State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

INSTRUCTIONS FOR FORM: PSFMGSA 10/99

(PUMP STATIONS, FORCE MAINS, AND GRAVITY SEWERS)

The Division of Water Quality will not accept this application unless all the instructions are followed. Plans and specifications must be prepared in accordance with 15A NCAC 2H .0200, Gravity Sewer Minimum Design Criteria, and good engineering practices. Failure to submit all of the required items will lead to additional processing and review time for the permit application.

For more information, visit our web site at: h2o.enr.state.nc.us/ndpu/

A. **Application Form** (All Application Packages):

- ✓ Submit one original and one copy of the completed and appropriately executed application form. The instructions (Pages 1 and 2 of 6) do not need to be submitted. Any changes made to this form will result in the application being returned. The Division of Water Quality (Division) will only accept application packages that have been fully completed with all applicable items are addressed.
- ✓ The project name should be consistent with the project name on the plans, specifications, flow acceptance letters, Operational Agreements, Certificates of Public Convenience and Necessity, etc.
- ✓ If this project involves a modification of an existing permit, submit one copy of the existing permit.

B. **Attachment** (All Application Packages):

- ✓ Submit the completed and properly executed Form WSCA 10/99 for each watershed within the project location.

C. **Application Fee** (All Application Packages):

- ✓ Submit a check in the amount of $400 made payable to: North Carolina Department of Environment and Natural Resources (NCDENR).

D. **Cover Letter** (All Application Packages):

- ✓ Submit a cover letter, which lists all items and attachments included in the application package as well as a brief project description.
- ✓ If necessary for clarity, include attachments to the application form. Such attachments will be considered part of the application package and should be numbered to correspond to the section to which they refer.

E. **Detailed Plans and Specifications** (All Application Packages):

- ✓ Submit two sets of detailed plans and specifications signed, sealed, and dated by a NC Professional Engineer. Specifications for standard equipment may only be omitted for municipalities with approved standard specifications, but use of the standard specifications must be noted on each sheet of the plans.
- ✓ Plans must include the following minimum items: a general location map, plan and profile views of the sewer extension as well as the proximity of the sewer extension to other utilities and natural features, and detail drawings of all items pertinent to the sewer extension and pump station. Depict minimum separations required in 15A NCAC 2H .0219(i)(2)(G) on the plans, and note the use of ferrous pipe material with joints equivalent to water main standards if minimum separations are not met. Minimum cover over sewer extensions in accordance with 15A NCAC 2H .0219(i)(2)(H) must also be shown clearly on the plans.
- ✓ Specifications must include, at a minimum, the following for all items pertinent to both the sewer extension and the pump station: quality of construction testing procedures to ensure the integrity of the final product in accordance with 15A NCAC 2H .0205(d)(1)(B), including leakage and pressure testing for the sewer extension. Specifications must require a maximum infiltration rate of 100 gallons per day per inch of pipe diameter per mile of gravity pipe installed in accordance with 15A NCAC 2H .0219(i)(2)(D), and cross connection control for any hydrant conveying potable water to a pump station site.
- ✓ Plans and specifications must not be labeled with preliminary phrases (e.g., FOR REVIEW ONLY, NOT FOR CONSTRUCTION, etc.) that indicate that they are anything other than final plans and specifications. However, the plans and specifications may be labeled with the phrase: FINAL DESIGN - NOT RELEASED FOR CONSTRUCTION.

F. **Engineering Calculations** (All Application Packages):

- ✓ Submit two copies of all design calculations that have been signed, sealed, and dated by a NC Professional Engineer.
- ✓ Calculations must include the following minimum items: friction/total dynamic head calculations and system curve analysis (with one pump running, two pumps running, etc.); pump selection information including pump curves, manufacturer's information, and recommended installation guidelines; pump station cycle times and pump run times; minimum velocities in the sewer extension in accordance with 15A NCAC 2H .0219(i)(2)(B); and flotation calculations for the pump station.

