Projects

Client: Town of Enfield

Project: Whitaker Street Sewer Extensions (2004 CDBG Project)

Project Description: Provide all surveying, engineering and administration services for the design, permitting and construction of one (1) 250 GPM Wastewater Pumping Station with Stand-by power (generator with automatic transfer switch), 1,000 linear feet of 6-inch diameter force main and 2,600 linear feet of 8-inch diameter gravity sewer with appurtenances to serve a recently annexed area of the Town of Enfield, Halifax County, North Carolina.

Project Cost: $344,794.00

Client: Town of Enfield

Project: Martin Luther King Jr. Avenue Pump Station Replacement (2004 CDBG Project)

Project Description: Provide all surveying, engineering and administration services for the design, permitting and construction of the complete replacement of an existing dilapidated wastewater pumping station with a new 350 GPM Wastewater Pumping Station with Stand-by power (generator with automatic transfer switch) and 700 linear feet of 6-inch ductile iron force main along Martin Luther King Jr. Avenue in the Town of Enfield, Halifax County, North Carolina.

Project Cost: $185,000.00

Client: Town of Sharpsburg

Project: Water System Improvements

Project Description: Provide all surveying, engineering and administration services for the design, permitting and construction of one (1) 250,000 Gallon Elevated Water Storage Tank, the blasting and painting of one (1) existing 75,000 Gallon Elevated Water Storage Tank and the installation of 29,400 linear feet of 6-inch through 12-inch diameter water mains, 24 fire hydrants and 94 water service reconnections to serve the Town of Sharpsburg, Wilson County, North Carolina.

Project Cost: $1,622,000.00
Client: Town of Sims

Project: Water System Distribution Improvements

Project Description: Provide all surveying, engineering and administration services for the design, permitting and construction of 15,000 linear feet of 6-inch through 8-inch PVC Water Main, 19 Fire Hydrants and 85 Water Service Reconnections for the Town of Sharpsburg, Wilson County, North Carolina.

Project Cost: $305,477.50

Client: Town of Enfield

Project: Bass Lane Revitalization (2003 CDBG Project)

Project Description: Provide all surveying, engineering and administration services for the design, construction and revitalization, upgrade and resurface the existing roadway to a uniform 20 foot wide paved section, 400 linear feet of 15-inch storm drain, 800 linear feet of 6-inch PVC water main, removal of 750 linear feet of 8-inch clay sewer line and replace with 750 feet of 8-inch PVC sanitary sewer line for the Bass Lane area in the Town of Enfield, Halifax County, North Carolina.

Project Cost: $144,454.00

Client: Town of Spring Hope


Project Description: Provide all surveying, engineering and administration services for the design, construction and revitalization of 1,000 linear feet of roadway, 1,000 linear feet of 6-inch diameter PVC water main, 1,000 linear feet of 8-inch diameter gravity sanitary sewer (remove and replace) and 1,150 linear feet of 15-inch thru 30-inch storm drainage for the Ash Street area in the Town of Spring Hope, Nash County, North Carolina.

Project Cost: $217,800.00

Client: Town of Sharpsburg

Project: Water and Sewer Extensions

CDBG 97-C-0352

Project Description: Provide all surveying, engineering and administration services for the design and construction of
4,245 linear feet of 4-inch diameter force main, 5,280 linear feet of 8-inch diameter gravity sanitary sewer, 7,000 linear feet of 6-inch and 8-inch water main and one (1) 100 GPM wastewater pumping station to provide water and sewer service to 75 residential users located along County Line Road in the Town of Sharpsburg, Nash County, North Carolina.

Project Cost: $526,240.00

Client: Town of Weldon

Project: Mid-Town Revitalization and Maple and Poplar Streets

CDBG 94-C-8402

Project Description: Provide all surveying, engineering and administration services for the design and construction of 1,870 linear feet of 8-inch diameter gravity sanitary sewer and 2,980 linear feet of 6-inch and 8-inch diameter water main to serve 39 residential users in the Mid-Town Community and along Maple and Poplar Streets in Weldon, Halifax County, North Carolina.

Project Cost: $236,033.50

Client: Town of Weldon

Project: Coastal Lumber Sewer Extension - CDBG 98-E-0517

Project Description: Provide all surveying, engineering and administration services for the design and construction of 2,250 linear feet of 4-inch diameter force main, 3,800 linear feet of 8-inch diameter gravity sanitary sewer and one (1) 80 GPM wastewater pumping station to provide sewer service to Coastal Lumber Company and 22 residential users located along Elm Street Extension and Green Street in South Weldon, Halifax County, North Carolina.

