

City of Columbia Stormwater Management Utility Fee Credit Manual

Prepared for:



The City of Columbia, Utilities and Engineering Department
Columbia, South Carolina

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Stormwater Utility Fee Credit for Water Quality Treatment Application Form

Stormwater Utility Fee Credit for Water Quantity Management Application Form

Stormwater Utility Fee Credit for Public Education and Outreach Application Form

1. Overview

The City of Columbia collects a stormwater utility fee from most developed properties to provide funding for capital improvement projects, maintenance and repair of storm drainage systems, and managing the City's Municipal Separate Stormwater Sewer System (MS4) permit requirements. For single family residences, the utility fee is assessed at a flat rate, but for commercial or industrial properties, the utility fee is based on the property's impervious area and converted to an Equivalent Residential Unit (ERU). To incentivize practices that improve stormwater quality, reduce flooding, or provide educational benefits to the community, the City of Columbia offers a utility fee credit for non-single family residential properties that meet the minimum requirements described in this manual.

2. Goals and Rationale

As a permit holder under the National Pollutant Discharge Elimination System (NPDES), the City of Columbia is authorized to discharge stormwater runoff from its Municipal Separate Stormwater Sewer System (MS4). The City of Columbia's MS4 permit contains specific requirements for the management of post-construction stormwater management, flood control, and public education and outreach for stormwater impacts. To incentivize certain practices, the City of Columbia is providing a utility fee credit of up to 30%. The incentivized practices are specific and focused on the following key goals:

1. Treat stormwater quality to a higher standard.
2. Reduce flooding in flood-prone areas.
3. Raise public awareness of stormwater quality and quantity issues in the City.

This credit is only available to non-single family residential developments and land uses and is applied to each monthly bill. This manual outlines the requirements to meet all or a portion of the 30% utility fee credit.

3. Stormwater Utility Fee Credits

The City of Columbia's stormwater utility fee credit program provides incentives for three types of practices: water quality treatment, water quantity management, and public education and outreach. Specific eligibility requirements for each type of practice are detailed in Sections 3.1, 3.2, and 3.3. The following general policies apply to all types of utility fee credits:

- Utility fee credits are eligible for non-single family residential properties only.
- Utility fee credit applications may be submitted at any time for a proposed development or redevelopment, for retrofits to stormwater facilities on an existing development, or for the implementation of public education and outreach programs.

- Standard utility fee credits will be capped at a maximum of 30% for each site. Water quality treatment credits, water quantity management credits, and public education and outreach credits may be used in combination with each other, however, the total utility fee credit shall not exceed 30% for any site. Additional credits may be allowed for designated Special Protection Areas, when authorized by the Special Protection Area Management Plan.
- Utility fee credits shall be applied to the specific property in the next month after the credit application has been approved by the Stormwater Department (or approved designee).
- Should the practices allowing credits fail to be installed or maintained, the utility credit can be rescinded.

3.1 Utility Fee Credits for Water Quality Treatment

The City of Columbia’s Best Management Practice Design Manual provides detailed design procedures for water quality treatment using the Unified Sizing Criteria. The Unified Sizing Criteria specifies a volume of runoff to be treated to remove pollutants from stormwater runoff. This volume is known as the Water Quality Volume (WQv). Treatment of the WQv is accomplished by intercepting and treating the runoff from approximately 85% of the storms that are expected to occur during the course of a “typical” year. The WQv for a given site can be calculated using the total area of the site, the percent imperviousness, and the 85th percentile rain event (1.2 inches). The Best Management Practice Design Manual requires that the WQv be “treated” with one or more of the following methods:

- Extended detention dry ponds (without a permanent pool): store and release the WQv over a period of 24 hours.
- Wet ponds or stormwater wetlands (with a permanent pool): size the permanent pool to be equal to or greater than the WQv.
- Extended detention wet ponds or extended detention stormwater wetlands (with permanent pool): size the permanent pool to be equal to or greater than ½ of the WQv and store and release ½ of the WQv over a period of 24 hours.
- Bioretention areas, infiltration trenches, or enhanced swales: infiltrate or provide extended detention/filtration of the WQv.
- Better Site Design Stormwater Credits (natural conservation areas, stream buffers, vegetated channels, or overland flow filtration/infiltration zones): calculate reduction in WQv using methods provided in the Best Management Practice Design Manual.

