

CITY OF SUFFOLK
STORMWATER UTILITY PROGRAM

CREDIT AND UTILITY FEE ADJUSTMENT
APPLICATION INSTRUCTION MANUAL



Prepared by:
Parsons Brinckerhoff
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1. BACKGROUND & SUMMARY

In December of 2005, The Suffolk City Council passed an Ordinance creating the Storm Water Utility. As part of process in developing the utility, the City appointed a Citizens Advisory Committee to assist in developing polices and procedures that would make the utility user charge as equitable as possible to all citizens and businesses within Suffolk and consistent with other cities in Hampton Roads. This is accordance with the Unified Development Ordinance Article 6 Section 31-611 (5):

“Providing criteria consistent with approaches utilized throughout the Hampton Roads region in order to ensure predictability and fairness in the application of storm water management”

The issue of properties that have a storm water management facility constructed on the site in accordance with the Unified Development Ordinance of the City was brought up, and the question of establishing a credit was considered.

Table 1 presents the credit policies of other local cities in Hampton Roads in effect at that time, and these policies provided guidance for the Suffolk Policy. After deliberating, the Committee agreed that a CREDIT should be allowed for the Non-Residential Class of property - Ordinance 90-520 (a)

CREDIT DEFINED

A credit is a reduction in the utility fee that may be offered in return for some storm water related benefit received by the City either in the quantity or quality of storm water runoff. The ordinance further defines the term:

“Credit” means a reduction in a Non-Residential customer’s storm water user charge for given for certain qualifying activities that either reduce the impact of increased storm water runoff or reduce the City’s cost of providing storm water management.

CREDIT ELIGIBILITY

Credits in the Suffolk Utility program are limited to the Non-Residential class only. Only structural Best Management Practices are eligible for credits. Non Structural activities such as education, street sweeping, and litter control are not eligible. Purchased Credits from a Regional BMP approved by the City may also be applicable for Credit Allowances.

APPLICATION

The property owner or his agent must make the application for credit following the policies and procedures, both technical and administrative as outlined in this

manual. The initial application once approved by the City will provide a credit for four subsequent years (for a total of five years per application approval) unless revoked by the City for non-compliance. An easement for inspection purposes or maintenance if determined to be necessary by the City to safeguard the Stormwater Management Program of the City and a Long Term Maintenance Plan for maintenance by the owner are required.

APPLICATION FEE

There are no fees connected with filing an application for credit.

Table 1 - CREDIT POLICY OF HAMPTON ROADS CITIES

<u>City</u>	<u>Applicants</u>	<u>Available Credits</u>	<u>Maintenance Agreement</u>
Chesapeake	Residential & Non-residential	20% Maximum for Quality. 20% Maximum for Quantity. Credit Reduced by 50% for Public BMP. Not less than 1 ERU	Required
Hampton	Non-residential	45% Maximum	Required
Portsmouth	Non-residential	25% to 40% based on Level. 75% for Properties w/ NPDES Permit that Do not Discharge to City System.	Required
Norfolk	Non-residential	60% Maximum.	Required
Newport News*	Residential & Non-residential	25% Maximum for Non-residential. 15% Maximum for Residential.	Required
Virginia Beach	Non-residential	30% Maximum for Quality	Required

Newport News has a 1 ERU minimum, but the credit to residential homeowners is administered by a mail-in card for participating in the household hazardous waste program.

2. TECHNICAL DEFINITIONS

Best management practices (BMPs):	Structural controls and non-structural controls that temporarily store urban storm water runoff to reduce flooding and improve water quality.
Design storm:	A rainfall event of specified size and return frequency that is used to calculate the runoff volume (e.g., a storm that occurs on the average once every 2 years) and peak discharge rate (e.g., a storm that occurs on the average once every 10 years) to a BMP.
Detention:	The temporary storage of storm runoff in a BMP, which is used to control the peak discharge rates.
Detention time:	The amount of time water actually is present in a BMP. Theoretical detention time for a runoff event is the average time water resides in the basin over the period of release from the BMP.
Directly Connected Impervious Area:	The impermeable area within the watershed which enters the drainage system without traveling across permeable surfaces, i.e. roof surfaces which drain through roof drains directly into the storm system.
Extended Detention Basin:	A structural BMP which holds storm water for a lengthened period of time in order to reduce peak discharge.
Forebay:	An extra storage area provided near an inlet of a BMP to trap incoming sediments before they accumulate in a pond BMP.

