

Stormwater Utility Fee Credit Manual



Commercial, Industrial, Institutional, and Multifamily Residential Properties



City of Roanoke, Virginia
Department of Planning, Building, and
Development
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Roanoke, VA 24011

TABLE OF CONTENTS

GLOSSARY.....	ii
I. INTRODUCTION.....	1
II. STORMWATER UTILITY FEE.....	2
III. STORMWATER UTILITY CREDIT AMOUNTS.....	3
IV. STORMWATER UTILITY CREDIT ELIGIBILITY.....	6
V. STORMWATER QUALITY CREDIT CALCULATION.....	7
VI. STORMWATER QUANTITY CREDIT CALCULATION.....	8
VII. VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM STORMWATER PERMIT CREDIT.....	8
VIII. APPLYING FOR A STORMWATER UTILITY CREDIT.....	9
IX. MAINTENANCE REQUIREMENTS.....	10
X. RESTRICTIONS ON CREDITS.....	10
APPENDIX A: STORMWATER UTILITY FEE CREDIT APPLICATION FOR COMMERCIAL, INDUSTRIAL, INSTITUTIONAL, AND MULTI-FAMILY RESIDENTIAL PROPERTIES.....	12
APPENDIX B: TYPICAL BEST MANAGEMENT PRACTICES.....	14
APPENDIX C: PROCEDURE FOR CALCULATION OF CREDITS.....	15
APPENDIX D: ADDITIONAL RESOURCES.....	18

GLOSSARY

BMP or “Best Management Practice”: Schedules of activities, prohibitions of practices, including both structural and nonstructural practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters and groundwater systems from the impacts of land-disturbing activities.

Erosion: The process of water or wind moving soil and depositing it elsewhere. Erosion is increased when vegetation is removed or an area is denuded.

Groundwater: Water held in soil pore spaces below ground. Groundwater can eventually flow to a drinking water well or area waterways.

Impervious Surface: Any area improved, graded, and/or surfaced with impervious material or resulting in impervious conditions. An impervious material or condition is present when the natural infiltration of water into the soil is significantly impeded or prevented. An impervious surface includes that portion of the land surface covered by an elevated structure, such as a bridge or deck, regardless of whether the surface itself remains pervious or impervious. *Note: The [Virginia Stormwater Management Handbook](#) defines gravel as impervious because once it is installed it is compacted and impedes the flow of water into the ground.

Infiltration: The process by which water on the ground surface is absorbed into the soil.

Non-Single Family Residential or Other Properties: Any property that is not a single family residential property. Types of non-single family residential or other properties include commercial, industrial, multi-family residential, and institutional properties to name a few. *Note: Properties applying for credits for a regional BMP that serves multiple properties (single family residential or otherwise) will need to follow the rules listed in the Commercial, Industrial, Institutional, and Multifamily Residential Properties (Non-Single Family Residential or Other Properties) Credit Manual.

Pervious Surface: A surface composed of material that allows water to be absorbed into the ground, reducing runoff and filtering pollutants.

Regional BMP: BMP that accepts and treats runoff from multiple separate properties. Regional BMPs are often owned by a Property Association or other entity responsible for regular maintenance and inspections.

Runoff: Precipitation that does not absorb into the ground but flows down-slope along the surface. Runoff volume, flow rate, and pollutant load increases with impervious areas.

Sediment: Soil and rock that is moved and deposited by water. Sediment is usually suspended in water until flow rates decrease enough that it can settle out.

Sheet Flow: An overland flow of water in the form of a thin, continuous film rather than concentrated into channels.

Single Family Residential Property: Property on which a dwelling exists which is occupied exclusively by one family for noncommercial purposes. Duplexes are included as a single family residential property for the purposes of this credit manual.

Stormwater: Precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff drainage.

Water Quality: Refers to the chemical, physical, and/or biological characteristics of water.

Water Quantity: Refers to the flow rate or volume of runoff from a property.

Note: The definitions of terms that appear above are to facilitate your review of this Manual. Please note that these terms may also be defined by applicable laws, ordinances, rules, or regulations and are controlled by those definitions. For completed definitions of these terms under applicable laws, ordinances, rules, or regulations, please consult: the [City of Roanoke Stormwater Management Ordinance](#), the [City of Roanoke Stormwater Design Manual](#), and the [Virginia Stormwater Management Handbook](#).

I. INTRODUCTION

The City of Roanoke has 13 major rivers and within its boundaries and seven of these are listed as impaired for water quality by the Virginia Department of Environmental Quality (DEQ). Investment needs to be made in capital improvements, system maintenance, and regulatory compliance to ensure that environmental standards are met and our valuable natural resources are protected.



Failing outlet pipe.

Our stormwater system is aging with much of it having exceeded its useful design life of 50 years, and it has seen little investment in decades. At the same time, our impervious surface areas (paved driveways, rooftops, access roads) have increased many-fold as our city has developed into a regional center for commerce, healthcare,

retail, entertainment and the arts. The City has a current backlog consisting of hundreds of stormwater projects, estimated to cost tens of millions of dollars, which need to be implemented to effectively minimize flooding and control pollutants before they enter our local waterways. Combine these capital infrastructure demands with the need to provide on-going maintenance of hundreds of miles of existing stormwater pipes and the requirement to meet increasing Federal Clean Water Act stormwater permit requirements, and the City faces a significant financial challenge.