To date, many site development stormwater designs have used extended detention dry ponds as the primary method for post-construction water quality and quantity treatment. As of January 2016, the City of Columbia had multiple impaired streams and total maximum daily load (TMDL) watersheds due to poor water quality. To be more protective of stream water quality, the City of Columbia is incentivizing the incorporation of a higher level of stormwater quality treatment. When post construction stormwater quality best management practices (BMPs) are designed to remove 80% or more of the average annual total suspended solids (TSS) pollutant loading from developed

sites (that are not single family residential land uses), a stormwater utility fee credit will be available for that property or development. The Water Quality BMP Matrix below specifies the incentivized BMPs that the City of Columbia has determined to meet the higher standard for water quality treatment of 80% TSS reduction.

Table 1: Water Quality BMP Matrix

BMP	Variation	Pollutant Removal Efficiencies (%)				Drainage Area (ac)	Implementation Considerations	
		TSS	Total P ¹	Total N ²	Metals		Relative Unit Cost	Relative Maintenance Burden
Incentivized BMPs								
Stormwater Ponds (excluding dry ponds)	Wet Pond	80	55	30	50	>25	Low	Low
	Wet ED Pond					>25	Low	Low
	Micro Pool ED Pond					>10	Low	Low
	Multiple Pond Systems					>25	Moderate	Low
Stormwater Wetlands	Shallow Wetland	80	45	30	50	>25	Moderate	Moderate to High
	ED Wetland					>25	Moderate	Moderate to High
	Pond / Wetland System					>25	Moderate	Moderate to High
	Pocket Wetland					>5	Moderate	Moderate to High
Bioretention Areas		85	60	50	80	≤5	Moderate	Low
Infiltration Trench / Basin		90	60	60	90	≤5	Moderate to High	Moderate
Enhanced Swale	Dry Swale	80	50	50	40	≤5	Moderate	Low
	Wet Swale / Wetland	80	25	40	20	≤5	Moderate	Low
Non-Incentivized BMPs*								
Stormwater Pond	Dry Extended Detention	60	35	25	25	<75	Low	Low
Filter Strip		50	20	20	40	<5	Moderate	Low
Gravity Oil-Grit Separator		40	5	5	--	<1	Moderate	Moderate
Porous Surfaces	Porous Concrete	**	**	**	**	N/A	Moderate to High	Low
	Modular Pavers	**	**	**	**	N/A	Moderate to High	Low
Proprietary Systems		***	***	***	***	***	Moderate to High	Moderate to High

¹ Total Phosphorous

² Total Nitrogen

*Utility fee credits are not available for these BMPs when used alone. However, when used in combination with other BMPs as part of a treatment train achieving 80% or more TSS removal, utility fee credits are available.

** These practices are source controls and are not designed as pollutant removal devices; considered as pervious surfaces

*** The performance of specific proprietary commercial devices and systems must be provided by the manufacturer and should be verified by independent third party sources and data

-- Insufficient data to provide removal efficiency

To incentivize the use of water quality BMPs that meet the City of Columbia's 80% TSS removal target, the City of Columbia will provide a utility fee credit to non-single family residential properties for the implementation of incentivized BMPs listed in the Water Quality BMP Matrix above. New developments and retrofits to existing sites are eligible for utility fee credits for the impervious portion of the property that is treated by an incentivized BMP or series of BMPs that meet the 80% TSS removal goal. For example, if a commercial property owner with 10 acres of impervious area installs a bioretention area that treats 5 acres of impervious area, the property owner would be eligible for one half of the total available utility fee credit. Since the total available utility fee credit is 30%, the property owner would receive a 15% utility fee credit. For a property or development to be eligible for utility fee credits, it must meet the following minimum requirements:

- Water quality BMPs must be designed in accordance with the design procedures and specifications in the City of Columbia's Best Management Practice Design Manual (i.e. appropriately sited and sized to treat the WQv).
- New developments that implement a stormwater treatment train with multiple BMPs in series (i.e. bioretention areas that treat runoff from a portion of the site plus a dry detention pond that manages runoff from the entire site) must provide weighted treatment train calculations to show that the overall TSS removal for the site meets or exceeds 80% if the owner is seeking utility fee credits for the entire property. If the owner does not wish to provide treatment train calculations, utility fee credits are still available for impervious areas treated by an incentivized water quality BMP. Guidance on the weighted treatment train calculation can be found in the Best Management Practice Design Manual.
- Water quality BMPs must be constructed in accordance with the approved design plans, details, and specifications. The City of Columbia will inspect or require documentation from the owner or engineer that the water quality BMP was constructed in accordance with the design prior to issuing a utility fee credit.
- A signed maintenance agreement for each water quality BMP must be approved by the City of Columbia. BMPs must be inspected and maintained perpetually in accordance with the approved maintenance agreement. If, at any point, the City of Columbia determines that a water quality BMP has not been properly inspected or maintained, it reserves the right to revoke a previously approved utility fee credit until sufficient evidence is provided that inspections and maintenance have been performed, per the approved maintenance agreement.

In Special Protection Areas, where severe or specific water quality impairments have been documented, the City of Columbia may provide additional utility fee credits beyond 30% for the implementation of certain water quality BMPs. The City will develop watershed-specific Special Protection Area Management Plans to identify areas that could benefit from higher levels of water quality treatment. Details regarding additional utility fee credits for Special Protection Areas can be found in the Special Protection Area Management Plan.

3.2 Utility Fee Credits for Water Quantity Management

Like many urbanized areas around the country, some of the City of Columbia's watersheds have documented flooding problems, causing damage to properties. When properties in flood-prone watersheds are developed or redeveloped, opportunities exist to mitigate stormwater runoff to reduce that flooding. The City of Columbia's Best Management Practice Design Manual describes the standard water quantity management design criteria which includes the following:

- Channel Protection: Provide 24 hours of extended detention for runoff generated by the 1-year, 24-hour rainfall event to protect downstream channels.
- Overbank Flood Protection: Provide peak flow attenuation for the 2-year, 10-year, and 25-year (for sites 40 acres and larger), 24-hour storm events such that the post-development peak discharges do not exceed the pre-development peak discharges.
- Extreme Flood Protection: Design stormwater management facilities and associated grading plans and site layouts to protect buildings, ponds, roads, and other permanent structures from damages associated with the 100-year, 24-hour storm event.

In watersheds with documented flooding problems, strategies such as requiring runoff rates to be held to levels below the pre-development conditions can reduce localized flooding. The City of Columbia will develop watershed-specific Special Protection Area Management Plans to identify the areas of localized flooding and additional stormwater quantity treatment design criteria. Water Quantity Management utility fee credits will only be available where authorized by a Special Protection Area Management Plan. These plans will outline the utility fee credits available and watershed-specific design criteria for eligibility.

3.3 Utility Fee Credits for Public Education and Outreach

Utility fee credits are available to educational institutions, churches, and other properties that provide education and outreach. In order to qualify for this utility fee credit, the applicant must demonstrate that the public education and outreach program meets the criteria contained in this manual. Utility fee credits for public education and outreach are available as a one-time credit (single month) or as an ongoing program (permanent credit). The minimum criteria for the public education and outreach credit are as follows:

- The public education and outreach program must have a stormwater or water quality focus.
- Documentation of the educational content and attendance (sign-in sheets, number of attendees, etc.) must be provided to the City of Columbia.
- A contact person responsible for the implementation of the program must be designated.

Examples of potential public education and outreach credits are provided below:

- An elementary school constructs a rain garden adjacent to the playground and develops an educational session for students on stormwater, water quality, and the importance of protecting natural resources. The school would be eligible for a permanent utility fee credit as long as the rain garden and stormwater curriculum component are maintained.
- A church organizes a community meeting to talk about the benefits of composting kitchen food scraps, picking up pet waste, and preserving stream buffers. The church would be eligible for a one-time utility fee credit.
- A developer designs a commercial shopping center adjacent to a local stream. A 50' stream buffer along the bank of the stream is preserved, in accordance with the City of Columbia's buffer ordinance. The developer integrates a walking trail, picnic tables, and educational signage along the stream buffer to create an additional amenity and to educate the public on the importance of preserving stream buffers for water quality and stream bank erosion. The commercial development is eligible for a permanent utility fee credit as long as the walking trail and signage are appropriately maintained.

