



Development **Information** Guide

Revised February 2011

Charleston Water System
(Commissioners of Public Works)
PO Box B Charleston, SC | 29402
www.charlestonwater.com

New Development Manager (843) 727-6869
Customer Service (843) 727-6800

About this Guide

This document is intended to provide general information to Developers, Consulting Engineers and Contractors regarding procedures for approval and acceptance of new water and/or sanitary sewer infrastructure into Charleston Water System's distribution and collection systems for operation and maintenance.

It should be used in conjunction with our *Minimum Standards for the Design & Construction of Water and Sanitary Sewer Systems*. Both documents are available on our website at www.charlestonwater.com.

The information contained herein is not meant to be all inclusive of Charleston Water System's policies, procedures, or fee structures, and is subject to change without prior notice. Please be aware that all of our policies, procedures, and fee structures will be administered according to the most current revisions.

We hope the information provided is helpful. As always, you may contact our New Development Manager at (843) 727-6869 for prompt response to any questions or concerns relating to this information.

Sincerely,

A handwritten signature in blue ink that reads "Russell L. Huggins, Jr." The signature is written in a cursive style.

Russell L. Huggins, Jr., P.E.
Director of Engineering

Our Mission is to protect public health and enhance the environment of our service community by providing clean water services of exceptional quality and value.

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Attachments

Download these attachments from our web site at www.charlestonwater.com.

Attachment 1: Water and Wastewater Availability Letter

Attachment 2: Hydrostatic Flow Test Request

Attachment 3: Area Fire Department Listing

Attachment 4: Approved Contractors

Attachment 5: Grease Interceptor Application

Attachment 6: Application for Service

Section I: About Charleston Water System

Charleston Water System, formally known as the Commissioners of Public Works of the City of Charleston, provides public water and wastewater service to the Greater Charleston area.

Our water service area stretches from the Cainhoy Peninsula through the City of Charleston and surrounding areas to just beyond the city limits of North Charleston. The potable water is transported from our Hanahan Water Treatment Plant through large trunk mains, which are then connected to transmission mains throughout our service area.

Charleston Water's sewer service area includes the City of Charleston, West Ashley, Daniel Island, and the Cainhoy Peninsula. Wastewater is collected through a series of gravity sewers and pumping systems and conveyed to the Plum Island Wastewater Treatment Plant on James Island.

Our treatment plants and distribution and collection systems are designed to serve the needs of the tri-county area well into the future. We are continually preparing and planning upgrades and expansions to meet future regulatory requirements and forecasts for growth and development. Our water meets or exceeds all USEPA standards for water safety and quality.

Charleston Water System can provide a water quality analysis that shows test results for several water quality parameters for the water pumped from the Hanahan Water Treatment Plant, along with applicable USEPA standards. Our Laboratory can also answer questions about water quality. The lab can be contacted at (843) 863-4030.

ISO 14001 Certification – Awareness of Charleston Water's Environmental Policy

Charleston Water System is certified under ISO 14001, the international standard for environmental management. Through our environmental management system, we prevent pollution, protect public health, and adhere to all legal and other requirements.

All firms doing work for Charleston Water System must adhere to our policies, which require strict adherence to all permits, regulations, and procedures in order to prevent any adverse impact to the environment. Deviation could result in disapproved work.

To learn more about our environmental management system and ISO 14001 certification, visit our web site.

Section II: Construction of Water and Sewer Systems

The construction of all water and sewer main extensions within Charleston Water System's service area must be coordinated through the New Development Manager, who can be reached at (843) 727-6869. Charleston Water publishes the *Minimum Standards for the Design & Construction of Water and Sanitary Sewer Systems* to assist engineers and contractors working on projects involving our water and sewer systems. The *Minimum Standards* are available on our web site at www.charlestonwater.com.

All water and sewer infrastructure for new development in Charleston Water System's service area are constructed at the developer's expense. Additionally, single-family residential developments require the installation of water services during water main construction, also at the expense of the developer. Once construction, testing, and permitting are complete, ownership of the mains and appurtenances is officially conveyed to Charleston Water System for operation and maintenance.

Water/Sewer Availability

For information about water and/or sewer availability, simply complete the Water and Wastewater Availability Letter Request Form, available on the Internet at www.charlestonwater.com, and fax to the Engineering Assistant at (843) 579-6622.

A letter stating the availability or non-availability of water and/or sewer will generally be returned within five working days.

