



**Request for Qualifications
Town of Pittsboro, NC
Wastewater Force Main to City of Sanford Big Buffalo Creek WWTP**

ENGINEERING DESIGN SERVICES

March 28, 2016

PURPOSE AND BACKGROUND:

The Town of Pittsboro, NC (<http://www.pittsboronc.gov>) requires Engineering Design Services by a qualified Engineering Firm licensed to do business in the State of North Carolina. A request for qualifications (RFQ) is hereby submitted for interested firms to respond to.

The Town of Pittsboro is in the planning phase of expanding its wastewater treatment capacity from 0.75 MGD to 2.75 MGD. As described as the Preferred Alternative in the Preliminary Engineering Report (PER), the Town is planning to make improvements to its 39 year old WWTP while remaining at 0.75 MGD and design and construct a new pump station at the WWTP and associated force main for pumping up to 2 MGD of wastewater to the City of Sanford Big Buffalo Creek Wastewater Treatment Facility (WWTP). The Permit Number at the WWTP is NC0020354 from NCDEQ to discharge up to 1.249 MGD into Robeson Creek, at the existing outfall. The Town also has obtained a Conjunctive Reclaimed Water System Permit, Permit Number WQ0024838 to treat and pump up to 300,000 gallons per day of conjunctive reclaimed water.

The force main project will be located in Chatham and Lee Counties. The new pump station is planned to be located at the WWTP in Pittsboro. The design of new screening, grit control and the new pump station will be performed by the engineering firm selected to design the WWTP improvements. The force main design will begin at the new pump station. See the PER and Environmental Information Document (EID) for the preliminary pump station layout and the force main route to the Big Buffalo WWTP in Sanford.

The anticipated design and professional services shall include, but not be limited to the following major work items:

1. Design of approximately 14 miles of force main and appurtenances to the City of Sanford Big Buffalo WWTP
 - a. Hydraulic modeling
 - b. Confirmation of most feasible route alignment
 - c. Easement and Right of Way investigations and preparation
 - d. Develop and submit EIS (if required)
 - e. Conduct land survey and geotechnical work as required
 - f. Construction Plans and Specifications development
 - g. Design coordination with Town of Pittsboro and City of Sanford staff

2. General Design Notes:
 - a. Force main location would be along the 15-501 NC DOT Right of Way. A portion of this proposed alignment is within a controlled access Right of Way.
 - b. NC Department of Transportation coordination concerning the proposed Right of Way alignment and permitting
 - c. Four stream crossings requiring directional drilling
 - d. Five bore and jack road crossings
 - e. One railroad crossing
 - f. Air release manholes
 - g. Environmental Permitting (EIS or other)
 - h. Facilitate regular design and project stakeholder meetings
 - i. Prepare 30%, 60% and 90% drawings and cost estimates for review

3. Additional services may include; preparation of permit application documents, preparation of Plans and Specifications for submittal to the NC Department of Environmental Quality, Division of Water Infrastructure and other required regulatory agencies, preparation of bid documents and bidder selection process, construction contract administration, construction inspection, force main start-up and testing, other services as deemed required by the Town.

A Preliminary Engineering Report (PER) has been completed and delivered to the NC Division of Environmental Quality. The PER includes WWTP improvements and a 2 MGD force main to Sanford. The 2 MGD force main project will be designed under a separate but parallel RFQ process. The PER determined that an improvements to the WWTP (remaining at 0.75MGD treatment capacity), coupled with a 2 MGD raw sewer force main to the City of Sanford Big Buffalo WWTP as the most viable and cost-effective alternative.

BACKGROUND INFORMATION:

1. Location: Town of Pittsboro, Chatham County
2. Present Population: approximately 4,100
3. Number of Water Customers: 1,918
4. Number of Sanitary Sewer Customers: 1,647
5. Sanitary Sewer System (when applicable):
 - a. Collection Mains: 153,014 linear feet
 - b. Number of Lift Stations: 6
 - c. Treatment Process: Activated sludge, extended aeration, clarification, up flow deep bed sand filtration, UV disinfection, and aerobic digestion for Class B biosolids land application.

Current Condition - The Pittsboro Wastewater Treatment plant was originally constructed in 1977 followed by upgrades in 1988 and 2010. The influent channel, influent wet well, and aeration basins #1 are from the original construction date. In 1988 an additional aeration basin, clarifiers, filters, mechanical bar screen, and UV system were added. In 2010, EQ basins and a new UV system were added. The original concrete structures are showing signs of deterioration (aeration basins, junction boxes) as well as the steel and mechanical structures (clarifiers, sweep arms, air lifts, etc.). The EQ basins and UV system are in good condition. Also, in 2011 the mechanical bar screen was rebuilt, and in 2013 a new generator installed for the entire plant emergency power needs.