Project Cost: $296,400.00

Client: Town of Swansboro

Project: Halls Creek Interceptor Sewer Project

Project Description: Halls Creek Interceptor Sewer Project was designed to redirect 100% of the Town of Swansboroâ€™s wastewater flow to one central location prior to being pumped to the Townâ€™s WWTP. Project infrastructure included 13,250 linear feet (LF) of 12-inch â€“ 18-inch gravity sewer, 3,500 linear feet (LF) of 12-inch direct bury force main, 2,700 linear feet (LF) of 12â€ HDPE directional bore force main, one (1) 1,400 GPM VFD wastewater pumping station with standby power, two (2) pump station upgrades (float driver on/off to VFD with stand-by power) and the abandonment of three wastewater pumping stations. Green Engineeringâ€™s responsibilities included project planning, PER, obtain funding (USDA-R40, Environmental Assessment, design, permitting, easement plat and deed preparation for 31 parcel crossings, construction administration and observation, project start-up and as-built drawing preparation.
Project Cost: $3,200,000.00

Client: City of Wilson

Project: Upper Toisnot Swamp Interceptor Sewer

Project Description: Upper Toisnot Swamp Interceptor Sewer was designed to obtain two goals: to provide gravity sanitary sewer to a heavily populated area served by several wastewater pumping stations and to extend gravity sanitary sewer to an unsewered area within the Town’s ETJ. Project infrastructure included 12,500 linear feet (LF) 16-inch DI gravity sanitary sewer and the abandonment of two (2) wastewater pumping stations. Green Engineering’s responsibilities included project planning, design, permitting, easement plat and deed preparation for 25 parcel crossings, project bid and award, construction administration and observation and as-built drawing preparation.

Project Cost: $1,000,000.00

Client: Wilson County

Project: Springfield School Utility Improvements Project

Project Description: Springfield School Utility Improvements Project was designed to provide Springfield School with sanitary sewer service. Project infrastructure included 18,000 linear feet of 8-inch & 16-inch gravity sewer, one (1) wastewater pumping station and 12,500 linear feet of 6-inch and 8-inch force main. Green Engineering’s responsibilities included project planning, design, permitting, easement plat and deed preparation for 18 parcel crossings, project bid and award, construction administration and observation, as-built drawing preparation and pump station startup.

Project Cost: $1,700,000.00

Client: Town of Zebulon

Project: Westside Sewer Improvements Project

Project Description: Westside Sewer Improvements Project was designed to provide gravity sanitary sewer service to an unsewered basin on the west side of the Town of Zebulon. Project infrastructure included 5,000 linear feet (LF) of 16-inch diameter DI gravity sewer, one (1) 1,350 GPM VFD wastewater pumping station with stand-by power, 3,500 linear feet (LF) 8-inch and 12-inch force main and the abandonment of two (2) pump stations. Green Engineering’s responsibilities included project planning, design, permitting, easement plat and deed preparation for 11 parcel crossings, project bid award, construction administration and observation and as-built administration and observation and as-built drawing preparation.
Project Cost: $800,000.00

Client: City of Wilson

Project: Upper and Lower Toisnot Swamp Sanitary Sewer Extension Project

Project Description: Upper and Lower Toisnot Swamp Sanitary Sewer Extension Project was designed to parallel an existing undersized outfall line, adding capacity to the system, and to serve a densely populated unsewered area in the upper Toisnot basin. Project infrastructure included 5,600 linear feet (LF) of 15-inch gravity sewer, 12,540 linear feet (LF) of 24-inch gravity sewer, one (1) 540 GPM wastewater pumping station with stand-by power and 6,200 linear feet (LF) 8-inch force main. Green Engineering’s responsibilities included project planning, design, permitting, easement plat and deed preparation for 31 parcel crossings, construction administration and observation and as-built drawing preparation.

Project Cost: $1,351,000.00

Reclaimed Water System Improvements (2005)

City of Wilson, North Carolina

Project Cost: $1,195,530.00

Design Engineer and Project Administrator for the City of Wilson’s Reclaimed Water System Improvements consisting of approximately 14,100 linear feet of 12-inch and 16-inch diameter reclaimed water mains and one (1) 1,000,000 gallon elevated reclaimed water storage tank to serve VF Jeanswear, an industry that currently uses 450,000 gallons of water per day in the manufacturing of stone washed jeans. These improvements have also made reclaimed water available for lawn irrigation at commercial businesses and the City of Wilson’s Operation Center. The City of Wilson, in addition to lawn irrigation, will use the reclaimed water to wash City owned and operated vehicles and equipment. The reclaimed water mains were located strategically in order that future extensions can be readily made to nearby industrialized areas. The long-term goal of Wilson’s Reclaimed Water System is to divert as much discharge as possible from the nutrient sensitive waters of Contentnea Creek and the Neuse River into the reclaimed water system.

