

Greer, SC
Engineering and Planning
Department

Developer's Guide to Greer Commission of Public Works



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Greetings,

This document is designed to offer helpful guidance for developers, consulting engineers, project managers, builders, and contractors working on projects that require utility services from Greer CPW (Greer Commission of Public Works). It is intended to be used alongside Greer CPW's Extension Policy and Customer Service Manual, which outline detailed policy requirements.

We hope you find this information useful. If you have any questions or need further assistance, please feel free to contact our office at (864) 848-5500.

Sincerely,
Greer CPW Engineering & Planning Department

Section I: Project Duties & Workflow

Any new project requires close coordination between the developer, consulting engineer, Greer Commission of Public Works (Greer CPW), and the contractor. Each party has specific responsibilities that contribute to the project's success. Below is a general project workflow overview as well as the typical duties for each role.

General Project Workflow

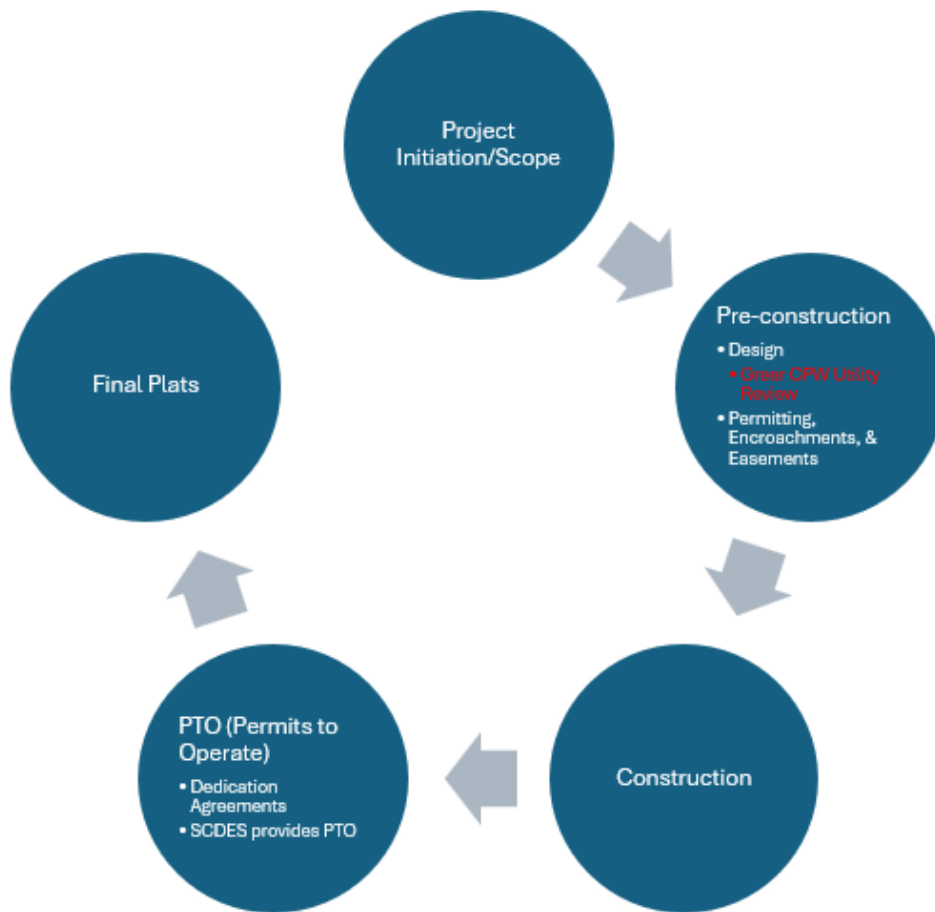


Figure 1 - General project work flow is intended for general steps in the project and not each step required.

Developer

The developer is responsible for:

- Executing or obtaining the property owner's signature on all legal documents for the project. This includes:
 - All applicable agreements
 - Any other documents related to the project. Examples include but not limited to Easement Agreements.
- Construction of utilities in accordance with the approved plans, and standards and specifications provided by the consulting engineer that have been reviewed by Greer CPW and incorporate all Greer CPW design changes/criteria.
- Construction of all water and wastewater lines and services.
- Making application for service and paying the appropriate fees.
- Ensuring there are no permanent structures within Greer CPW's easements.