Section III: Submittals and Reviews

Initial Submittal

Charleston Water System requires the initial submittal of three sets of utility plans showing all proposed water and sewer lines, drainage systems, and landscaping plans. The initial submittal shall also include a brief description of the project, a preliminary construction cost estimate for the proposed water and/or sewer system(s), and a copy of the current Water and/or Wastewater Availability Letter from Charleston Water System. A project will not proceed with review until the preliminary cost estimate has been submitted to the Development Coordinator in the Engineering Department. The preliminary cost estimate allows us to issue a unique job number to track the progress of the project.

The initial design should also take into consideration Charleston Water System's current developer policies. These policies deal with issues ranging from water and wastewater availability to acceptable metering scenarios and may affect the design of new mains and services. The developer policies can be found on our website at www.charlestonwater.com/dev_contract_downloads.htm.

Domestic water and/or sewer services only

During the initial submittal, projects that are determined to involve domestic water and /or sewer services with *no main extensions* will be handled by the respective water and/or wastewater department personnel. These personnel will communicate directly with the engineer to coordinate the proposed services and create a satisfactory service plan. A technical review will not be provided by the Engineering Department for "service only" projects. Nevertheless, these plans will be submitted to the New Development Manager for fee determination and transfer to the appropriate personnel in the Water Distribution, Wastewater Collection, or Cross-Connection Control departments.

Dedicated fire service

Dedicated fire services will not be required to be metered. Requests for non-metered, dedicated fire services must be submitted to the New Development Manager for review in the same manner as standard metered water and sewer services. No impact, tap, or administrative up-front fees will be associated with a non-metered fire service; however, the Water Distribution Department will conduct a review of the plans for the proposed tap location, the service line installation, and the metered domestic service to the property. Cross-Connection Control will also conduct a separate review of the proposed fire sprinkler system and backflow prevention devices.

Review Time

The planning and scheduling of development projects requiring the extension of water and/ or sewer mains in our service area must allow adequate time for the internal review by the Engineering Department and the permitting process. The initial preliminary review process takes about three to four weeks. All comments are sent directly to the developer's engineer for any

necessary revisions to the plans. For informational purposes, the developer will receive a courtesy copy of this correspondence. Once plans have been approved by Charleston Water System, a construction permit application package can be submitted under the SC Department of Health and Environmental Control's (SCDHEC's) Delegated Review Program (DRP).

Permitting

SCDHEC requires that all projects involving the construction of new water and/or sewer mains in Charleston Water's service area be permitted through the Delegated Review Program. Charleston Water System is the delegated review entity and performs reviews of all projects before a permit application is submitted to SCDHEC. A permit application form can be obtained by visiting the SCDHEC website at www.scdhec.net/water. The permit application package consists of the following items:

1. One signed original permit application with 2 copies
2. Two copies of a detailed (8 1/2" x 11") site location map
3. Two sets of design calculations prepared according to SCDHEC regulations - water calculations should include hydrostatic flow test results taken within the last 12 months (see Attachment 2).
4. One plan sheet with proposed mains highlighted
5. Six sets of signed and sealed utility plans
6. Certification letter from OCRM
7. Sewer only - Council of Governments 208 Plan Conformance Certification
8. \$75.00 check made out to SCDHEC for project application processing
9. Combined application water and sewer is \$150.00

All Charleston Water System impact fees must be paid before the permit application package will be forwarded to SCDHEC. See the following sections on water and wastewater fees.

Development Agreement

All owners/developers of new infrastructure projects will be required to execute a standard development agreement with Charleston Water System. The agreement lists the requirements for construction and for the closeout of the project along with delineating Charleston Water System and developer responsibilities. The agreement is also an acknowledgement of water and wastewater impact fees, the cash bond, and the warranty inspection fees. Failure to execute an agreement could result in Charleston Water System stopping construction until the agreement is executed.

Right-of-Way Permitting

All water and sewer main extension projects that will impact a public right-of-way must be permitted through the appropriate agency that owns, operates, and maintains the right-of-way, roadbed, and drainage structures within that particular public right-of-way. It is the responsibility of the developer's engineer to determine which agencies will be involved with the project and submit to our Technical Services Department the appropriate permit applications for review and

signature. The respective permitting agencies will only process permit applications submitted through Charleston Water System. Once the permit(s) have been reviewed and signed by Charleston Water, they will be forwarded to the agency, which has jurisdiction in the right-of-way. Our Technical Services Department can be contacted at (843) 727-7118.

