



Stormwater Utility Service Charge Credit Technical Manual

CITY OF CARTERSVILLE, GEORGIA

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TABLE OF CONTENTS

1.0 Overview	3
2.0 Definitions	4
3.0 Credit Structure	5
4.0 General Policies	6
5.0 GSMM Related Credits	7
6.0 The Water Education Credit	9
APPENDICES	10
Application for Stormwater GSMM Related Credit – Cover Sheet	11
Structural Control Information Sheet	12
Maintenance Agreement	13
Right-of-Entry Form	15
Education Credit Sheet	16

1.0 Overview

In November of 2006, the City of Cartersville council amended Article II of the City Code and passed a rate ordinance to establish a stormwater utility in the City of Cartersville. The rate ordinance provides that stormwater user fee credits available to properties on two general bases:

- the ability of a site to reduce its impact on the stormwater system, and
- the ability of an educational institution to reduce the City's cost of service through its actions in educating its students.

The ordinance also specified that the department of public works should prepare this manual, the Stormwater Utility Service Charge Credit Technical Manual, that stipulates the design and performance standards of on-site systems, facilities, activities, and services that qualify for application of a service charge credit, and how such credits shall be calculated.

The City's stormwater utility provides a stable and adequate source of revenue for the City's stormwater management program that allocates the costs of stormwater services across every stormwater "user" in the City through a stormwater utility fee (or user fee). Each property that discharges stormwater to the City's stormwater system is charged a fee based on the amount of impervious surface area on the property. The stormwater fee that a property owner pays is directly proportional to the impervious area found on the property. A credit is an ongoing reduction in the fee.

The purpose of the credit policy is to provide non-single-family and non-duplex properties with credit for mitigating stormwater runoff. All non-single-family residential properties may be eligible for a credit of up to 60% (15% each) of their monthly fees for implementing and maintaining eligible Best Management Practices (SCs). The credits that are available to all non-single-family-residential properties (NSFR) are found in the Georgia Stormwater Management Manual (GSMM) and are:

- The Green Space/Water Quality Credit;
- The Channel Protection Credit
- The Overbank Flood Protection Credit
- The Extreme Flood Protection Credit

In addition educational institutions are eligible for a credit of fifty percent (50%) for teaching approved water conservation curriculum. Credits for eligible properties will be based on criteria listed in this policy.

To qualify for any of the credits, the stormwater utility customer must fill out a credit application form and submit it to the Public Works Department. The application will be

evaluated to determine the amount of credit to which the parcel is entitled. The mailing address of the Cartersville Public Works Department: Stormwater Program is Post Office Box 1390, South Erwin Street, Cartersville, Georgia 30120.

In the event that an apartment complex, condominium association, or other organization applies for credit, the credit will be applied to the complex, association, or organization as a whole, incorporating all of the units. Once the credit is approved, individual units will not receive a stormwater fee. The City will add the total charge of all the units minus the credits to the account of the complex, association, or organization. The complex, association, or organization will be responsible for paying this fee. The City will not be responsible for collecting the fee from the residents of the apartment or members of the organization.

2.0 Definitions

Best Management Practice (SC): Engineered structural controls that reduce the discharge of stormwater pollutants.

Credit: A credit is an ongoing reduction in a property's normally-calculated stormwater user fee given for certain qualifying activities that reduce the impact of increased stormwater runoff resulting from development, or provide an ongoing public benefit related to stormwater management.

Detention facility: A detention facility is a stormwater structure, by means of a single control point, which provides temporary storage of stormwater runoff in ponds, parking lots, depressed areas, rooftops, buried underground vaults or tanks, etc., for future release, and is used to delay and attenuate peak flow.

Equivalent Residential Unit (ERU): In order to standardize billing and allocate costs (based on impervious area) to different property types, the City of Cartersville has established an Equivalent Residential Unit (ERU). One ERU is equal to the average amount of impervious area found on a typical single-family residence which is 3,000 square feet.

ERU Rate: The ERU rate is the stormwater fee applied to each base billing unit, or 3,000 square feet or part thereof. In the City of Cartersville, the initial ERU Rate is \$3.75 per month.