Freeboard:	The space from the top of an embankment to the highest water elevation expected for the largest design storm stored. The space is required as a safety margin in a pond or basin.
Hydrograph:	A graph showing a variation in the water depth or discharge in a stream or channel, overtime, at a specified point of interest.
Impervious area (imperviousness):	Impermeable surfaces, such as pavement or rooftops, which prevent the infiltration of water into the soil.
Initial losses:	The amount of rainfall not transformed into runoff due to interception, depression storage, and infiltration.
Lag time:	The increment of time from the center of mass of rainfall to the peak of the hydrograph (may be assumed to be 0.6 multiplied by the time of concentration).
Low flow channel:	A channel from inlet to outlet in a dry basin which is designed to carry low runoff flows or baseflow, directly to the outlet without detention.
Manufactured BMP	A structural control or BMP that is typical proprietary and manufactured off-site.
NRCS:	Natural Resources Conservation Service is the Federal Agency charged with conserving and sustaining natural resources. Formerly the Soil Conservation Service.
Non-Structural BMP:	A technique to improve water quality or reduce quantity of water that is not constructed. Examples are street sweeping, litter control, education.
Peak discharge:	The maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.
Pilot channel:	A channel that routes runoff through a BMP to prevent erosion of the surface.
Retention:	The holding of runoff in a basin without release except by means of evaporation, infiltration, or emergency bypass.

Retrofit:	To install a new BMP or improve an existing BMP in a previously developed area.
Return frequency:	A statistical term for the average time of expected interval that an event of some kind will equal or exceed given conditions (e.g., a storm water flow that occurs on the average every 2 years).
Riprap:	A combination of large stones, cobbles, and boulders used to line channels, stabilize banks, reduce runoff velocities, or filter out sediment.
Riser:	A vertical pipe extending from the bottom of a pond BMP that is used to control discharge rate from a BMP for a specified design storm.
Runoff coefficient:	Ratio of runoff to precipitation.
Soil group, hydrologic:	A classification of soils by the NRCS into four runoff potential groups. The groups range from A soils, which are very permeable and produce little runoff, to D soils, which are not very permeable and produce much more runoff.
Spillway:	A depression in the embankment of a pond or basin which is used to pass peak discharge greater than the maximum design storm controlled by the pond.
Structural BMP:	A constructed device that temporarily stores or treats urban storm water runoff to reduce flooding and/or remove pollutants.
Time of concentration:	The time required for surface runoff from the most remote part of a drainage basin to reach the basin outlet.
Wet Pond:	A structural BMP which retains storm water runoff in a permanent pool for water quality enhancement by settling pollutants.
Percent Credit:	Percent of the user fee that can be granted in total credit calculation.

3. ADMINISTRATIVE POLICIES

It is the City of Suffolk's intent to encourage sound technical design practices which reduce the impact of development on the drainage system through a simple but effective crediting system. Credits will be granted for any combinations of peak and volume reduction and water quality improvements. Certain policies have been developed to help maintain this balance between simplicity and effectiveness. Further questions on these policy statements should be directed to the City Storm Water Manager.

Residential Class:	Credit will not be allowed for residential properties which include single family or multi-family homes. Credit will not be allowed for any properties which do not pay a storm water fee.
Non Residential Class:	Structural BMPs in Non-Residential Class properties will be eligible for a credit as well as credit purchases from a City approved Regional Facility.
Non Compliance:	Any BMP with credits approved may have those credits revoked in total or in part at any time if the BMP is not in compliance with the proper operation and maintenance or design features.
Right to Inspect:	Since the credit is conditional upon proper operation and maintenance, the property owner must grant permission for the City of Suffolk to perform periodic inspections with a minimum of an annual inspection.
Maintenance Requirements:	Credit will only be allowed for properties which maintain their structural controls in fully functional condition and according to maintenance criteria and BMP standards issued by the City of Suffolk.
Existing Structure Credits:	Credit will be allowed for previously constructed controls. The amount of credit granted will be determined by the methods of design as outlined within the body of this document.
Minimum ERU:	Any property shall have a minimum fee equal to 1 ERU after the credits are subtracted from the original value.
Appeals:	An appeal must be filed in writing with the Stormwater Manager. Should

satisfaction not be achieved, an appeal may be lodged with the Director of Public Works. The Director shall convene the Appeals Committee consisting of the Director of Public Works, the Stormwater Manager, and a representative of the City Attorney's office. The Appeal Committee shall reconsider the denial and provide an opinion within 60 days of the denial.

Timing of Applications:

It is the intent of City of Suffolk that all applications will be reviewed and credits determined within thirty days after submittal of a complete and correct application package. For new construction, the credit will be effective on the 1st annual billing cycle for the property following completion of construction. For existing facilities that apply for a credit, the credit will be effected on the next annual billing cycle for the property.

