Carolina.

PROFESSIONAL QUALIFICATIONS

North Carolina, Licensed Professional Engineer

PROFESSIONAL ASSOCIATIONS

Past associations include the American Society of Civil Engineers, National Society of Professional Engineers, and American Water Works Association. He has served as Chairman of the City of Southport Planning Board and currently serves as an Alderman for the City of Southport Board.

PROJECT EXPERIENCE

NC Shallotte—Smith Project, Shallotte, NC: Planning, design, permitting, bidding and construction services for a Mixed Use Commercial & Residential Development consisting of a collection of independent retail stores, services, and other commercial establishments with onsite parking. The infrastructure consisted of water distribution, gravity and pressure sewer system, pump station, force main, storm drainage system and roadway systems improvements. Currently in design and permitting phase.
Brunswick Regional Water & Sewer H2GO—US17 Sewer Interceptor, Forecmain, & Regional Lift Station Project: Quality Control Manager – for the design, surveying and permitting a force main and pump station. Project consists of system modifications to reverse the flow from existing pump stations to new proposed gravity interceptor and new regional pump station. Project is currently out for bids and construction is scheduled to begin Fall of 2018.

Brunswick Regional Water & Sewer H2GO—Ploof Road Sewer Extension Project: Project Manager responsible for planning, design and construction of a new low pressure sewer system extension. Evaluated the existing system in order to reroute flow of overburdened system to newly designed alternate system.

Ocean Isle Palms—Phase 1A & 1B: Bidding and construction services for a multi-family project for the installation of water and pressure distribution system, stormwater ponds and stormwater infiltration systems, drainage, and the design of new NCDOT turnout along Ocean Isle Beach Road SW and the Project Entrance.

The Reserve at Sunset Harbor, Brunswick County: Project Engineer for the project including Master Planning, design, permitting, bidding, and construction services for a single family residential development located within Coastal Brunswick County. Infrastructure included water distribution and pressure sewer system, pumps station, roadway design, drainage system, stormwater design using low impact reduction methods to project and minimize any impacts to environmentally sensitive areas within wetlands, obtain Division of Coastal Management CAMA Permits and US Army Corps of Engineers Permits.

Winding River Plantation Beach Club, Holden Beach: Planning, design, permitting and construction services associated with the design parking and stormwater facilities on the barrier island of Holden Beach. Address stormwater and drainage issues along the vegetative buffers and shoreline of the Atlantic Ocean. Obtain required local, and state permits including North Carolina Division of Coastal Management CAMA permits.

Miramonte Sound Subdivision, Apex, North Carolina: Planning, design, permitting, bidding and construction services for a 275 Unit Mixed Single and Multi-Family Residential Resort Development in Apex, North Carolina. The infrastructure consisted of water distribution, gravity and pressure sewer system, pump station, force main, storm drainage system and roadway systems. Worked closely with US Army Corps of Engineers, NC Environment of Natural Resources to permit an extensive stormwater treatment facility.

City of Cary—Director of Development Services: Responsible for project management, planning cost analysis, and construction for a variety of development projects for the City of Cary as well as the day to day supervision of the City Engineering Department, Planning Department, Development Review and Building Inspections. Responsible for numerous transportation, stormwater and utility projects including expansion of two wastewater treatment plants—Cary/Apex Wastewater Treatment Plan and raw water pump station and transmission main.

County of Brunswick—County Engineer: Responsible for planning, design and construction of a variety of public works project throughout the County. Projects including sanitary landfill and transfer station permitting, SAD administration, water and sewer and supervision of County Capital Improvement Projects.
Academic Background
- B.S.— Petroleum Engineering
- Mississippi State University

Years of Experience
- 20

Fields of Specialization
- Water Distribution Systems
- Wastewater Collection Systems
- Force Main Design
- Pump Station Design
- Stormwater & Erosion Control
- Commercial Planning
- Residential Planning
- Permitting
- Contract Administration
- Construction Administration & Inspection
- Cost Analysis
- Environmental Assessments
- Scaggs Method—Calculations
- Water & Sewer CADD

SUMMARY
J. Christian (Chris) Russell has provided engineering services for the past 20 years in both the private and public sector, with experience with commercial, residential, and municipal projects. He has an extensive background in project management, cost estimate, design, permitting, Federal and State environmental permitting, master planning, site planning, and resort development. He has experience with the design, and project management for water distributions systems, wastewater pump stations, collection systems, management and permitting, stormwater and erosion control, for both commercial and residential projects. His experience includes construction inspection, the design and preparation of state mining packages for North Carolina Land Quality—Mining Section approval. Well versed with all CADD Systems and is involved with the day to day training and scheduling regarding the computer training and coordination of the drafting departments. Mr. Russell will be involved with the engineering reports, water models and hydraulic reports and calculations for this particular project. He has a good working relationship with North Carolina Department of Energy, Minerals and Land Quality, NC Division of Coastal Management, and US Army Corps of Engineer Staff which is invaluable when working with in Coastal North Carolina.