Liquid Treatment Train - The raw wastewater enters the WWTP, (100% domestic), at the influent channel and is screened with a mechanical bar screen. The wastewater gravity flows to the influent wet well supplying water to the influent pumps for delivery to the plant, as well as EQ

pumps for delivery to the EQ basins. The water enters the treatment train via a splitter box providing equal flow to two parallel biological and clarification units. Excess peak flow is diverted to the EQ basins for storage and returned to the plant supplementing diurnal flow. The clarified water from both units is chemically treated for phosphorus removal and gravity flows to a three cell filtration unit followed by UV disinfection. The treated effluent is then either pumped to the 3M manufacturing facility as reclaimed water, or receives post cascade aeration and discharged to Robeson Creek.

Solids Treatment Train- Biological solids are removed from the plant on a daily basis via the WAS pumps, treated with polymer, and thickened with a rotary drum thickener. The solids are stored in two aerobic digesters until land applied.

Average Daily Flow (ADF)

The influent flow to the WWTP in 2015 was an average daily flow of .522 MGD. This reflects a steady increase from the 2013 average of .467 and 2014 of 0.515 MGD respectively. In addition to increased development, an excessive amount of wet weather flows contribute to the collection system.

The Town of Pittsboro has a permitted total discharge of 3.22MGD. The current treatment plant is designed to treat up to 0.75MGD. There is no planned expansion at the current location at this time, however, the plant may be permitted to treat and discharge up to 1.249MGD at outfall #001, Robeson Creek. If this were to occur, the balance of 1.971MGD remains for future expansion and discharge to outfall #002, Haw River.

The effluent limits page(s) are found in the Appendix reflecting current (0.75MGD), expansion capability to 1.249MGD, and future (1.971MGD) permitted flow to Haw River.

Existing Studies for evaluation (see website):

1. Environmental Impact Statement – Proposed WWTP and Discharge into Robeson Creek and Haw River, January 26, 2010
2. Wastewater Alternatives Evaluation, August 8, 2012
3. Chatham Park Planned Development District Master Plan – Approved June 9, 2014
4. 2011 Water and Sewer Planning Up-date
5. Planning Report – Sewer Collection System Master Plan, 2007
6. Wet Weather Flow Improvements Project – August 2009
7. WWTP Operational Effectiveness Analysis Report, June 2008
8. PER Addendum to: Reclaimed Water Transmission and Storage Facility, November 2006
9. PER for WWTP Improvements and 2.0 MGD Design force main to City of Sanford Big Buffalo Creek WWTP, February, 2016.

SCOPE OF WORK:

The Scope of Work will be as outlined in the Agreement for Engineering Services. Interaction and input from Town staff and other stakeholders will be required during the design and construction process. Stakeholder interviews and/or meetings will include Town staff and elected officials, Chatham County, Lee County, City of Sanford, and the local economic development community.

ESTIMATED DESIGN PROJECT SCHEDULE:

Although the schedule has not been fully determined, the Town desires to move expeditiously with this project.

- ✓ May 30, 2016 –RFQ's due to Town
- ✓ July 15, 2016 – Selection committee reviews RFQ's and makes final recommendation or conducts interviews
- ✓ August, 2016 – Interviews and selection and recommendation to the Town Board of Commissioners (BOC)
- ✓ September/October, 2016 – Contract negotiations with selected engineer (alternative if necessary), contract execution and issuance of Notice to Proceed
- ✓ July, 2017– Force Main design substantially complete, documents submitted to NCDEQ

RFQ CONTACT PERSON(S):

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Town Engineer
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SUBMITTAL OF QUALIFICATIONS:

Qualifications must be submitted to the Town Engineer by 5:00 p.m. on May 30, 2016, at 635 East Street or mailed to: PO Box 759, Pittsboro, NC 27312. The packet shall be placed in a sealed envelope marked clearly, "*Response to RFQ for Sanford Force Main Design.*"

EVALUATION CRITERIA:

All responses will be evaluated on the following:

1. Project Approach Outline and Proposed Schedule
2. Technical Team Qualifications and relevant experience
3. Experience with this type and scale of project
4. Recommendations and references of previous clients
5. Experience in working with NCDOT and local and state permitting and funding agencies
6. Experience in working with innovative technologies
7. Experience with NCDEQ, Division of Water Infrastructure document submittal

RFQ SUBMITTALS:

RFQ's shall be bound documents, double-sided, with font text size no smaller than 11. Total number of pages (not including binder cover and back page) submitted shall not exceed 25.