Retroactive Credit Billing Adjustments

Retroactive Billing adjustments for credit are not available.

Credits Posted

All credits in stormwater user fee shall be coordinated to be reflected in the property ownership as recorded in the next Landbook (July 1) with the credit being reflected in the following annual real estate property tax bill.

4. BMP DESIGN STANDARDS

The issue of Stormwater Runoff is addressed in the Unified Development Ordinance, Article 6, Design and Improvement Standards and Section 31-611 Stormwater Runoff. This document refers to sources of Design Standards and Criteria. A primary source for Design Standards and Specifications for the BMP's for which a credit will be allowed can be found in the Virginia Stormwater Management Handbook. Alternative criteria may be proposed and will be considered by the Stormwater Division of the City of Suffolk.

5. POLLUTANT LOAD REMOVAL EFFICIENCIES

The phosphorus load generated for pre and post development conditions shall be computed using the methodology of the Department of Conservation and Recreation's, Division of Chesapeake Bay Local Assistance. The Table 2 provides the guidance for BMP's and Prosperous Removal Efficiencies.

TABLE 2

BMPs and Phosphorous Removal Efficiencies

Water Quality BMP	Target Phosphorous Removal Efficiency
Vegetated Practices	
Vegetated Filter Strip – Min Std. 3.14	10%
Grass Swale (with check dams) – Min Std. 3.13	15%
Water Quality Swale – Min Std. 3.13	35%
Detention Practices and Wetlands	
Extended Detention (30-hr down of 2 X WQV) – Min Std. 3.07	35%
Enhanced Extended Detention (30-hr draw down of 1 x WQV shallow marsh) – Min Std 3.07	50%
Constructed Wetlands (2x WQV) – min Std. 3.09	30%
Retention Practices	
Retention Basin I (3 x WQV) – Min Std. 3.06	40%
Retention Basin II (4 x WQV) – Min Std. 3.06	50%
Retention Basin III (4 x WQV, aquatic bench) – Min Std. 3.06	65%
Infiltration Practices	
Infiltration Facility (storage volume=1/2" runoff from impervious areas) – Min Std. 3.10	50%
Infiltration Facility (storage volume=1" runoff from impervious areas) – Min Std. 3.10	65%
Bioretention / Biofiltration Practices – Min Std. 3.11, 3.11a, 3.11b	
Bioretention Basin (capture/treatment volume = 1/2" runoff from impervious areas)	50%
Bioretention Basin (capture/treatment volume = 1" runoff from impervious areas)	65%
Bioretention Filter (capture/treatment volume = 1/2" runoff from impervious areas)	50%
Bioretention Filter (capture/treatment volume = 1" runoff from impervious areas)	65%
Green Alleys (capture/treatment volume = 1/2" runoff from impervious areas)	50%
Green Alleys (capture/treatment volume = 1" runoff from impervious areas)	65%
Sand Filters	
Intermittent Sand Filter (treating 1/2" runoff from impervious areas) – Min Std. 3.12	65%
Manufactured BMPs Min Std. 3.15	
Hydrodynamic Structures (Stormceptor, Vortechincs, Downstream Defender, BaySaver)	15-20%
Filtering Structures (StormFilter, StormTreat System)	50%

Notes:

WQV=Water quality volume (first 1/2" of runoff from the impervious surfaces)

The 30-hour draw down time of water quality volume pertains to the brim drawn down time, beginning at the time of peak storage of the water quality volume. Brim draw down time means the time required for the entire calculated volume to drain out of the basin. See Virginia Stormwater management Handbook Section 5-6.2 for methods to verify the draw down time and design performance.

Design Standards and Specifications for the BMPs referenced in the table above can be found in the Virginia Stormwater Management Handbook.

See DCR's Technical Bulletin 6 for Filterra Bioretention Filter System.

6. PROCEDURES

The credit must be applied for using the Suffolk Non-Residential Credit Form. The following documentation must accompany the form.