MLK Wastewater Pumping Station Replacement (2006)

Town of Enfield, North Carolina

Project Cost: $231,224.00

Design Engineer and Project Administrator for the MLK Wastewater Pumping Station Replacement including demolition and retrofit of the existing pumps, motors and electrical equipment to a 350 GPM above ground self-priming station with stand-by power. This project also included the installation of 650 linear feet of 6-inch diameter force main along Martin Luther King, Jr. Avenue to support the capacity of the new system. There were numerous constraints on this project including overall cost, size of the existing property and conflicts with existing utilities. The Owner, the Contractor, and the Engineer all cooperated to give the Town the best overall product, a reliable system with increased capacity that can now serve the Town for years to come.
Wastewater Interceptor Improvements (2006)

Town of Swansboro, North Carolina

Project Cost: $2,795,531.00

Design Engineer and Project Administrator for Wastewater Interceptor Improvements consisting of 13,400 linear feet of twelve-inch diameter sanitary sewer, 6,100 linear feet of six through twelve-inch diameter force main, one (1) new wastewater pumping facility on Hammocks Beach Road (SR 1511) and two (2) existing pump station retrofits, one at Caspers Marina and one at Shore Drive, to increase capacity at those two stations. Upon completion of the proposed improvements, the Town greatly increased their service capacity while also taking three (3) existing pump stations offline by extending gravity sewer to their former service locations.

Wastewater Treatment Plant and Disposal System (2008)

Town of Swansboro, North Carolina

Design Engineer and Project Administrator for the Wastewater System Improvements for the Town of Swansboro consisting of a WWTP expansion to 0.60 MGD and spray irrigation disposal system.

Project Cost: $8,134,000.00

Barden Street Pump Station Retrofit (2006)

City of Jacksonville, North Carolina

Design Engineer and Project Administrator for the design, construction and replacement of an existing wastewater pumping station. The new station is designed to maximize the flow in the existing 10" force main. Variable Frequency Drives (VFD's) will be used to control the pumps and an onsite generator will be utilized for emergency backup power. The generator on the existing station is being relocated to another wastewater pumping station currently without emergency backup power.

Project Cost: $500,000.00


City of Wilson, North Carolina

Design Engineer and Project Administrator for construction of approximately 13,000 LF of 15" Dia. gravity sanitary sewer and one (1) pump station with services and appurtenances to serve the Upper Toisnot Swamp Area.
Wastewater Interceptor Improvements (2004)
Town of Swansboro, North Carolina

Design Engineer and Project Administrator for the Wastewater Interceptor Improvements for the Town of Swansboro consisting of 13,000 LF of 12" Dia. sanitary sewer, 6,000 LF 10" and 12" Dia. force main, one (1) new 1,100 GPM raw sewage pumping station and retrofit to two (2) existing raw sewage pumping stations as an upgrade to the Town's collection system.

Project Cost: $2,636,000.00

County of Halifax, North Carolina

Design Engineer and Project Administrator for the 0.150 MGD Pretreatment Facility for Resers™ Fine Foods, manufacturer of a variety of commercial foods products.

Project Cost: $2,978,497.00

Town of Hertford, North Carolina

Design Engineer and Project Administrator for water and sewer improvements to serve a new industrial park. Improvements included 9,300 LF of water mains, 4,800 LF of force mains, 5,000 LF of gravity sewers, and two (2) wastewater pumping stations.

Project Cost: $970,305.00

Wastewater System Improvements “Stantonsburg Road/Longview Drive Pump Station” (2002)
City of Wilson, North Carolina

Design Engineer and Project Administrator for the addition of a mechanical bar screen at the existing Stantonsburg and Longview Wastewater Pumping Stations.

Project Cost: $436,000.00

Goldsboro Phase X “Water and Sewer Improvements (1999)

City of Goldsboro, North Carolina

Design Engineer and Project Administrator for the Water and Sewer Improvements to serve the City of Goldsboro’s Phase X Annexation including approximately 17,500 LF of 8" and 12" Sanitary Sewer, two (2) Wastewater Pumping Stations and 5,000 LF of Water Main.

Project Cost: $1,953,775.00

Client: Town of Zebulon

Project: 2006 Street Improvements Project (Powell Bill)

Project Description: Provide all surveying, engineering construction administration and observation services for the designing, construction, upgrades and resurfacing of portions of West Sycamore Street, Gordon Street, Church Street, West Horton Street and Wakefield Street that included approximately 16,000 square yards of asphalt resurfacing and over 30 grade adjustments to manhole covers and water valve boxes.