Developer's Consulting Engineer

The consulting engineer is responsible for:

- Researching records to efficiently plan the project and prepare drawings. These records might include:
 - Tax maps
 - Flood maps
 - Public records
 - Availability of existing utilities
 - Applicable City of Greer zoning records
 - Approved standards and specifications
 - Coordination of site inspections and surveying
- Plan preparation and submittal.
- Advising the developer of the project development process with Greer CPW and estimating time required to complete the entire process.
- Preparing all drawings, including but not limited to:
 - Construction/Utility plans
 - Electrical drawings
 - Encroachment permits
 - Record drawings
 - Easement plats
 - Final plats
 - And any other applicable drawings
- Providing electric load and natural gas load for the development.
- Providing wastewater flow data (Peak & ADF)
- Conducting final inspections of the water distribution system and the wastewater collection system to be deeded to Greer CPW for operation and maintenance.
- Estimating the size of water meter(s) needed for the proposed development.
- Preparing and submitting certification package (engineer's certification letter, test results, record drawings).
- Providing all required project documents shown in Appendix A
- Submitting the Final Package to South Carolina Department of Environmental Services (SC DES) to request the Final Permit(s) to Operate.

Greer Commission of Public Works

Greer CPW is responsible for:

- Verifying the availability of utility services provided by Greer CPW for the property to be served.
- Greer CPW Utility Review - Reviewing construction/utility plans and providing any comments addressing revisions that need to be done for the proposed project. The Greer CPW Utility review process is intended to occur at or prior to the 90% design phase of the development. This will allow for changes based upon Greer Review process to be incorporated prior to construction or site work begins. Any construction or site work prior to Greer CPW's review process completion or without incorporation of Greer CPW's comments is at the developer's sole risk and expense.
 - All residential projects 5 lots or more and all commercial development projects require Greer CPW Utility Review submission.
 - Preparing the electrical design and estimate.
 - Preparing the natural gas design and estimate.
- Inspecting construction of the water distribution system and the wastewater collection system to ensure compliance with approved plans and specifications.
- Providing legal documents necessary for transfer of the water distribution system and the wastewater collection system to Greer CPW:
 - Dedication agreement
 - Easement agreement
 - And other applicable documents

Contractor

The contractor is responsible for:

- Calling in a 72-hour work notice to Greer CPW and scheduling a pre-construction meeting.
- Attending a mandatory on-site pre-construction meeting with Greer CPW and the consulting engineer. The contractor must maintain contact with Greer CPW and the consulting engineer throughout construction. The contractor must also have on site:
 - SC DES construction permit(s) (Water Supply Construction Permit, Wastewater Construction Permit)
 - SC DES approved plans
 - Any encroachment permits, if applicable
 - And any other applicable documents
- Installing approved utility lines.
- Installing, maintaining and restoring sediment and erosion control throughout construction.
- All required testing such as:
 - Hydrostatic pressure testing for the water distribution system
 - Setting up sample points for the collection of bacteriological water samples
 - Deflection testing, low air testing, and vacuum testing for the wastewater collection system
 - Any other required testing

Section II: Submittals & Reviews

The consulting engineer follows these key steps during plan preparation, submission, review, and approval.

Plan Preparation

The consulting engineer does the following:

- Gathers project information. This will include:
 - Property ownership
 - Tax map numbers of subject property, off-site properties to be affected, and adjacent properties to the development site
 - Availability of services
 - Indication of existing water line and wastewater line sizes and record drawing verification
- Advises Developer of procedures and time involved for project development
- Consults with Greer CPW's Engineering and Planning Department for assistance
- Grease traps or interceptors are required for projects with kitchens and automotive operations. This will be reviewed and approved by GCPW's Pretreatment Coordinator.

Plan Submittal, Review, and Approval

The Greer CPW Utility Review process applies to all residential developments with five or more lots, as well as all commercial developments. When the plans are ready for submittal (typically when detailed design is 60%–90% complete), the consulting engineer should take the following steps:

- Prepare a package that includes:
 - One (1) set of plans, .pdf and AutoCAD (.dwg format) each are required.
 - A transmittal letter or cover letter for construction plan review
 - All necessary encroachment permits. An encroachment permit must be submitted for each main line tap, utility crossing and/or railroad crossing.
 - All necessary off-site easement plats. Off-site easement plats are for utility construction on property not owned by the developer.
 - A complete Construction Permit Package assembled using the Section A/Standard Submittal (page 2 of the Construction Permit Application – DHEC Form 1970). This package will be submitted to SC DES for approval and issuance of the Construction Permit(s).
 - See additional requirements for Greer CPW Utility Review in Appendix A
- Submit the package electronically via Greer CPW website (www.greercpw.com) under "Account Login."