1. Site plan and as built construction drawings or construction plans verified that the facility was built according to the approved plans. The drawings must be signed and sealed by a Professional Engineer or Licensed Surveyor in Virginia. The site plan must substantially meet the site plan requirements of the City of Suffolk and the Topographic details, overland flow paths, ditches, piping, inlets, and stormwater management facilities must be shown to scale. In the event a site plan or construction plan is not available, a map showing the parcel, impervious areas, and stormwater facilities shall be provided. The City may request survey data tying the parcel into the City's GIS mapping.
2. The drainage area tributary to the facility must be shown on a topographic map. A topographic map especially prepared for the site, existing City mapping or at a minimum a USGS Topographic map shall be provided. The drainage area must be delineated and size determined.
3. The hydrologic and hydraulic calculations for the facility must be provided using a methodology accepted by VDOT, the VDCR Virginia Stormwater Management Manual or an approved method acceptable by the City. The method must calculate the peak flow for pre and post development when applying for the water quantity credit. The method must calculate the hydrograph for the site for pre-development condition and the inflow and discharge hydrograph for the facility when applying for the water quality credit.
4. Outflow from stormwater facilities must discharge into an adequate channel and velocities must non-erosive. VDCR Technical Bulletin Number 1 – Stream Channel Erosion Control shall be the guidance document to demonstrate an adequate outfall.
5. Quantity Credit – If a structural BMP is necessary on the site to reduce peak flows because of an inadequate outlet, a credit is available. Compute the 10 year pre and post development peak flows by an acceptable method for all drainage areas whether or not there is a BMP on the partial area and total the peak flow.

Total Pre-development peak flows _____

Total Post-development Peak flows _____

Divide Total Pre-development by total Post- development peak flows. If the number is 1 or more, the credit is the full 20% available.

If the number is less than one, it would indicate that one of partial drainage areas most likely does not have a structural BMP built to current design standards most likely because the facility was constructed prior to the site plan ordinance requiring stormwater management facilities. Multiply that number by 20% to obtain the credit available.

6. Quality Credit – Credit for quality is based on the removal of phosphorus. Calculate the pollutant removal requirement for the site, new or redevelopment, using the Chesapeake Bay Local Assistance Guidance calculations. The calculation of the Pollutant Removal Requirement establishes the type of BMP necessary. If the selected BMP meets the efficiency required, the credit allowed is the maximum 20% of the calculated bill. If the selected BMP provides a removal efficiency of less than the calculated efficiency the credit is that proportion of:

BMP Removal Rate

BMP Efficiency Required = effective efficiency removed

This situation would only be occurring in BMP's constructed prior to or outside of the Chesapeake Bay Overlay District. If the removal rate is greater than the efficiency, the effective efficiency removal exceeds 1.0. A maximum of 1.0 is allowed. The effective efficiency removal is multiplied by the 20% to obtain a partial water quality credit.

7. Credit for quantity or quality purchased from an approved City Regional Stormwater Management Facility – An Owner may get the same level of credit if credits are purchased from a City Approved Regional BMP that has been designed to provide excess pollutant removal or flow reduction for the purpose of credit sales. The maximum would still be 40%.
8. Total credits - The total credits are the sum of the quantity and quality credits for the property which would total a maximum of 40%.
9. ERU Computation – The credit is computed based upon a reduction of flow and pollutant load and is not a reduction of ERUs. However from the billing standpoint the bill needs to reflect ERUs. The ERUs as computed based upon the impervious area are reduced by the total credit allowance. As an example a property with 100 ERUs with a 20% credit would be billed as 80 ERUs. In no circumstance will the ERU be less than 1.
10. Maintenance Agreement – To obtain and to maintain the credit, the BMP will be subject to City inspection to verify the Operations and Maintenance is in accordance with the Agreement on file with the City.

APPLICATION FOR Stormwater Utility Fee Non-Residential Credit

City of Suffolk
Department of Public Works
441 Market Street
Suffolk, Virginia



New Renewal

Identification & Parcel Data

Parcel Number: _____

Proposed/Existing Use of the Parcel: _____

Business Name: _____ **Applicant (if different from owner):**

Owner's Name: _____ Name (print): _____

Street Address: _____ Mail Address: _____

City/State/Zip: _____ City/State/Zip: _____

Telephone No.: _____ Telephone No.: _____

Fax No.: _____ Fax No.: _____

Credit

Credit Request: _____ % ERU's before credit: _____ ERU's after credit: _____

(Not less than 1)

BMP Type: _____ Discharge to major outfall Public System

Requested credit for quality on site _____ Requested credit for quantity on site _____

Requested credit for quality on & off site _____ Requested credit for quantity on & off site _____

Purchases from regional BMP quality _____ Purchase from regional BMP quantity _____

Supporting Documentation

Attach supporting documentation signed and sealed by a Professional Engineer or Class B Surveyor licensed in the Commonwealth of Virginia.

Map of property showing property lines, impervious area used in calculation, outfall, and BMP's.

Easement or Right of way documentation for City inspection.

BMP Maintenance Agreement.

Applicant Signature: _____ Date: _____

City Use

Credit Approved at _____ % By: _____ Date: _____

Disapproved and returned by: _____

BMP Maintenance Agreement filed by: _____ Date: _____

Easement of right of way verified by: _____ Date: _____

EFFECTIVE DATE OF CREDIT: _____