Impervious areas: Impervious areas are surfaces on a property that prevent or impede the infiltration of stormwater into the soil at the same rate as natural or pre-developed conditions. Common impervious areas may include, but are not limited to, rooftops, sidewalks, walkways, patio areas, driveways, parking lots, storage areas, compacted gravel or soil surfaces, awnings (and other fabric or plastic coverings) and any other surface that prevents or impedes the natural infiltration of stormwater runoff.

Non-single-family residential property: These properties are termed "other developed land" in the rate ordinance. Non-single family residential properties are individual properties that have 400 square feet or more of impervious surface and are not used as a single-family residential property. This can include, but is not limited to, multiple dwelling unit residential properties (e.g.,

apartments), manufactured home and mobile home parks, commercial and office buildings, public buildings and structures, industrial and manufacturing buildings, storage buildings and storage areas covered with impervious surfaces, parking lots, parks, recreation properties, public and private schools and universities, research stations, hospitals and convalescent centers, airports, agricultural uses covered by impervious surfaces, water reservoirs, and water and wastewater treatment plants.

Retention facility: A retention facility is a stormwater facility that provides storage of stormwater runoff and is designed to eliminate subsequent surface discharges. These facilities are effective in reducing downstream flooding because they do not allow discharge of stormwater runoff to downstream locations except in extreme flood events where the storage volume of the facility is exceeded. Retention facilities can also be effective in reducing stormwater pollution since the pollutants contained in stormwater are not released downstream.

Single-family residential property: These properties termed “detached dwelling units” in the rate ordinance. Single-family residential properties are developed land containing one structure which is not attached to another dwelling and which is designed for occupancy by one family. These may include houses, manufactured homes, and mobile homes located on one or more individual lots or parcels of land. For purposes of the stormwater utility, properties that are designed as a single-family residence but are used for commercial purposes are considered single-family residential properties so long as the property does not have additional impervious areas, such as parking spaces, impervious surfaced playgrounds, or structures or additions to the building.

Stormwater: Stormwater is rainfall runoff, snowmelt runoff, or other surface runoff related to a precipitation event.

3.0 Credit Structure

In order to be eligible for the credit, the owner must supply the necessary documentation (application and forms) as provided at the end of this manual. The documentation must demonstrate that Best Management Practices (SC) as described in the Georgia Stormwater Management Manual (GSMM) have been adhered to in both design and continued performance. Examples include equaling or exceeding the interception and treatment requirements for water quality purposes.

For those applicants who demonstrate through proper documentation that their SCs achieve the objective aim under any or all of the prescribed criteria in the GSMM the amount of credit available is as follows:

- 15% - For meeting or exceeding water quality requirements per the GSMM,
- 15% - For meeting or exceeding channel protection (erosion control) requirements,
- 15% - For meeting the overbank protection detention standard,
- 15% - For meeting the floodplain protection standard

The Georgia Stormwater Management Manual can be found at:

<http://www.georgiastormwater.com/>

Educational institutions with students in any grade K through 12 are eligible for a credit of fifty percent (50%) for teaching approved water conservation curriculum. Credits for eligible properties will be based on criteria listed in this policy. One example of acceptable curriculum, published by the Georgia Water Wise Council can be found at:

<http://168.29.148.205/www/urbanag/waterwise/Publications.pdf>

In no case will the credit for an educational institution be more than one-hundred percent.

4.0 General Policies

General policies for stormwater utility credits are listed below. See the following pages for policies, details, to individual credits.

- Credit is given to eligible properties only, as described in the credit policies presented in this manual and/or in the credit application(s).
- It is the responsibility of the property owner (or his/her designee) to apply for stormwater credits, and to provide the necessary substantiating information with the Credit Application, as described herein.
- Credit applications are available from the Stormwater Management Division (SWMD), Public Works Department. SWMD staff shall not be responsible for initiating applications, performing engineering calculations, or otherwise assisting with the preparation of credit applications.
- The SWMD will review complete credit applications within four (4) weeks after a complete application is submitted. If approved, the credit will be applied in the next month after approval.
- Any approved credit application received within one (1) year of the date of the initiation of user fee billing by the stormwater utility (January 2007) will apply retroactively to:
 - the date of the initiation of user fee billing by the stormwater utility for existing developed property; or,
 - the date of initiation of billing for new construction.
- Multiple credits can be given to eligible properties. However, the total credit available to any one property is 60% of the stormwater fee (100% in the case of educational institutions).