PROFESSIONAL QUALIFICATIONS
- North Carolina, Licensed Professional Engineer
- South Carolina, Licensed Professional Engineer
- Illinois, Licensed Professional Engineer

PROJECT EXPERIENCE
Kingfish Bay Subdivision, Brunswick County: Project Manager including Master Planning, design, permitting, bidding, and construction services for a residential development located within Coastal Brunswick County. Infrastructure included water distribution, forcemain, gravity and pressure sewer system, roadway design, drainage system, stormwater design using low impact reduction methods to project and minimize any impacts to environmentally sensitive areas within wetlands, obtain Coastal Management CAMA Permits and US Army Corps of Engineers Permits.
NC Shallotte—Smith Project, Shallotte, NC: Planning, design, permitting, bidding and construction services for a Mixed Use Commercial & Residential Development consisting of a collection of independent retail stores, services, and other commercial establishments with onsite parking. The infrastructure consisted of water distribution, gravity and pressure sewer system, pump station, force main, storm drainage system and roadway systems improvements. Currently in design and permitting phase.

The Reserve at Sunset Harbor, North Carolina: Project Engineer for the project including Master Planning, design, permitting, bidding, and construction services for a single family residential development located within Coastal Brunswick County. Infrastructure included water distribution and pressure sewer system, pumps station, roadway design, drainage system, stormwater design using low impact reduction methods to project and minimize any impacts to environmentally sensitive areas within wetlands, obtain Division of Coastal Management CAMA Permits and US Army Corps of Engineers Permits.

Little Beach Landing, Ocean Isle Beach, NC: Planning, design, permitting, bidding and construction services for a residential resort development on the barrier island of Ocean Isle Beach. The infrastructure consisted of water distribution, gravity and pressure sewer system, pump station, force main, storm drainage system and roadway systems. Worked closely with US Army Corps of Engineers and NC Division of Coastal Management to permit Coastal Bridge System for the residential lots on upland islands and for nature trail.

Oak Island Water Improvements, Brunswick County: Project Manager for design, permitting, bidding and construction services for new interconnection and second feed to the Town of Oak Island. Project consisted of 2750 LF of 12" C900 DR18 PVC waterline, Meter Vault, PSV Vault and over 1200 LF of C900 FPVC HDD under the Atlantic Intracoastal Waterway. All Federal and State Permitting required for Subaqueous Easement under the AIWW.

The Pearl, Calabash, North Carolina: Project Manager/Quality Control for the planning, design, permitting and construction of over 60,000 LF of waterline and wastewater distribution systems, stormwater, multi lift stations, road infrastructure for a 54 Hole Golf Course Community, 2 Golf Club Houses, POA Facilities, 1368 Multi-Family Units and 356 Single Family Residences, 169 Duplex Cottages, 50 unit Hotel & Spa with Commercial Area within the Town of Calabash, North Carolina.

Brunswick Regional Water & Sewer H2GO—2013/14 Water System Improvement Project: Project Manager for design, permitting, bidding and construction services to provide potable water and fire protection to areas in BRW&S service area that were lacking water service. Project consisted of 4,000LF of 6" and 600 of 2" waterline. Project was completed on schedule and on budget.

River Edge Golf Club & Plantation, Shallotte NC: Design Engineer for the design, permitting and construction of waterline and wastewater distribution systems for both gravity and pressure sewer systems, stormwater, multi lift stations, and road infrastructure for an Multi Family Golf Course Community in Shallotte. Provided water management evaluations, erosion and sediment control practices and hydraulic modeling.
SUMMARY

Barry R. Guise, PE has nearly 50 years of experience in the field of civil engineering, serving both the public and private sectors. Most of his experience has been in the private sector providing design and management on numerous major projects in the Delaware Valley. They included Interstate Highway Projects, transportation projects for PADOT, NJDOT, DELDOT, MDDOT, NJ Turnpike, PA Turnpike, Garden State Parkway, SEPTA Transportation Authority, Delaware River Port Authority, Port Authority of NY & NJ, Philadelphia Division of Aviation, and many other high profile projects including prisons, postal facilities, courthouses and major park projects including Baltimore Inner Harbor, Penn’s Landing and Camden Waterfront Park.