Project Cost: $171,117.50

Client: Town of Zebulon

Project: 2005 Downtown Revitalization and Street/Sidewalk Improvements

Project Description: Provide all surveying, engineering, construction administration and observation services for the revitalization of three (3) downtown city blocks (sidewalks with brick pavers and planter boxes, curb and gutter with street resurfacing), street and parking lot resurfacing and approximately 4,000 square yards (1,000 linear feet) on concrete sidewalk improvements / additions including handicap access ramps.
Project Cost: $842,450.90

Client: City of Whiteville

Project: Ward Street Drainage and Roadway Improvements

Project Description: Provide all surveying, administration and observation services for the design and construction of drainage and roadway improvements to the Ward Street area including 1,650 linear feet of new curb and gutter, 1,700 square yards of stone base and asphalt paving and 1,000 linear feet of drainage ditch excavation with associated erosion control measures.

Project Cost: $152,882.00

Client: City of Wilson

Project: 2003 Downtown Revitalization Nash Street Phases V and VI

Project Description: Provide all engineering, administrative and observation services for the design and construction of two (2) downtown city clocks including decorative sidewalk pavers and planters, curb and gutter and street replacement, storm drainage improvements, replacement of water mains and sewer lines and relocation of all above ground utilities underground.

Project Cost: $533,360.00

Client: Town of Enfield

Project: Bass Lane Revitalization (2003 CDBG Project)

Project Description: Provide all surveying, engineering and administration services for the design, construction and revitalization, upgrade and resurface the existing roadway to a uniform 20 foot wide paved section, 400 linear feet of 15-inch storm drain, 800 linear feet of 6-inch PVC water main, removal of 750 linear feet of 8-inch clay sewer line and replace with 750 feet of 8-inch PVC sanitary sewer line for the Bass Lane area in the Town of Enfield, Halifax County, North Carolina.

Project Cost: $144,454.00

Client: Town of Spring Hope

Project Description: Provide all surveying, engineering and administration services for the design, construction and revitalization of 1,000 linear feet of roadway, 1,000 linear feet of 6-inch diameter PVC water main, 1,000 linear feet of 8-inch diameter gravity sanitary sewer (remove and replace) and 1,150 linear feet of 15-inch thru 30-inch storm drainage for the Ash Street area in the Town of Spring Hope, Nash County, North Carolina.

Project Cost: $217,800.00

Wastewater Treatment Plant Performance Evaluation

Town of Manteo, North Carolina (2005)

Green Engineering performed a detailed evaluation of the Town of Manteo’s Wastewater Treatment Facility that included: (1) treatment plant performance; (2) operating personnel; (3) testing and sampling program; (4) costs and budgets for O&M; and (5) operational problems.

An audit of Manteo’s Wastewater Treatment Plant was performed to evaluate its wastewater system. The evaluation included (1) a determination of the status of the wastewater treatment plant’s current NPDES permit requirements; (2) a table top Inflow/infiltration (I/I) analysis, based on available records rather than conducting field investigations; (3) an evaluation of the physical condition of plant structures and equipment to determine the plant’s ability to meet the requirements of the discharge permit; and (4) an analysis of the performance of the treatment facility at current and ultimate design conditions.

Utility Consolidation Evaluation


In May of 2003, the Harnett County Department of Public Utilities made an offer to the Town of Erwin to consolidate the Town’s water and sewer system with the County’s.

To fully evaluate Harnett County’s offer to the Town of Erwin, Green Engineering performed an inventory of the Town’s water and sewer facilities, projected future system demands and necessary system upgrades, prepared a 20-year capital improvement plan complete with cost estimates, and performed a financial analysis of the existing and future utility systems including water and sewer rates, fees, and charges together with future project financing and budgeting.

Utley Creek WWTP Upgrade


Green Engineering, in a joint venture with Davis-Martin-Powell & Associates, designed upgrades of the Town of Holly Springs Utley Creek Water Reclamation Facility that will upgrade the plant from 1.75 MGD to 6 MGD. Work included 20-
year population and flow projections, rate analyses, and the evaluation of the existing treatment facilities and proposed treatment processes. Design of the facility is complete and is scheduled to bid in September 2007.

Wastewater Facility Upgrades

In 2003, an existing gunite equalization basin on the site of the City of Whiteville’s WWTP failed, compromising the treatment capacity of the plant. The original plant, constructed in the 1970’s received little improvements over the years and required an extensive upgrade of the facility. Preliminary engineering of these upgrades began in 2003 and by the end of 2005 the design was complete. Green Engineering was instrumental in securing $8.45 million of the $11 million project budget in loans and grants. Work included 20-year population and flow projections, rate analyses, and the evaluation of the existing treatment facilities and proposed treatment processes. Construction of the facility is scheduled to be complete in August 2008.