City leaders recognize that stormwater management solutions range from individual citizen and business participation to large-scale stormwater projects, but any real solution will require an on-going dedicated level of funding and focused effort. To that end, in 2013, the City Council approved the implementation of a Stormwater Utility Fee to fund the City's public stormwater management program. In May 2014, the City Council adopted the Stormwater Utility Fee Schedule.

II. STORMWATER UTILITY FEE

Stormwater runoff is proportional to the amount of impervious surface on developed property. When a wooded or grassy area is paved or replaced with impervious material, the result is less infiltration of stormwater. Hardened or “impervious” surfaces such as driveways, parking lots, streets and rooftops do not allow rainfall to soak into the soil, so more of the rainfall becomes stormwater runoff and increases the demand on the system. This stormwater runoff also accumulates pollutants such as oil and grease, chemicals, nutrients, metals, and bacteria as it travels across land and discharges into our rivers and streams. Both the quantity and the quality of runoff need to be managed before discharge into local rivers and streams.

Therefore the amount of the stormwater fee is based on the amount of impervious area on each developed property in the City. The City used aerial photography and Geographic Information System (GIS) technology to identify and measure the impervious area on all developed properties in the City. The green hatched areas in the photograph below demonstrate the capture of impervious features which include rooftops, driveways, and walkways.



For billing purposes, the fee is based on each 500 square feet of impervious area identified, rounded to the nearest whole number. So for the two examples shown above, the fee for the property on the left would be based on 5 billing units (2,477 square feet divided by 500 square feet or 4.95) and the property on the right, which has almost 800 square feet less, would be based on 3 billing units (1680 square feet divided by 500 square feet or 3.3). The monthly fee per billing unit will be phased in over three years as shown in the list below:

2014: \$0.30/Billing Unit/Month

2015: \$0.60/Billing Unit/Month

2016: \$0.90/Billing Unit/Month

The monthly fee for the two properties shown above will therefore be:

Year	Left Property Monthly Utility Fee	Right Property Monthly Utility Fee
2014	\$1.50	\$0.90
2015	\$3.00	\$1.80
2016	\$4.50	\$2.70

All developed properties, including City owned properties and properties owned by tax-exempt organizations, are subject to the fee unless such properties are expressly exempt from the fee under State Code or under the Stormwater Utility Ordinance.

The fee will go into effect in July 2014 and be billed using the City’s real estate tax billing system. Any parcel owner may request a fee adjustment in accordance with [§ 11.5-9 of the Code of the City of Roanoke](#) within 30 days of receiving the bill.

III. STORMWATER UTILITY CREDIT AMOUNTS

When establishing the Stormwater Utility, the City Council acknowledged that certain on-site stormwater management activities can reduce the impact on the storm drain system by treating or reducing the stormwater runoff from a developed property. In order to recognize the positive impact that these on-

site activities can have, properties that install and maintain stormwater best management practices (BMPs) that reduce the stormwater flow rate, flow volume or pollutant load of runoff from their property can qualify to receive a reduction in their stormwater fee. A BMP is an activity, measure or facility that prevents or reduces the transport of pollutants, controls stormwater volume or rate or otherwise limits the impacts to the storm drainage system. These measures can include on-site practices such as bioretention, vegetated swales, constructed wetlands, rain gardens and detention ponds that manage stormwater at its source.

The amount of stormwater utility fee credit will be based on the reduction of stormwater volume and pollutants flowing from a property and obtained through the installation and continued use, operation and maintenance of the BMP(s) which is not owned or maintained by the City. The credit amount is determined based on the type of BMP and the percentage of the site's impervious area that drains to the BMP. The maximum credit allowed is fifty percent (50%) of the stormwater fee for the property being served by the BMP(s).



Pervious concrete installed at City of Roanoke Fire Station #3.

1. Credits for on-site stormwater management facilities are determined as follows:
 - A ten percent (10%) water quality credit is allowed if the BMP(s) provide water quality benefits in accordance with [§ 11.4-16 of the Code of the City of Roanoke](#).
 - A ten percent (10%) water quantity credit is allowed if the BMP(s) provide both stream channel erosion control benefits in accordance with [§ 11.4-17 of the Code of the City of Roanoke](#) and flood control benefits in accordance with [§ 11.4-18 of the Code of the City of Roanoke](#).
 - At the City Manager's discretion, a credit of up to five percent (5%)

may be granted in addition to that provided for standard water quality or water quantity credits, if a BMP achieves benefits above the minimum required by the [Code of the City of Roanoke](#). The stormwater criteria used for comparison is based on the standards that were applicable when the property was improved. It shall be the Applicant's responsibility to provide calculations illustrating how the facility exceeds the applicable stormwater management requirements.