PROFESSIONAL QUALIFICATIONS

• North Carolina, Licensed Professional Engineer

PROJECT EXPERIENCE

Before recently joining East Coast Engineering and Surveying, Barry worked as Project Manager for the Public Utilities Department of Brunswick County for over 10 years, where he oversaw the design and construction of nearly 90 million dollars of water and sewer projects. He is very familiar with the water and sewer system and the way design projects are designed and managed for construction. A list of watermain transmission projects are as follows:

• Second Water Main Feed to Sunset Beach
• Second Water Main Feed to Oak Island from St. James
• Several Enterprise Funded Water and Sewer Main Extension Projects
• New Water Tank in Shallotte Park
• Raising Rampage Water Tank at Boat Plant in Navassa
• Expansion of Northwest Water Treatment Facility (Two Different Times)
• Sunset Harbor Water Main Extension
• Construction of the Field Operations Center for Public Utilities
• Additional Storage Facilities at the Field Operations Center
• Emergency Repairs of Sinkhole Collapse at Kings Bluff Intake Facility
Ocean Isle Palms—Phase 1A & 1B:

Project Manager – Sewer Projects – Consultant & Contractor

Oak Island Force Main Phase I and II

Oak Island Re-pump Station

West Regional Water Reclamation Facility Expansion

Dispersal Site at International Paper and Mercer Mill sites

Northeast Wastewater Treatment Plant Facility Expansion

Ocean Isle Wastewater Treatment Plant Improvements and In-Plant Pump Station and Force Main

Carolina Shores Wastewater Treatment Plant Improvements, In-Plant Pump Station and Force Main

Sea Trail In-Plant pump Station and Force Main
Jackson D. Starling, EI will primarily provide support in the production of construction plans, specifications and preparation of required modeling. He will be involved with the engineering reports, water models, hydraulic reports and calculations for infrastructure project. With a background in environmental engineering and biological sciences he is well versed with stormwater and wetland impacts, stormwater modeling, and stream geomorphology and stormwater infiltration using low impact reduction methods to minimize any impacts to environmentally sensitive areas with our coastal shorelines. He will be involved with any CAMA Permitting that may be required. He has background with CADD Systems and having worked in the surveying field has the knowledge of what field information is required during the design phase of the project. He has a good working relationship with North Carolina Department of Energy, Minerals and Land Quality, NC Division of Coastal Management, and US Army Corps of Engineer Staff which is invaluable when working with in Coastal North Carolina.

Edward “Earl” Tharp
Construction Observer

Edward Earl Tharp will primarily provide Construction Observation for this project. Mr. Tharp brings more than 47 years of construction management experience to our team. He has extensive project experience in project management, cost estimating, construction administration and construction observation/inspection. He is well versed in the permitting, bidding and the construction phase of engineering projects. He has a good working relationship with Brunswick County Officials. He holds the following certifications: National Asphalt Pavement Association (NAPA), Carolina Asphalt Pavement Association (CAPA), NC Stormwater Erosion Control, Certified Competent Person Trenching & Grading Excavation—OSHA Certified, Qualifier for Licensing Board Hwy. & Grading, Public Utilities, Water & Sewer Certified.

Fields of Specialization
- Construction Administration
- Cost Analysis
- Construction Inspection/Observations
- Stormwater & Erosion Control
- Water Distribution Systems
- Force Main Installation
- Pump Station Construction
- Environmental Assessments
PROJECT
UNDERSTANDING & APPROACH
Project Understanding

Comprehensive Method:
Our team will rely on its multi-disciplined members to effectively address all phases of the Holden Beach Vacuum Pump Station #3 Improvements in Holden Beach, North Carolina. The team’s Engineers, Surveyors and Consultants are highly qualified in working with waste water system designs and in developing projects from conceptual needs assessments through construction implementation.

Project Management:
A solid program management plan allows for efficient project execution. Our project team has developed an excellent reputation for project management in their numerous years of working with private and municipal Clients. As in past assignments, we will strive to achieve completion of the following project objectives:

- On schedule
- Within budget
- At the desired performance/technology level
- Effective and efficient use of all resources
- Full acceptance by customer

Project Approach
As with all of our projects, we will meet with Town of Holden Beach Public Utilities Staff to establish objectives, goals, submission expectations and time schedules prior to beginning work.