Public education and outreach utility fee credit applications will be evaluated on a case-by-case basis by the City of Columbia's stormwater manager to determine the appropriate credit value. Public education and outreach programs with a large audiences and extensive educational content will generally receive a higher utility fee credit than those with small audiences or minimal content.

The City of Columbia encourages schools, churches, and other property owners to apply for the public education and outreach credit and may offer additional resources to facilitate these programs. Applicants should contact the City of Columbia stormwater manager to find out more information.

Appendix



City of Columbia, SC
 Stormwater Utility Fee Credit for
 Water Quality Treatment
 Application Form

<p>For Official Use Only: Approved Utility Fee Credit: _____ % Approved By: _____</p>
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Instructions: Complete the application form below. A separate application must be made for each property location. Please ensure that all Incentivized Water Quality BMPs have been properly designed, constructed, and maintained prior to submitting application.

Required Attachments:

1. As-Built Drawings and certification, including the following information:
 - a. Size and location of all Incentivized Water Quality BMPs
 - b. All impervious areas (calculate total impervious area in acres)
 - c. Impervious area draining to each Incentivized Water Quality BMP (calculate total treated area in acres)
 - d. Signed and sealed by registered South Carolina Professional Engineer
2. Approved Maintenance Agreement for each Incentivized Water Quality BMP

Note: The City of Columbia reserves the right to request additional information to ensure that Incentivized Water Quality BMPs have been properly designed, constructed, and maintained.

Property Information (please type or print in ink)

Name of Project / Property: _____
 Property Address: _____
 Water / Sewer / Stormwater Account Number: _____
 Property Tax Map Number: _____
 Incentivized Water Quality BMP(s): _____

Percent of Total Impervious Area Draining to Incentivized Water Quality BMP(s): _____ %

Applicant Information

Name: _____
 Address: _____
 Contact Person: _____
 Telephone Number: _____

I hereby request the City of Columbia review this application for a utility fee credit for stormwater quality treatment. I further authorize the City of Columbia to inspect the above identified property and stormwater facility(ies) for the purpose of consideration for a stormwater utility fee credit. I certify that I have authority to make such a request and grant such authority for this property. The attached information is true and correct to the best of my knowledge and belief. (This form must be signed by the property owner or person financially responsible if and individual, or if not, an individual by an officer, director, partner, or registered agent with the authority to execute instruments for the person financially responsible). I agree to provide corrected information should there be any change in the information provided herein.

 Type or Print Name of Owner / Person Financially Responsible

 Title or Authority

 Signature of Owner / Person Financially Responsible

 Date



City of Columbia, SC
 Stormwater Utility Fee Credit for
 Public Education and Outreach
 Application Form

For Official Use Only: Approved Utility Fee Credit: _____ % Approved By: _____ _____
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Instructions: Complete the application form below. A separate application must be made for each separate property location and each proposed public education and outreach program. Please ensure that all proposed public education and outreach programs have been properly planned prior to submitting application.

Required Attachments:

1. Documentation of proposed public education and outreach program such as:
 - a. Presentation materials
 - b. Curriculum materials
 - c. Signage
 - d. Execution plan (if applicable)

Note: The City of Columbia reserves the right to request additional information to ensure that proposed public education and outreach programs meet the requirement.

Property Information (please type or print in ink)

Name of Project / Property: _____

Property Address: _____

Water / Sewer / Stormwater Account Number: _____

Property Tax Map Number: _____

Description of Proposed Public Education and Outreach Program: _____

Applicant Information

Name: _____

Address: _____

Contact Person: _____

Telephone Number: _____

I hereby request the City of Columbia review this application for a utility fee credit for public education and outreach. I further authorize the City of Columbia to review the proposed public education and outreach program for the purpose of consideration for a stormwater utility fee credit. I certify that I have authority to make such a request and grant such authority for this property. The attached information is true and correct to the best of my knowledge and belief. (This form must be signed by the property owner or person financially responsible if and individual, or if not, an individual by an officer, director, partner, or registered agent with the authority to execute instruments for the person financially responsible). I agree to provide corrected information should there be any change in the information provided herein.

 Type or Print Name of Owner / Person Financially Responsible

 Title or Authority

 Signature of Owner / Person Financially Responsible

 Date