G. **Environmental Assessments** (May be Required – See 15A NCAC 1C .0100):

- ✓ Submit one copy of the Findings of No Significant Impact (FONSI) or Environmental Impact Statement (EIS). Also, include information on any mitigating factor(s) from the Environmental Assessment (EA) that impact the construction of the subject sewers. An EA may also be required for private systems if any public funds are used for the construction of the subject sewer.

H. **Certificates of Public Convenience and Necessity** (Required only if "Public Utility" Checked in Item II.3.):

- ✓ Submit two copies of the Certificate of Public Convenience and Necessity, which demonstrates that the public utility is authorized to hold the utility franchise for the area to be served by the sewer extension.
- ✓ If a Certificate of Public Convenience and Necessity has not been issued, provide two copies of a letter from the NC Utilities Commission's Public Staff that states that an application for a franchise has been received, that the service area is contiguous to an existing franchised area, and/or that franchise approval is expected.

I. **Operational Agreements** (Required only if "Homeowners' Association/Developer" Checked in Item II.3.):

- ✓ Submit one original and one copy of a properly executed operational agreement.
- ✓ If applicant is a homeowners' association, use Form HOA 08/99, and submit the following information: articles of incorporation, bylaws, and current annual budget.
- ✓ If applicant is a developer, use Form DEV 08/99.

J. **Flow Acceptance Letters** (Required only if the owner of the Downstream Sewer or WWTF is (are) different from the Applicant):

- ✓ Submit two copies of a flow acceptance letter from the owners(s) of the downstream sewers and WWTF.
- ✓ Flow acceptance letters must contain the following minimum information: applicant and project name, amount of flow accepted, and name and permit number of the receiving sewers/WWTF. The flow acceptance must not expire prior to permit issuance and must be dated less than a year prior to the application date. Intergovernmental agreements or other contracts will not be accepted in lieu of a project-specific flow acceptance letter.

K. **Downstream Sewer Evaluations** (All Application Packages):

- ✓ For connection to a gravity sewer, submit an evaluation of the gravity sewer based on peak flow from proposed project and peak flows already tributary to the existing gravity sewer. Provide calculations and detail how existing peak flows were determined.
- ✓ For connection to a pump station, submit an evaluation of the existing pump station to pump peak flow from proposed project and peak flows already tributary to the existing pump station. Provide calculations and detail how existing peak flows were determined.
- ✓ For connection to a force main, provide an evaluation of the existing force main based on peak flows from proposed project and peak flows already tributary to the existing force main. In addition, evaluate the ability of each pump station tributary to the existing force main to pump against additional head created by greater flows through the force main. Evaluation may include alternate designs such as telemetry to coordinate pumping between pump stations (provided sufficient storage is available). Also, include an evaluation of the discharge point of the existing force main as described above.

L. **Reliability** (All Application Packages):

- ✓ If the pump station is to be supplied by a dual electrical source/feed, submit the following minimum information: a letter from the power supplier acknowledging that the pump station site will be supplied by two electrical sources.
- ✓ If an on-site (stand-by) generator is proposed for installation at the pump station, ensure that the plans and specifications detail the generator, the automatic transfer switch, and how these items interact with the pump station instrumentation/controls.
- ✓ If a portable (emergency) generator is proposed to fulfill power reliability requirements at the pump station, ensure that the plans and specifications detail the generator quick-connect receptacle, the manual transfer switch, and the telemetry provided as well as how this telemetry interacts with the pump station instrumentation and controls. In addition, submit a contingency plan which details the number of portable generators that the applicant has available for use at the proposed pump station, the number of other items these portable generators are expected to serve, and verification that the portable generators may be moved between items in a way that prevents any sanitary sewer overflows. The plan must also detail procedures for contacting personnel, the number of personnel available to respond to a power outage, and the predicted response time.
- ✓ If 15A NCAC 2H .0219(h)(3)(D) is intended to fulfill the power reliability requirement, ensure that the plans and specifications detail the storage time available above the high-water alarm as well as how a telemetry device will interact with the pump station instrumentation and control, and submit at least three years of power outage data from the power supplier for the electrical source from which the pump station will be supplied.