The Scope of Work provided will serve as the guide for key project activities. Effective communications will be a top priority throughout each of the following project phases to ensure objectives are satisfied.

The Town of Holden Beach has provided an initial scope of services in their Request for Proposal (RFP). The provided scope of services is attached and hereby included by reference. East Coast Engineering & Surveying, P.C. (ECES) personnel has conducted a field visit to the site in order to gain a better understanding of the existing conditions. The project will consist of the construction of a new multistory building with vacuum pumping equipment designed to prevent operations impacts from flooding. To the maximum extent possible, all electrical equipment will be located on the second story platform above the 100 year FEMA designated flood level. We anticipate the building would be a two story steel frame structure with concrete floors. Architecturally we anticipate the exterior of the building would be compatible with neighboring residential properties.

It is our understanding that the Town is proposing this project to prevent future pump station flooding problems. We would accumulate as-built drawings from the Town for its existing pump station and site plan.

We will prepare an initial project report identifying with specificity the anticipated improvement to be designed and constructed and will meet with the Town staff to identify preferred equipment and finishes. We will attend site and permit meetings with regulators, and prepare permit applications as may be required for the Army Corps, NCDEQ 401 and the Buffer Permitting Branch, and the NCDEQ Wastewater Unit.

After preliminary design is completed, as part of our design protocol, all project elements are given consideration not only to construction cost, but also includes the anticipated project schedule, permitting requirements, anticipated easement costs and long term operation and maintenance costs.
SURVEY & FIELD DATA COLLECTION: ECES will perform an updated boundary and topographic survey of the site for use in the design of the improvements. We will assist with any easement surveys or acquisitions that may be required.

Our design will include all necessary information in plan and technical specification form. ECES will provide Town Staff copies of the preliminary design plans which will clearly indicate any the anticipated construction elements of the project. Town Staff will subsequently submit written comments on the preliminary design plans to our firm so that we can resolve any comments.

DESIGN DOCUMENTS: Once the Staff comments have been incorporated into the preliminary plans, ECES will prepare all required final design drawings, details, and specifications required to secure all necessary approvals from the regulatory agencies having jurisdiction. Upon approval of the final design plans by the Town, we will make submittals to each regulatory agency for review and approval which include, but are not limited to, NCDOT Encroachments, U.S. Army Corps of Engineers Permits and/or Notifications, NCDER-DWQ Wetland Permits, NCDEQ Wastewater Unit including the Engineer’s Project Report, NCDER Erosion & Sediment Control Permit and the NCDER Stormwater Exemption Permit. We will prepare all required permit applications for the Town’s execution and will coordinate with all agencies to secure approvals/permits.

Our project team will offer a high level of attention and commitment given by all members, just as we have during all of our previous projects. We are extremely knowledgeable of the sequence of activities that must occur from project initiation through completion. Members of our team have previously delivered many successful water and wastewater projects for Brunswick County and other municipalities, as demonstrated in our attached summary of experience.

Members of our firm and Town Staff will determine the approach that will both secure the best possible construction bids while meeting all critical project deadlines. Upon completion of the final design, including resolution of all Staff comments, a final opinion of probable cost will be prepared and provided.

PERMITTING: We will prepare all permit applications and supporting documentation needed to construct the project, including but not limited to those permits or approvals from the regulatory agencies discussed above. We will resolve any regulatory comments in consultation with Staff and will secure all required permits. Payment of regulatory agency application/review fees will be as agreed between Town and our firm.

CONSTRUCTION ADMINISTRATION: ECES will assist in advertising for competitive construction bids. We are familiar with current requirements for obtaining bids on publicly funded work and policy requirements. We will be responsible for drawings and Project Manual distribution during the construction bidding process. If deemed necessary, we will conduct a Pre-Bid Conference to answer any bidder questions regarding the plans and specifications, issue any required explanations and/or addendum(s), and evaluate substitutions.
CONSTRUCTION OBSERVATION: We will be responsible for conducting the construction bid opening and will tabulate the bids in accordance with the Town's Purchasing Requirements and the State of North Carolina Procurement Standards and prepare the Letter of Recommendation of Award for the Board of Commissioners approval. We will be responsible for conducting the pre-construction conference and all progress meetings during construction. During the construction process, we will answer any technical questions related to the work. We will perform limited construction observations necessary for the Project Engineer of Record to certify to the appropriate agencies the construction upon satisfactory completion of the work.