Please note that right-of-way permits will be processed only after plans have received final approval from our Development Engineer. The following is a list of local, state and federal agencies commonly requiring permits for utility projects. This list may not be all-inclusive:

- SCDOT Charleston County City of Charleston Engineering Office
- SCDOT Dorchester County City of Charleston Parks
- SCDOT Berkeley County City of North Charleston Public Works
- CSX Railroad County of Charleston Public Works
- Norfolk Southern Railroad County of Dorchester Public Works
- S.C. Public Railways Commission County of Berkeley Public Works
- SCE&G U.S. Army Corps of Engineers
- City of Charleston Traffic & OCRM
- Transportation

The time required to receive a right-of-way permit can be lengthy and varies by agency. Developers and their Engineers are encouraged to allow adequate time in their schedule for the encroachment permitting process.

Water Impact & Tap Fees

Water impact and tap fees are calculated when a project is submitted for review. Water impact fees are a non-recurring, non-refundable fee charged to developers to assist Charleston Water System in paying for major capital improvements for water treatment and distribution. Water tap fees are a non-recurring, non-refundable charge related to the cost of installing the service line from the main to the property line. Water impact and tap fees are calculated when a project is submitted for review and are based on meter size.

Tap/Meter Size	Impact Fee	Tap Fee
3/4"	\$ 2,200	\$ 500
1"	3,380	1,200
1 1/2"	6,100	2,000
2"	9,500	2,200
3"	17,500	8,000
4"	28,800	14,000
6"	36,500	16,000
8"	56,900	20,000
10"	67,700	28,000

Water impact fees are charged up front and are due before a project is permitted for construction. Charleston Water will only accept water tap fees once SCDHEC issues a *Permit to Operate* for the system(s) and all of our project closeout requirements have been met.

Wastewater Impact & Tap Fees

Wastewater impact and tap fees are calculated when a project is submitted for review. Wastewater impact fees are a non-recurring, non-refundable fee charged to developers to assist Charleston Water System in paying for major capital improvement items for wastewater transportation and treatment. Wastewater tap fees are a non-recurring, non-refundable fee to be paid prior to connection or installation of the building sewer line to our sewer main. Wastewater tap fees are based on tap size and cover the cost to inspect sewer taps made by the contractor.

The total charge for a wastewater impact fee is based on the number of equivalent units in the proposed development. An Equivalent Residential Unit (ERU) is defined as 400 gallons per day (gpd) of wastewater. Each single-family residence is considered one ERU. In commercial/ public properties, the total ERUs are determined based on our Approved Unit Contributory Loading Guidelines. Every ERU (400 gpd) is charged a sewer impact fee of \$2,650.00.

For example, if the Unit Contributory Loading for a grocery store is every 2,000 square feet of space is equal to 1 ERU, or 400 gpd, then a proposed store with 5,000 square feet is equal to 2.5 ERUs. Then $\$2,650 \times 2.5 = \$6,625.00$ total sewer impact fee.

Sewer tap fees are as follows:

6" tap or smaller:	\$200.00
8" tap:	\$700.00

New sewer accounts inside the City of Charleston will also be charged a \$15.00 sewer origination fee. New sewer accounts outside the City of Charleston will be charged a \$25.00 sewer origination fee. Please note that apartment/townhouse units are assessed fees in the same manner as single-family residences.

Cash Bond & Warranty Inspection Fees

Charleston Water System will collect a cash bond in the amount of 10% of the value of the water and/or wastewater system(s) as shown on the Project Completion Questionnaire (closeout documentation supplied by the engineer). No bonding certificates will be accepted. The bond will be held for a two-year period, during which time, if repairs or modifications are needed and the developer fails to correct the repairs within the prescribed time, bond funds will be utilized to make the repairs. If Charleston Water System must utilize any part of the bond funds, the entire amount will be forfeited by the developer. Otherwise, if no bond funds are used, Charleston Water System will reimburse the bond amount in full.

Warranty Inspection Fees will be collected by Charleston Water System to cover the costs involved with the operational department's two-year maintenance inspections. This is a non-refundable charge that will be assessed at \$0.50 per linear foot of water main and/or sewer force main installed and \$2.00 per linear foot of gravity sewer main installed.