Once Greer CPW receives the complete submittal package, the review process will begin. Greer CPW has up to 30 days to complete the plan review. If the project is approved:

- An Operation and Maintenance Letter will be provided to the consulting engineer.
- The consulting engineer will submit the Construction Permit Package to SC DES for approval and issuance of the Construction Permit(s).
- Any affiliated cost-in-aid of construction is provided to the developer. Please note, cost-in-aid of construction does not constitute developer ownership of facilities.

Section III: Pre-Construction Requirements

The developer or consulting engineer is responsible for working with Greer CPW in obtaining proper

easements and encroachment permits before work on a project can begin.

Off-site Easements

Off-site (third-party) easements are required when new Greer CPW-owned utility lines must cross property not owned by Greer CPW in order to reach the project site. While Greer CPW prepares the easement documents, it is the responsibility of the developer or consulting engineer to obtain all necessary signatures and cover any costs associated with acquiring the easement. Developers should keep the following in mind:

- Identifying properties for easements:
 - The developer or consulting engineer identifies properties that will need an off-site easement during the design process. Exhibits or plats for these properties may need to be generated.
 - Always obtain permission to survey where off-site easements are required for extension of Greer CPW owned utility lines from Greer CPW's existing utility to the proposed development site.
- Securing the signatures:
 - Greer CPW supplies easement documents to the developer or consulting engineer.
 - The developer or consulting engineer must acquire the proper signatures for the easement documents.
 - Return the original, executed easement documents to Greer CPW for acceptance and recording.
- Final Easement Documents:
 - Easements must be obtained prior to construction.
 - All easements are prepared naming Greer CPW as Grantee.
 - All easements are **EXCLUSIVE** to Greer CPW.
 - Do not alter the easement language without first obtaining approval from Greer CPW.
 - Greer CPW is not responsible for any agreements made between the property owner and the developer. Any written agreements between them must be drawn up in a separate document and should not include Greer CPW.

Easement Exhibits/Plats

The consulting engineer is responsible for preparing easement exhibits or plats. The requirements are as follows:

- The package submitted to Greer CPW should include:
 - One (1) reproducible original plat
- Format as follows:
 - Prepare on 8½" x 11" paper.
 - Do not show proposed utility on the easement plat.
 - Use centerline distances unless the easement is irregular in shape, then use perimeter measurements.
 - Water easements are typically parallel to road rights-of-way are minimum of ten (10) feet in width; otherwise, easement widths vary according to the location, size, and depth of the pipe.
 - Wastewater easements are a minimum of twenty-five (25) feet in width; otherwise, easement widths vary according to the location, size, and depth of the pipe.
 - Electric easements (underground) are typically parallel to road rights-of-way are minimum of five (6) feet in width; otherwise, easement widths vary according to the location, size, and depth of the pipe.
 - Natural gas easements are a minimum of ten (10) feet in width; otherwise, easement widths vary according to the location, size, and depth of the pipe.

Easement Releases

If an easement needs to be abandoned, the consulting engineer also depicts the easement to be abandoned on the construction plans during Plan Submittal.

- The consulting engineer transmits an easement drawing to Greer CPW on 8½" x 11" paper depicting:
 - The portion of the easement to be abandoned.
 - Location of new easement for relocation of utility. This is separate from the easement plats.
- Important information about Easement Releases:
 - They require Greer CPW approval.
 - They cannot be processed until the new utility is constructed and accepted by Greer CPW for operation and maintenance.

Encroachments (Easement & Utility Rights-of-Way)

The consulting engineer is responsible for preparing drawings for any needed utility encroachment permits. An encroachment permit must be obtained when new utility construction crosses an existing right-of-way of another utility such as power lines, transmission lines, railroads, and others. In preparing an Encroachment Permit Application:

- A copy of the construction plans and exhibit showing the proposed encroachment must be submitted to the affected utility company at the same time it is submitted to Greer CPW.
- Greer CPW will approve the development plans subject to approval of the proposed encroachment by the affected utility company.

Encroachments (Public Road Rights-of-Way)

The consulting engineer also prepares drawings for any needed public road encroachment permits.