We understand that the project is to be bid in one construction contract. If requested, we will pre-qualify all bidding contractors using the State Construction Office qualification methods or other procedures approved by Town Staff. Pre-qualification could include pre-qualification request, public advertisement, receipt of pre-qualification packages, evaluations, recommendations to Town, validation of recommendations and attendance at any review hearings.

Figure 7.1 Alternative 2 Proposed Pump Station Section

During the construction phase of the project, we will answer any technical questions that the Town, the selected Contractor or involved Regulatory Agencies may have as related to the project. We will coordinate with the Town Staff, evaluate all test reports, review construction observation reports, ensure compliance to the Project Manual, prepare conformed documents, conduct a pre-construction meeting, conduct monthly progress meetings, perform appropriate construction observations and document all findings, review Contractor shop drawing submittals, review the construction schedule, review Requests for Information, issue clarifications and interpretations of the Project Manual, prepare change orders and work change directives, develop punch lists, review maintenance and operating manuals, guarantees and bonds, and conduct substantial and final walk-through inspections with Town Staff. We will review and make recommendation for monthly requests for payment by the Contractor and forward to the Town.

PROJECT CLOSURE: We will verify and prepare Record Drawings in both hard copy and digital AutoCad .dwg and .pdf formats and provide required Engineering Certifications to the appropriate State Regulatory Agencies.

We will conduct follow up inspections of the work within 30 days of the expiration of the contractor's warranty and will prepare a detailed summary of any work determined to be defective. We will assist Town Staff and the Contractor to ensure that any required corrective work is accomplished in accordance with the Project Manual.

Our project team offers a high level of attention and commitment and are extremely knowledgeable of the sequence of activities that must occur from project initiation through successful project completion.
PROJECT SCHEDULE
Project Schedule

As noted in our Project Approach, schedule and budget goals represent two of the five key objectives we strive to achieve in all projects. Our team has proven its success in meeting workload and budget constraints for projects of this nature. We have strong depth and experience in our engineering and surveying support staff to handle this project.

Firm’s Ability to Meet Budget

East Coast Engineering & Surveying, PC is aware of our Client’s concerns about costs. Our project team realizes the importance of schedule compliance and cost control, having personal interest in these matters as Brunswick County residents and taxpayers. As members of our community we feel obligated to ensure all measures are taken to achieve favorable outcomes. Schedule and budget updates are provided, with modifications to be made only as recommended or approved by Town of Holden Beach Representatives. As owners, members of the project team and key project personnel have the flexibility and motivation to adjust daily work schedules as needed to adhere to any project constraint.

Our project team focuses on cost control measures during all project phases, including during construction phase activities. The quality of our designs aid in clear understanding of construction documents that help produce meaningful bids, reduce errors and minimize construction risks. All of which help to lower construction cost to minimum levels. Initial cost estimates are developed for probable comparisons.

“The quality of our designs will aid in clear understanding of construction documents that help produce meaningful bids, reduce errors and minimize construction risks.”

“As members of our community we feel obligated to ensure all measures are taken to achieve favorable outcomes.”

Firm’s Workload

East Coast is available to begin work immediately. We are currently working on several projects at this time, but none of these projects would interfere with our ability to fulfill our requirements under this contract. We have no pending projects that would impact the project team’s ability to allocate the required resources for the successful completion of this project. We are accustomed to performing with tight schedules and are prepared to begin work with a strong and experienced support staff.

Our Quality Control and Project Manager will be responsible for insuring that the scheduled needs are identified and understood by the project team. The schedule as set forth in this document may be modified based on information obtained from or requested by Town of Holden Beach staff. Schedule updates will be provided with modifications made only as recommended or approved by Town Representatives. East Coast Engineering & Surveying, PC know what it takes to get the job done and are committed to the Town of Holden as to the successful completion of all of our projects.

Assuming a notice to proceed date of mid April 1, 2019, a summary of project milestones, required tasks and an estimation of man hours required to complete this project is provided on the following pages.

“East Coast Engineering & Surveying, PC know what it takes to get the job done and are committed to successful completion of all our projects.”

“...strong depth in engineering and surveying staff support”
## Proposed Schedule

**Month/Year**

**Week Number**

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East Coast Engineering and Surveying, P.C.  
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