Preliminary costs for these fees will be determined upon the initial submittal based on the engineer's cost estimate. This preliminary determination is for informational and planning purposes only. Upon the completion of construction and the submittal of closeout documents, Charleston Water System will provide the owner/developer and the owner's engineer with a final quote illustrating the Cash Bond and Warranty Inspection Fees due. These fees must be paid in full before service applications will be accepted by Charleston Water System.

Fire Department Certification

Charleston Water System's service area has various requirements concerning fire protection inside and outside all buildings. All requirements must be met prior to approval of building occupancy. We will require a fire protection requirement letter from the local governing Fire Department prior to acceptance of a water service or prior to approval of a project. It is the responsibility of the developer or the developer's engineer to contact the appropriate Fire District with jurisdiction in the project area to determine specific requirements. All hydrants installed as part of a development are owned and maintained by Charleston Water System.

Approved Contractors & Project Inspection

In order to maintain a high standard of quality, only Charleston Water System Approved Contractors may construct or work on our water distribution or wastewater collection systems.

We maintain this list of Approved Contractors based solely on workmanship and past experience. Though a developer must use a contractor from this approved list, it is incumbent upon the developer to fully investigate and satisfy themselves as to the Approved Contractor's financial status, safety record, insurance status, business/ethical practices, and/or any other area the developer deems necessary. Charleston Water System does not warrant or guarantee, in any way, contractors on the approved list. The list of Approved Contractors is available at our website, www.charlestonwater.com/dev_contract_downloads.htm.

Any contractor working on our system will be subject to inspection by Charleston Water System to ensure compliance with our *Minimum Standards*.

Section IV: Meters and Cross Connection

Meter Sizing

The developer or the developer's engineer is responsible for determining water meter size. Charleston Water System representatives will not determine meter sizes to be utilized on a particular project. Based on average conditions throughout our water distribution system, and assuming a system pressure of 60 to 85 PSI, the following is offered only as a guide based on the meter manufacturers' specifications, which are subject to change:

Meter Size	Approx. Gallons per Minute (gpm)
Neptune normal operating range meter size (gallons per minute)*	
¾"	¾ gpm to 30 gpm
1"	1 gpm to 50 gpm
1 ½"	4 gpm to 160 gpm
2"	4 gpm to 200 gpm
3"	5 gpm to 450 gpm
Neptune HP Protectus III*	
4"	¾ gpm to 1,200 gpm
6"	1½ gpm to 3,000 gpm
8"	2 gpm to 4,000 gpm
10"	2 gpm to 6,500 gpm
Neptune HP Turbine*	
12"	100 gpm to 8,000 gpm
*This information is for the meter type shown.	

Cross-Connection Control Program

Charleston Water System's Cross-Connection Control Program protects the potable water system from contamination from backflow. Depending on the degree of hazard, most commercial, irrigation and all fire sprinkler customers will be required to install, test annually, and maintain a backflow preventer on their water service. Charleston Water System customers will be charged a \$25.00 annual backflow administration fee for each backflow prevention device.

Charleston Water System reserves the right to determine the actual or potential degree of hazard (health, non-health or lethal hazards) and which type of backflow protection we require to be installed and maintained. Typically, health hazards will require an approved Reduced Pressure Principle backflow prevention assembly (RP); non-health hazards will require an approved Double Check Valve Assembly (DCVA); and lethal hazards will be required to maintain a physical AIR-GAP separation or an approved RP. Lawn irrigation sprinkler systems (residential or commercial) require an approved RP or Pressure Vacuum Breaker (PVB).

All backflow prevention assemblies installed on our distribution system shall be approved by the USC-Foundation for Cross-Connection Control and Hydraulic Research. Charleston Water System neither recognizes nor approves the use of any detector-type DCDA's or RPDAs within our distribution system.

All approved backflow prevention assemblies shall be installed per manufacturer's specifications and to the installation requirements defined and illustrated in our Cross-Connection Control Program Manual on Backflow Prevention, which includes the most current standards and specifications, and is available through the Cross-Connection Department and our Internet web site, www.charlestonwater.com/dev_contract_downloads.htm.

For more information, please contact our Cross-Connection Control Department at (843) 727-7148.

Section V: Grease Interceptors

Charleston Water System requires grease, oil and/or sand interceptors or traps when necessary for proper handling of liquid wastes containing excessive amounts of grease, flammable wastes, sand, grit, or other harmful ingredients. A copy of our Grease Trap Interceptor Standards is available from our Wastewater Collection Department at (843) 308-8208.