THE COMPLETED APPLICATION PACKAGE, INCLUDING ALL SUPPORTING INFORMATION AND MATERIALS, SHOULD BE SENT TO THE FOLLOWING ADDRESS:

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY
NON-DISCHARGE PERMITTING UNIT

By U.S. Postal Service:
1617 MAIL SERVICE CENTER
RALEIGH, NORTH CAROLINA 27699-1617

By Courier/Special Delivery:
512 NORTH SALISBURY STREET, SUITE 1219
RALEIGH, NORTH CAROLINA 27604

TELEPHONE NUMBER: (919) 733-5083

State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality

PUMP STATIONS, FORCE MAINS, AND GRAVITY SEWERS

(THIS FORM MAY BE PHOTOCOPIED FOR USE AS AN ORIGINAL)

Application Number: _____ (to be completed by DWQ)

I. GENERAL INFORMATION:

1. Applicant's name (name of the municipality, corporation, individual, etc.): _____
   Greenville Utilities Commission
2. Owner's or signing official's name and title (15A NCAC 2H .0206(b)): _____
3. Name and complete address of applicant: Greenville Utilities Commission
   PO Box 1847
   City: Greenville State: NC Zip: 27835-1847
   Telephone number: (252) 551-1551 Facsimile number: (252) 551-1598
4. Project name (name of the subdivision, facility or establishment, etc.): _____
5. County where project is located: Pitt
6. Fee submitted: $ _____ (**See Instruction C.**)
7. Name and complete address of engineering firm: _____
   City: _____ State: _____ Zip: _____
   Telephone number: (_____) _____ Facsimile number: (_____) _____
8. Name and affiliation of contact person who can answer questions about application: _____

II. PERMIT INFORMATION:

1. Project is: _____ new; _____ modification
2. If this application is being submitted as a result of a modification to an existing permit, provide:
   existing permit number _____ and the issuance date _____
3. Applicant is: X public (**See Instruction G**; skip to item II.4.); _____ private
   If private, units (lots, townhomes, etc.) are: _____ leased (Skip to item II.4.); _____ sold
   If sold, facilities owned by a: _____ public utility (**See Instruction H.**);
   _____ homeowners' association/developer (**See Instruction I.**)
4. If project disturbs more than one acre, provide date when an erosion and sedimentation control plan was submitted to the Division of Land Resources for approval: _____
5. If project includes any stream or wetland crossings, provide date when Nationwide 12 or 404 permit was submitted for approval: _____
6. Provide buffers used to maintain compliance with any applicable river basin rules in 15A NCAC 2B .0200 (e.g., Neuse River basin buffer rules): _____

III. INFORMATION ON WASTEWATER:

1. Please provide a one- or two-word description specifying the origin of the wastewater (school, subdivision, hospital, commercial facility, industry, apartments, condominiums, etc.): _____

2. Volume of wastewater generated by this project: _____ gallons per day
3. Explanation of how wastewater flow was determined (15A NCAC 2H .0219(l)): _____
4. Nature of wastewater: _____ % Domestic/Commercial; _____ % Industrial;
   _____ % Other waste - specify: _____
5. If wastewater is industrial in nature:
   a. Level of pretreatment that has been provided to ensure protection of the receiving collection system and wastewater treatment facility: _____
   b. If a pretreatment permit is required, has one been issued? _____ Yes; _____ No. If yes, please attach a copy of the pretreatment permit. If no, provide date application was submitted: _____

IV. DESIGN INFORMATION:

1. Brief project description: _____
2. Owner and name of wastewater treatment facility (WWTF) receiving wastewater (**See Instruction J.**): Greenville Utilities Commission
3. WWTF permit number: NC0023931
4. List the owner(s) of any intermediate sewers if different from applicant or owner of WWTF (**See Instruction J.**): _____
5. Permit number(s) for sewers immediately downstream: _____
6. Pipe diameter of sewers immediately downstream: _____
7. Engineering evaluation of downstream sewers' ability to accept the wastewater from this project (**See Instruction K.**) is provided on page _____ of the calculations.
8. Summary of GRAVITY SEWER to be permitted:

