

## CITY OF GASTONIA

### INSTRUCTIONS FOR APPLICATION FORM

*(PUMP STATIONS, FORCE MAINS, AND GRAVITY SEWERS)*

**The City of Gastonia will not accept this application unless all the instructions are followed. Plans and specifications must be prepared in accordance with City of Gastonia Standard Details and Specifications and with 15A NCAC 2H.0200 practices. Failure to submit all of the required items will lead to additional processing and review time for the permit application.**

**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 7) do not need to be submitted. Any changes made to this form will result in the application being returned. The City of Gastonia will only accept application packages that have been fully completed with all applicable items addressed.
- The project name should be consistent with the project name on the plans.
- If this project involves a modification of an existing permit, submit one copy of the existing permit.

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

- Submit a check in the amount of \$400 made payable to: The City of Gastonia.

**C. 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.

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

- Submit six (6) sets of detailed plans and specifications signed, sealed, and dated by a North Carolina Professional Engineer.
- 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 71B-18 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 13.01 must also be shown clearly on the plans.
- 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.

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

- Submit three 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.

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

- For connection to a gravity sewer, submit an evaluation of the gravity sewer based on peak flows from the proposed project. 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.

**G. 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 (stand-by) 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:

By U.S. Postal Service:

The City of Gastonia  
Engineering Department  
Land Development Section  
Post Office Box 1748  
Gastonia, North Carolina 28053-1748

By Courier:

The City of Gastonia  
Engineering Department  
Land Development Section  
150 South York Street  
Gastonia, North Carolina 28052

# PUMP STATIONS, FORCE MAINS, AND GRAVITY SEWERS

## APPLICATION FORM

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

Application Number: \_\_\_\_\_ ( to be completed by City of Gastonia)

### I. GENERAL INFORMATION:

1. Applicant's name (name of the corporation, individual, etc): \_\_\_\_\_  
\_\_\_\_\_

2. Owner's or signing official's name and title: \_\_\_\_\_  
\_\_\_\_\_

3. Name and complete address of applicant: \_\_\_\_\_  
\_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone number: (\_\_\_\_\_) \_\_\_\_\_ Facsimile number (\_\_\_\_\_) \_\_\_\_\_

4. Project name (name of subdivision, facility or establishment, etc.) \_\_\_\_\_  
\_\_\_\_\_

5. Fee Submitted: \$ \_\_\_\_\_

6. Name and complete address of engineering firm: \_\_\_\_\_  
\_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Telephone number: (\_\_\_\_\_) \_\_\_\_\_ Facsimile number (\_\_\_\_\_) \_\_\_\_\_

7. 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. 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: \_\_\_\_\_  
\_\_\_\_\_

4. If project included any stream or wetland crossings, provide date when Nationwide 12 or 404 permit was submitted for approval: \_\_\_\_\_

**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: \_\_\_\_\_  
 \_\_\_\_\_
  
4. Nature of wastewater : \_\_\_\_\_% Domestic/Commercial;  
 \_\_\_\_\_% Percent 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. Name of wastewater treatment facility (WWTF) receiving wastewater \_\_\_\_\_  
 \_\_\_\_\_
  
3. Pipe diameter of sewers immediately downstream: \_\_\_\_\_
  
4. Engineering evaluation of downstream sewers’ ability to accept the wastewater from this project (See Instruction F.) is provided on page \_\_\_\_\_ of the calculations.
  
5. Summary of GRAVITY SEWER to be permitted:

Diameter (inches)	Length (linear feet)

6. Does the subject gravity sewer collection system comply with the City of Gastonia Standard Specifications and Details  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 street address: \_\_\_\_\_  
\_\_\_\_\_
2. Describe the measures that are being implemented to prevent impacts on down-slope surface waters should a power failure occur at this pump station (See Instruction G.): \_\_\_\_\_  
\_\_\_\_\_
3. Design flow of 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: \_\_\_\_\_
6. Number of pumping cycles at average daily flow. \_\_\_\_\_ 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 Sources:		
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: \_\_\_\_\_
- b. Finish grade elevation of the pump station: \_\_\_\_\_ feet.
- c. Measures taken to protect the pump station against flooding \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

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: \_\_\_\_\_
- \_\_\_\_\_

**Note:** Air-release valves must be provided at all high points along the force main where the elevation difference exceed 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 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 the most recent versions of the City of Gastonia Standard Specifications, NCDENR Gravity Sewer Minimum Design Criteria, NCDENR Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains, and the watershed classification in accordance with NCDENR guidance. 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. I further attest that all offsite easements required for the sewer extension installation as shown on the plans have been acquired and legal proof for the acquisition is available upon request.

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. Furthermore, I certify that upon complete installation of the sewer extensions permitted through this application form, the subject sewer extensions shall be dedicated to the City of Gastonia.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Approval:**

The permit cited in the foregoing application is hereby approved insofar as the protection of public health is concerned as provided in the regulations, standards and criteria adopted under the authority of Chapter 14, Article II. Division 2. Water & Sewer Extensions, Section 14-141 of the Code of Ordinance for the City of Gastonia, with the following provisions:

This permit is issued with the understanding that upon installation of such sewer extensions, the project shall be dedicated to the City of Gastonia, who will operate the installation to the best accepted practice and in accordance with the recommendations of the State of North Carolina Department of Environment and Natural Resources. The official copies of plans accompanying this application have been sealed and stamped with the serial number of this application \_\_\_\_\_. Only such plans are included in this permit approval and any erasures, additions or alterations of the proposed sewer extensions will make such approval null and void.

Date: \_\_\_\_\_ Approved By: \_\_\_\_\_