Right-of-way encroachment permits will be processed only after plans have been reviewed and approved by the Greer CPW. The consulting engineer will submit the encroachment permit application to the appropriate entity (SC DOT, Greenville County, Spartanburg County, City of Greer, etc.). When preparing a public road Encroachment Permit Application:

- All public road permit applications must:
 - Include an original Encroachment Permit Application
 - Include a detailed drawing or exhibit showing the proposed work and existing conditions

The following is a list of local, state and federal agencies commonly requiring encroachments for utility projects. This list may not be all-inclusive:

- City of Greer – Encroachment permit
- CSX Railroad and Norfolk Southern Railroad – Encroachment agreement
- Duke Energy – Encroachment agreement
- Greenville County – Encroachment permit
- Piedmont Natural Gas – Encroachment agreement
- SC DOT Greenville County – Encroachment permit
- SC DOT Spartanburg County – Encroachment permit
- Spartanburg County – Encroachment permit
- US Army Corps of Engineers – Wetland permit

All costs associated with obtaining encroachment permits are the developer's costs.

The time required to receive an encroachment permit can be lengthy and varies by agency. The

developer and consulting engineer are encouraged to allow adequate time in their schedule for the encroachment permitting process.

Section IV: Inspections & Field Work

The newly constructed water distribution system and/or wastewater collection system must be inspected and approved before a water meter can be set or a wastewater service can be installed. All work must meet the requirements of the approved plans and specifications.

The Process

- The developer is responsible for:
 - Installing and maintaining all individual services for water and wastewater lines within the development project (on-site and off-site water lines and wastewater lines).
 - Repairing any damage to the water distribution system and wastewater collection system at the developer's sole expense.
 - Reporting all field changes to the consulting engineer and to Greer CPW for approval prior to implementation.
 - Conducting final inspections of the water distribution system and wastewater collection system through the consulting engineer.
 - Electric only – Developer is responsible for furnishing and installing all road crossing conduits and for all excavation for any single-phase residential developments.
 - Electric only – Developer is responsible for all excavation on-site for any three-phase residential or commercial developments.

Section V: Record Drawings

Upon completion of construction, the consulting engineer should prepare the record drawings for the developer. The record drawings will include the plan and profile. All Construction Plan information is required and will be confirmed on the Record Drawings as constructed. For the water distribution system, the plan drawing will show pipes (by size), bends and other fittings, water valves, fire hydrants, blow-off hydrants, air release valves, pressure reducing valves, water taps, water service lines (by size), water meter boxes, water easement area(s) to be conveyed to Greer CPW, and any other appurtenances. For the wastewater collection system, the plan and profile drawings will show surveyed rim elevations, pipe invert elevations, line segment footage and slope, and will accurately represent as constructed the wastewater collection system. Wastewater service lateral locations will be shown on the wastewater record drawings and will include lot numbers, road/street names, the distance from the downstream manhole to the wastewater service lateral, the length of the wastewater service lateral, and the depth of the wastewater service lateral at the connection point.

What to Submit

- Final revised and certified record drawing:
 - One (1) Adobe Acrobat PDF format

What to Expect After Applying

Upon receipt of all required application documents, Greer CPW's Water Department will oversee the following:

- Bacteriological water testing

- Begins upon receipt of the Final Permit to Operate Submittal for the wastewater collection system.
- Testing will take a minimum of 3 days and will require 2 samples approved consecutively.
- Upon receipt of the Final Permit to Operate Submittal for the water distribution system and approval of the bacteriological water tests, Greer CPW will issue a letter accepting ownership, operation and maintenance of the water distribution system. This letter, along with bacteriological water test results, will be forwarded to the consulting engineer.
- The consulting engineer must forward the Final Package to SC DES to request the Permit to Operate the new water distribution system.

Section VI: Dedication Agreement & Maintenance Bond

Upon receipt of the approved record drawings and Final Permit(s) to Operate, Greer CPW will prepare the Asset Inventory Worksheet and Water and Sewer Dedication Agreement.

- The consulting engineer will complete the Asset Inventory Worksheet for the development.
- The developer will provide Greer CPW a cash deposit, maintenance bond or an irrevocable standby letter of credit from his/her financial institution for all new water and wastewater facilities (i.e., water line extensions, gravity line and force main line extensions, pump stations, etc.) to be deeded to Greer CPW for operation and maintenance. The cash deposit, maintenance bond or irrevocable standby letter of credit amount will equal to fifteen percent (15%) of the cost of the newly installed water and/or wastewater facilities as described on the Asset Inventory Worksheet completed by the consulting engineer at the time of project closeout. The developer is liable for any/all repairs of system deficiencies for a period of two (2) years from the date of acceptance.
- The developer must sign the dedication agreement.