Diameter (inches)	**Length (linear feet)**

9. Does the subject gravity sewer collection system comply with the Gravity Sewer Minimum Design Criteria and 15A NCAC 2H .0200? _____ Yes; _____ No. If no, please identify criteria and explain: _____

V. PUMP STATION INFORMATION (Complete Page 5 of 6 for each pump station included in this project.)

1. Pump station number or name: _____
2. In accordance with 15A NCAC 2H .0219(h)(3), describe the measures that are being implemented to prevent impacts on downslope surface waters should a power failure occur at this pump station (**See Instruction L.**):

   _____
3. Design flow of the pump station: _____ million gallons per day
4. Operational point(s) of the pump(s): _____ gallons per minute at _____ feet total dynamic head (TDH)
5. Number of pumps provided (15A NCAC 2H .0219(h)(2)): _____
6. Number of pumping cycles at average daily flow (15A NCAC 2H .0219(h)(2)): _____ cycles per hour
7. For extended travel times (greater than 24 hours) or if appropriate pumping cycles are not met, describe odor and corrosion control measures taken: _____

   _____
8. Provide the location of each design element in the specifications and/or engineering plans:

Design Element	**Sheet Number of the Plans**	**Page Number in the Specifications**
Alternate Power Source:		
Portable Generator (telemetry and receptacle required)		
On-Site Generator (automatic transfer switch required)		
Wet Well Vented with Screen		
Fillets in Wet Well		
Check Valves and Gate Valves		
Security Fencing		
Lockable Wet Well Cover and Dead Front Control Panel		
Area Light		
110-Volt Electrical Convenience Outlet		
High Water Alarms:		
Audible Alarm		
Visual Alarm		
Auto-Dialer/Telemetry		
Non-Corrosive Guide Rails/Lift Chains		
All-Weather Access Road		

9. List any equipment (note sheet number of the plans or page number in the specifications) not specifically mentioned above (hoist, odor control equipment, etc.): _____

   _____

   _____
10. a. 100-year flood elevation: _____ feet mean sea level
    b. Finish grade elevation of the pump station: _____ feet
    c. Measures taken to protect the pump station against flooding (15A NCAC 2H .0219(h)(6)): _____

       _____

11. Summary of FORCE MAIN to be permitted, by diameter and length:

Diameter (inches)	Length (linear feet)	High Elevation (feet)	Discharge Elevation (feet)	Pump-Off Elevation (feet)

12. Station location of air-release valves (15A NCAC 2H .0219(i)(2)(L)): _____

_____

Note: Air-release valves must be provided at all high points along the force main where the elevation difference exceeds 10 feet.

Professional Engineer's Certification:

I, _____, attest that this application for _____

_____ has been reviewed by me and is accurate, complete and consistent with the information supplied in the engineering plans, calculations, and all other supporting documentation to the best of my knowledge. I further attest that to the best of my knowledge the proposed design has been prepared in accordance with the applicable regulations and Gravity Sewer Minimum Design Criteria for Gravity Sewers adopted February 12, 1996. Although certain portions of this submittal package may have been developed by other professionals, inclusion of these materials under my signature and seal signifies that I have reviewed this material and have judged it to be consistent with the proposed design. **Note**: In accordance with NC General Statutes 143-215.6A and 143-215.6B, any person who knowingly makes any false statement, representation, or certification in any application shall be guilty of a Class 2 misdemeanor which may include a fine not to exceed $10,000 as well as civil penalties up to $25,000 per violation.

North Carolina Professional Engineer's seal, signature, and date:

Applicant's Certification:

I, _____, attest that this application for _____

_____ has been reviewed by me and is accurate and complete to the best of my knowledge. I understand that if all required parts of this application are not completed and that if all required supporting information and attachments are not included, this application package will be returned to me as incomplete. **Note**: In accordance with NC General Statutes 143-215.6A and 143-215.6B, any person who knowingly makes any false statement, representation, or certification in any application shall be guilty of a Class 2 misdemeanor which may include a fine not to exceed $10,000 as well as civil penalties up to $25,000 per violation.

Signature: _____ Date: _____