5.0 GSMM Related Credits

Four credits are available under this part of the crediting program. Each can be individually attained without attaining all four.

The credits and general criteria are:

1. **Green Space/Water Quality Credit**
(up to 15% for meeting design criteria)

Controls on the property must reduce the discharge of total suspended solids (TSS) from the water quality volume (WQ_v) at least 80%. The WQ_v is reduced, thus reducing the required treatment volume and corresponding cost, through the use of green space as per the GSMM.

No partial credit is given for lesser TSS reductions. However, credit can be given for that part of the site that is adequately treated by stormwater quality structural controls meeting the 80% TSS reduction goal of the GSMM even if the whole site does not meet the goal. The credit will be prorated based on the proportion of the impervious area treated compared to the total site impervious area.

2. **Channel Protection Credit**
(15% for meeting design criteria)

Controls on the property must capture and meter out the discharge volume from the 1-year 24-hour storm (CP_v) over a period of 24-hours per the GSMM.

No partial credit is given for lesser reductions or for partial site reductions. If this design requirement is waived on a particular property no credit is available.

3. **Overbank Protection (Detention) Credit**
(up to 15% for meeting design criteria)

Controls on the property must reduce the peak flow discharge from the 25-year, 24-hour storm, Q_{p25} , (2- through 25-year storms if there is no channel protection controls) such that the post-development peak flow is equal to or less than the pre-development discharge at the outlet of the site and to the ten-percent point downstream.

Partial credit can be given for older detention structures that are maintained in good working order. There are many detention structures constructed in Cartersville prior to the development of the GSMM. If the detention structure controls the discharge peak from the site such that at a minimum the post-development 10-year, 24-hour storm peak flow is equal to or less than the pre-development discharge at the outlet of the site a ten percent (10%) credit will be given. Other designs will be considered on a case by case basis.

4. **Floodplain Protection Credit**
(up to 15% for meeting design criteria)

Controls on the property must reduce the peak flow discharge from the 100-year, 24-hour storm, Q_f , such that the post-development peak flow is equal to or less than the pre-development discharge at the outlet of the site and to the ten-percent point downstream. If this design requirement is waived on a particular property no credit is available.

If the site has a detention pond designed to reduce the 100-year storm to pre-development conditions at the site outlet but it does not meet the ten-percent downstream standard ten-percent (10%) credit will be given.

Policies specific to the GSMM related credits are as follows:

1. The credit application must be complete and certified by a registered professional engineer licensed to practice in the State of Georgia. For new construction the credit application can be submitted along with the required Stormwater Management Plan submittal.
2. A Maintenance Agreement and Right-of-Entry must be executed along with the credit application. Forms are contained in the Appendix.
3. All special cases not covered by these policy statements will be referred to the SWMD for resolution.
4. There may be cases where credit in excess of the 15% maximum is allowed for a specific control. All such cases will involve an individual property accommodating and treating another property's runoff. For such a case prior approval must be granted in writing from the City of Cartersville Director of Public Works. Credit amounts will be worked out on an individual basis.

6.0 The Water Education Credit

The education credit is available to schools that educate and inform their students about the importance of our surface and groundwater resources using the Water Sourcebook (or similar) educational program. The goal is to reach all students within a school with this information at least once during their time at any one school. The rationale behind this credit is that the information provided by the school will translate into appreciation and stewardship of water resources and thereby reduce negative impacts (usually pollutant impacts) on local streams, ponds and lakes that can result from uninformed citizens. The premise being that our children influence parents in decisions made on the quality of life.

Policies specific to the Water Education Credit are as follows:

1. The Water Education credit is available to K through 12 schools (both public and private) located in the City of Cartersville and is a maximum of fifty percent (50%).
2. The Water Education Credit will be pre-approved on an annual basis for the subsequent school year. Credit received for the year's educational activities will be shown on the monthly utility bill over a twelve-month period beginning in September of the school year.
3. The Water Education Credit requires submittal of both an application and attendance at an annual meeting with the SWMD to review the success of the program. The application need only be completed once, and requires a description of the educational program, list of educational tools used, estimated number of students that will/have receive the education, and the length of the educational program. Credit approval must be renewed each year via approval of an annual report.
4. The credit will be applied only to the school property(s) where the curriculum is taught (e.g., if the curriculum is taught only at Cartersville Elementary School, the credit will be applied only to that property, not the entire City school system).
5. To receive the full credit, the curriculum must be scheduled with the intention that all students should receive the curriculum at least once during a typical tenure at the school. For example, a typical tenure for high school would be four (4) years, so it would be expected that approximately 25% of students in the school would be taught the curriculum.
6. Schools that do not teach the curriculum in a manner that allows all students to receive it within a typical tenure at the school can receive partial credit. The credit will be calculated based on the percentage of students that the curriculum is intended to reach, relative to a 50% base goal.