Section VII: Pump Stations

Many developments will require pump stations to be installed by the developer. In these cases, the deeds to the pump stations will need to be transferred to Greer CPW upon project completion.

Pump Stations

In closing out a project with a Pump Station:

- The Developer provides Greer CPW a recordable Boundary Survey showing the Pump Station Site and access road.
 - The area of the site must be approved by the Greer CPW
 - The pump station site will measure 50' x 50'
 - A 25' wide access road to the Pump Station Site will be included
 - The Pump Station Site will have its own tax map number and E911 address
 - The plat will be prepared on 8 ½ "x 11" paper
- The developer will prepare the deed and transfer ownership of the pump station and access road to Greer CPW.

Section VIII: Application for Service

Before water and/or wastewater service can begin, the developer must receive a Final Permit to Operate from SC DES and the owner/builder must apply for water service and/or wastewater service.

- Final Permit to Operate Submittal:
 - The consulting engineer prepares and submits the Final Package to SC DES for the developer which includes:
 - Engineer's certification letter
 - Record drawings
 - Greer CPW's approval letter accepting ownership, operation, and maintenance of the water distribution system and/or wastewater collection system
 - Approved water test results (hydrostatic pressure test)
 - Approved wastewater test results (deflection test, low air pressure test, vacuum test)
 - Approved bacteriological water sample results (collected by Greer CPW's Water Department)
 - SC DES reviews the Final Permit to Operate Submittal
 - Upon approval, SC DES issues the Final Permit(s) to Operate to the developer
 - Applying for water and/or wastewater service:
 - Owner/Builder completes the online application form
 - Owner/Builder applies and pays any applicable fees
 - Water meter is set, wastewater service is inspected, and billing is set up
 - New water and/or wastewater service begins
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Appendix A – Greer CPW Utility Review Documentation

Greer CPW's Utility Review Process is separate from the City of Greer's PAC meetings. Developer's must login (or create an account) at www.greercpw.com and submit their project for Utility Review. The process can take up to 30 days after review submission, payment, and all necessary information is provided. Submissions lacking any required documents, even if paid for, will result in Utility Review delays. The required documents are listed below:

- a. All Utility Review Submissions:
 - i. Site Plans – AutoCAD (.dwg) format
 - ii. Civil Site Plans – pdf format and should include both existing conditions and proposed site conditions.
 - iii. On Developer or Engineer's letterhead a proposed or estimated construction start date for the development (including grubbing/clearing)
 1. Include a tentative construction schedule
- b. Water
 - i. Instantaneous flow calculations
 - ii. Fire flow needs
 - iii. Provide or indicate on developers drawing the requested meter size, standard sizes can be found on GCPW's website at www.greercpw.com/customer-service/new-construction/
 - iv. Cross Connection Control Questionnaire completed by Engineer
- c. Electric
 - i. For townhomes, indicate meter locations on the drawings.
 - ii. For Multi-unit Apartments, with greater than 50 units in a single structure, meter locations and full electrical drawings including riser diagrams. Electrical load information is required for any commercial space within the development.
 - iii. For Commercial, Electrical load information is required for any commercial space, by meter, within the development, meter locations and full electrical drawings including riser diagrams.
 1. Please provide requested voltage for voltages provided, please review GPCW Electrical Specifications found on GPCW webpage at www.greercpw.com/customer-service/new-construction/
- d. Natural Gas
 - i. For residential – Please include (on engineer or developer letterhead) the type of gas appliances that will be planned into construction for a typical home in the development.
 - ii. For Commercial – Please include (on engineer or developer letterhead) the type of gas appliances that will be using gas along with any associated BTU or MCF ratings of the appliances.
 1. Developer's must provide the peak hourly BTU or MCF demand for the structure or facilities beyond the Greer CPW meter point
 2. Developer (or Engineer) must provide the requested delivery pressure at the service (meter) point.
- e. Wastewater
 - i. Peak/ADF (Average Daily Flow) calculations on Engineer letterhead
 - ii. Review Wastewater documents (as applicable), documents can be found at www.greercpw.com/customer-service/forms/ for incorporation of site planning and completion of the Industrial Wastewater Discharge Permit Application
 1. For restaurants or other facilities requiring grease traps and/or oil water separators, please clearly indicate these facilities on your proposed site plans.



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