Charleston Water System charges a \$25.00 origination fee to register the grease trap and a \$50.00 inspection fee for each grease trap inspection made thereafter. Please see visit our web site to download an application for grease interceptor installation.

Section VI: Project Closeout Process

Once the construction phase of the project is completed, the development enters the project closeout stage. At this critical point in the project Charleston Water System requires that specific legal documentation is complete, record drawings are complete, and all testing of the mains is completed satisfactorily. The following documents are required for most water/wastewater extension projects. Charleston Water provides a standard format of each required document that must be utilized.

- Affidavit of Title
- Bill of Sale
- Contractor Affidavit & Final Waiver of Lien
- Maintenance Agreement
- Completion Questionnaire
- Easement Plats
- Easement Documents

Other documents may be required, depending on the scope of the project. This documentation allows us to legally account for new infrastructure added to our service area and ensures the accuracy of our Geographic Information System (GIS). Also, at this time, Charleston Water System will provide a final quote of the Cash Bond and Warranty Inspection Fees based on the Completion Questionnaire. The payment of these fees is required before service applications are accepted.

Typically, when construction is complete, the developer's engineer will submit Record Drawings and any valve cards for review by our Inspector and GIS Department. The Inspector will conduct a Commissioning Inspection with the contractor and engineer to ensure that the project is complete and fully operational. Charleston Water System may request revisions and/or corrections to the Record Drawings.

Once the Record Drawings and valve cards are satisfactory, the developer's engineer will submit a complete Closeout Package to one of our Project Records Specialists, who can be reached at (843) 727-6983 or (843) 727-6885. This package includes the legal documents listed above, Record Drawings, valve cards, bacteriological samples, pressure test results, mandrel and air test results, and a certification letter from the Engineer of Record.

When all closeout requirements are completed to our satisfaction, we will issue an Operation and Maintenance Letter to SCDHEC for the new system(s). Separately, the developer's engineer will make a submittal to SCDHEC based on SCDHEC's requirements for project closeout. When SCDHEC has its requirements met by the developer's engineer and Charleston Water System has issued the O&M letter, SC DHEC will issue a Permit to Operate for the new system(s).

More information on closeout procedures can be found in our *Minimum Standards for the Design & Construction of Water and Sanitary Sewer Systems* available via the Internet at www.charlestonwater.com/dev_contract_downloads.htm.

Section VII: Service Acceptance

SC DHEC issues its Permit to Operate via standard US Postal Service. It may take a few days before the actual permit has been received by Charleston Water System. When it is received by Charleston Water, it is routed to a Project Records Specialist in the Construction Department, who will then compare the actual services shown on the Record Drawings with the Permit to Operate.

When it is determined that the drawings correspond with the permit, a Service Acceptance Letter is issued to our Customer Service Department. This letter indicates to the Customer Service Department which blocks, lots, streets, and building numbers are permitted to receive a water/sewer service. Any deviation from the original Permit to Operate and Record Drawings will require the developer's engineer to submit for a revised permit and/or submit revised Record Drawings, which could result in a delay in the acceptance of service applications. If the developer/customer attempts to apply for a service before the necessary approval letter has been issued, our Customer Service Department will not accept the application or payment.

Once the Service Acceptance Letter has been issued, applications for service can be placed through our New Service Coordinators by dialing (843) 727-6800 and choosing option 5 from the menu. A sample of the information requested at the time of application for service is available on our web site.

Once Charleston Water System receives the application(s) for service and payment of the appropriate fees, the New Service Coordinator will enter the information into our account system and each service will receive an individual account number. At this time, the New Service Coordinator will create a Water Meter Location Card(s) and send them to the owner for placement on the property where the meter is desired.

Simultaneously, the appropriate departments will receive work orders for meter installation and/or sewer tap inspection. The respective departments will schedule the installations and inspections. The standard time to install a residential service is three to four weeks from the receipt of payment for service and four to six weeks for larger services. We ask that all developers and agents take this into consideration during the planning stage for real estate closings.

*Commercial or irrigation accounts: Before a water service is activated, the appropriate backflow prevention device must be installed and tested. Once the backflow prevention has been tested, a representative from Charleston Water's Cross-Connection Control Department, (843) 727-7148, will inspect the backflow prevention device. We will not provide service to a commercial or irrigation account prior to inspection by the Cross-Connection Control Department.