APPENDICES

CITY OF CARTERSVILLE

Application for Stormwater GSMM Related Credit – Cover Sheet

The following information must be completed for all properties submitting a Stormwater SC Credit Application. Multiple stormwater SCs may be included in the credit assessment, but they must be located on a single property.

Owner or Contact Individual:	Phone number:
Property Address:	
Utility Account No. (if assigned)	
Mailing Address: <i>(If different)</i>	
Credits for City Consideration (check all that apply):	
<input type="checkbox"/> Green Space/Water Quality	<input type="checkbox"/> Overbank Protection
<input type="checkbox"/> Channel Protection	<input type="checkbox"/> Extreme Flood Protection
<p>This application is to request a credit to the assigned stormwater utility fee for the property at the above location. The credit request is based upon _____ (number) Structural Controls (SC) at the site. Please include a brief description of type(s) of SCs on site.</p>	
Owner's Signature	Date

Attach:

- A site sketch plan showing the approximate layout of each structural control with its ID clearly shown. The attached plan(s) should clearly show the location, topography, and drainage basins for each structural control.
- Calculation backup sheets as appropriate illustrating volume, peak and other pertinent calculations.
- Individual Structural Control (SC) Information Sheets for each structural control for which a credit is sought.
- An executed Right-of-Entry form for the site.
- An executed Maintenance Agreement for the site.

CITY OF CARTERSVILLE

Structural Control Information Sheet

A Professional Engineer who has made an assessment of the existing structural control design and the as-built conditions of the control should complete this form. If multiple structural controls exist on a single property, separate Structural Control Information Sheet must be completed for each structure. Please assign a Structural Control (SC) ID number to each control and annotate sketch plan with the ID number.

Basic Information		
Site Name	Total Site Area (acres)	Total Site Impervious Area (acres)
SC ID (self assigned):	Area Draining To SC (acres):	Impervious Area Draining to SC (acres)

Design Volumes	Design Discharges	
Green Space/Water Quality (ft ³)	TSS Removal Percent <input type="checkbox"/> Part of SC in series	WQ Peak Flow (if applicable) (cfs)
Channel Protection (ft ³)	Q _{pre} (cfs)	Q _{post} (cfs)
Overbank Flood Protection (ft ³)	Q _{pre} (cfs)	Q _{post} (cfs)
Extreme Flood Protection (ft ³)	Q _{pre} (cfs)	Q _{post} (cfs)

The following certification is required for approval of all credits for which a certified technical submission was required:

The above information consisting of ____ (number) Structural Control Information Sheets and the information attached was prepared under my supervision as a qualified professional and is true and correct and to the best of my knowledge the facilities were designed in accordance with the GSMM. I have inspected such controls and they appear to be in good working order and in compliance with applicable design criteria.

 Type or print Name

Professional Engineer License Number

 Signature

Date

Phone

SEAL

CITY OF CARTERSVILLE STORMWATER UTILITY Maintenance Agreement

STATE OF GEORGIA

COUNTY OF BARTOW

THIS COVENANT, made and entered into this ____ day of _____, 20____, by (Insert Full Name of Owner) _____ hereinafter called the "Landowner,

WITNESSETH, that WHEREAS, the Landowner is the owner of certain real property described as (Tax Map/Parcel Identification Number) _____ as more particularly described in the warranty deed recorded in Deed Book _____, at page _____, public records of Bartow County, Georgia, hereinafter call the "Property."

-OR-

Exhibit " ____ " attached hereto and made a part of this Covenant.