SELECTION PROCESS:

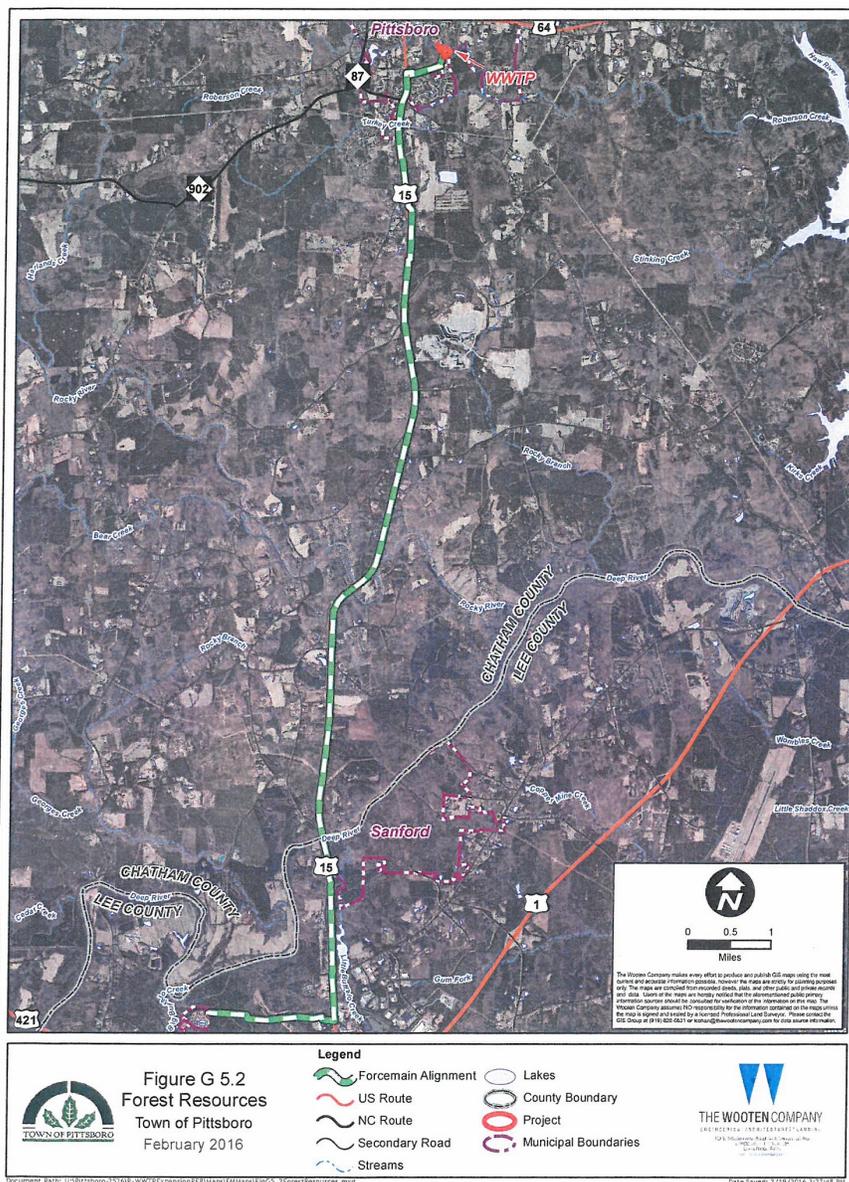
Out of the qualifications received by the Town of Pittsboro, a firm may be selected for final consideration or interviews may be conducted in order for the selection committee to ask

questions of each candidate and evaluate their responses. The engineering firm and engineer under consideration will be notified of the time, date, and location of these interviews (if required).

RESPONSIBILITIES OF THE TOWN OF PITTSBORO:

1. Make available to the firm all associated existing studies, reports, and other available data pertinent to the assignment via the Town website (Engineering Department). Obtain or authorize the Engineer to obtain or provide additional reports and data as required, and furnish to Engineer services of others as required for the performance of Engineer's services.
2. The Town of Pittsboro will bear all costs related to its responsibilities described herein.

PRELIMINARY ALIGNMENT TO BIG BUFFALO CREEK WWPT:



END OF REQUEST FOR QUALIFICATIONS