WHEREAS, the Landowner is proceeding to construct improvements on the "Property"; and

WHEREAS, the Site Plan/Subdivision Plan known as _____, (Name of Plan/Development) hereinafter called the "Plan," filed at the Public Works Department of the City of Cartersville (the "City") which is expressly made a part hereof, as approved or to be approved by the City, and which provides for detention of stormwater within the confines of the Property; and

WHEREAS, Landowner, agrees that the health, safety, and welfare of the residents of the City, require that on-site stormwater structural controls (SCs) be constructed and maintained on the Property; and

WHEREAS, the City requires that on-site stormwater SCs as shown on the Plan be constructed and adequately maintained by the Landowner, in conformity with provisions of Section 24-441 of the Cartersville Municipal Code;

NOW, THEREFORE, in consideration of the foregoing premises, the covenants contained herein, and the following terms and conditions, the Landowner, for itself, its successors, and assigns covenants and agrees as follows:

1. The on-site stormwater SCs, as shown on the Plan, shall be constructed by the Landowner, in accordance with the plans and specifications identified in the Plan.
2. The Landowner shall adequately maintain the stormwater SCs, including all pipes, channels or other conveyances built to convey stormwater from the property, as well as all structures, improvements, and vegetation required to control the quantity and quality of the stormwater. "Adequate maintenance" as used herein means good working condition so that the SCs perform their design functions and are preserved in accordance with the Stormwater Management Operation & Maintenance Plan on file at the Engineering Department of the City
3. On each anniversary of this Covenant, the Landowner shall inspect the SCs and submit an inspection report on a form furnished by the City. The purpose of the inspection is to assure safe and

proper functioning of the SCs. The inspection shall cover the entire SCs, as shown on the Plan, and any deficiencies shall be noted in the inspection report.

4. The Landowner hereby grants permission to the City, its authorized agents and employees, to enter upon the Property for the purpose of inspecting the stormwater SCs as the City deems necessary. The purpose of such inspections is to follow-up on reported deficiencies and/or to respond to citizen complaints. The City shall provide the Landowner copies of the inspection findings and a statement of any necessary repairs required to be made by the Landowner

5. In the event the Landowner fails to maintain the stormwater SCs in good working condition acceptable to the City, the City may enter upon the Property and take whatever steps necessary to correct deficiencies identified in the inspection report and to charge the costs of such repairs to the Landowner. The Landowner expressly understands and agrees that the City is under no obligation to routinely maintain or repair the stormwater SCs, and in no event shall this Covenant be construed to impose any such obligation on the City.

6. The cost of such repairs shall constitute a lien, in favor of the City, enforceable against the property as provided in section 24-441 of the Cartersville Municipal Code.

7. The Landowner agrees to fully indemnify and hold the City harmless from any liability resulting from failure of the stormwater SCs maintained on the Property to operate properly.

8. This Covenant shall be recorded in the public records of the Bartow County, Georgia, and shall constitute a perpetual covenant running with the land, and shall be binding on the Landowner, its heirs, administrators, executors, successors and assigns.

IN WITNESS WHEREOF, the Landowner has executed and delivered this covenant the day and year and year first above written.

Signed, sealed and delivered in the presence of:

LANDOWNER

BY: _____
TITLE

UNOFFICIAL WITNESS

NOTARY PUBLIC

(CORPORATE SEAL)

CITY OF CARTERSVILLE STORMWATER UTILITY Right-of-Entry Form

The following information must be completed for all properties submitting a Stormwater Structural Control Credit Application.

Utility Account No./Parcel ID No.: _____

Owner: _____

Property
Address: _____

Contact
Individual: _____

Phone
Number: _____

This agreement gives authorization by the property owner, _____ (Owner) to the City of Cartersville (City) to enter onto the property at the above listed location, for the purposes of inspection. Inspections may be conducted of any stormwater facility for which a utility credit was applied. Inspections may be performed by City employees or their designee, including consulting engineers, contractors or other representatives.

IN WITNESS WHEREOF, the parties have caused their respective names to be signed hereto on

the _____ day of, 20____ .

Owner _____

City of Cartersville _____

**CITY OF CARTERSVILLE STORMWATER UTILITY
Education Credit Sheet**

Instruction: Applicant must provide adequate documentation to demonstrate to the City of Cartersville Stormwater Staff that sufficient focus and instruction upon stormwater management issues and water quality protection are covered under the environmental science curriculum. Please summarize all appropriate documentation in the table below and attach all necessary documentation.

Name of School:

Environmental Education Program	Grade Levels(s)	Number of Students	Percent of Total Students	Contact Hours