- BMPs that do not meet the minimum criteria listed above may still be considered on a case-by-case basis if the Applicant can demonstrate the BMP achieves permanent reductions in stormwater runoff volumes, velocity, and/or pollutant loads.
 - If an on-site stormwater management BMP is part of a voluntary retrofit, meaning it was installed voluntarily and not as a requirement of the City or another governmental agency, the amount of credit the facility is eligible to receive shall be doubled, but in no case can it exceed 50% of the applicable fee.
2. The owner of an eligible BMP that treats off-site impervious surface, meaning the stormwater runoff that originates outside of the boundary of the subject property, may take a credit for treating the off-site impervious surface. The off-site credit amount shall be calculated in the same manner as if the BMP was located on the off-site parcel. However, in no case shall the total credit exceed the total amount of the annual stormwater utility fee charged to the parcel owner.
 3. Credits may also be provided if a property owner has an eligible Virginia Pollutant Discharge Elimination System (VPDES) Stormwater Permit. Subject to the maximum credits as described above, a ten percent (10%) credit may be allowed for any parcel, or portion of a parcel, that is subject to, and in compliance with, an individual or general VPDES stormwater permit.
 4. Regional BMPs: Credits may be provided to individual properties served by a Regional BMP. In circumstances where an applicant is attempting to claim credit for a BMP that is owned by a separate entity,

proof that the Applicant shares in the maintenance obligations and costs will need to be submitted in order for credit to be applied.

IV. STORMWATER UTILITY CREDIT ELIGIBILITY

In order to be eligible for a stormwater fee credit, the property owner must:

- submit a completed Commercial, Industrial, Institutional, and Multi-family Residential Credit Application Form, as provided by the City, to the Department of Planning, Building, and Development;
- have a properly executed maintenance agreement with the City in place or execute a new maintenance agreement;
- demonstrate to the City's satisfaction that the BMP is functioning as originally designed and constructed based on guidance from the [Virginia Stormwater Management Handbook](#) or from the [Virginia Stormwater BMP Clearinghouse Standards and Specifications](#) (documentation must include pictures of the exterior of the BMP);
- demonstrate with calculations and as-built drawings that the BMP met the criteria in existence at the time of construction in at least one of the following sections of the Code of the City of Roanoke:
 - (i) [§ 11.4-16, Water Quality](#); or
 - (ii) Both [§ 11.4-17, Stream Channel Erosion](#), and [§ 11.4-18, Flooding](#).

If the facility meets the criteria for both (i) and (ii) above, the applicant can qualify for up to 20% credit.

BMPs that are not listed in the Virginia Stormwater Management Handbook or the Virginia Stormwater BMP Clearinghouse may still be considered on a case-by-case basis at the discretion of the City Manager if it is demonstrated by a Professional Engineer that the facility achieves a permanent reduction in post-development stormwater flow and/or pollutant loading. The credit may be prorated based on an analysis of the benefits of the reduction.

V. STORMWATER QUALITY CREDIT CALCULATION

A Stormwater Quality credit of up to 10% is available to applicants who have installed an approved Best Management Practice (BMP) that provides for the permanent reduction of pollutants from the stormwater runoff leaving their property. The City references the [Virginia Stormwater BMP Clearinghouse Standards and Specifications](#) for which BMPs qualify for the Stormwater Quality Credit.



Bioretention basin located in Christiansburg, VA.

Please recall that stormwater quality credits may be given when BMP(s) provide for a reduction in the amount of stormwater pollution.

As noted above, the amount of credit earned for a property is determined by the number and type of BMP(s) installed and the percentage of the impervious area on the site that drains to the BMP(s). The credit is applied to the percentage of the impervious surface area that is treated by the BMP, not the total amount of impervious area on the site. The following formula will determine the amount of credit earned by a Stormwater Quality BMP:

$$\text{Credit Earned} = (10\% \text{ Credit}) * (\% \text{ of impervious area treated}) * (\text{Stormwater Fee})$$

All BMPs must be designed, constructed and maintained in accordance with the Code of the City of Roanoke, the [Virginia Stormwater Management Handbook](#), or the [Virginia Stormwater BMP Clearinghouse Standards and Specifications](#). Prior approval of other BMPs by the City of Roanoke may also be acceptable; however, property owners wishing to access such approval must first coordinate with the Department of Planning, Building and Development by calling 540-853-1730 or via email at planning@roanokeva.gov.

VI. STORMWATER QUANTITY CREDIT CALCULATION



Green roof installed at City of Roanoke
Municipal Building.

A Stormwater Quantity credit of up to 10% is available to applicants who have installed an approved Best Management Practice (BMP) that reduces stormwater flow rate and/or volume. These practices reduce the demand or burden on the City's storm sewers and reduce erosion of our rivers and streams. The City will reference the Virginia Department of Environmental Quality's guidelines for which BMPs qualify

for the Stormwater Quantity Credit. Please recall that stormwater quantity credits may be given when BMP(s) provided for a reduction in the volume or rate of stormwater flow.

The amount of credit earned by a property is determined by the type of BMP installed, the number of BMPs installed and the percentage of the impervious area on the site that drains to the BMP. The credit will apply to the percentage of the impervious surface area that is treated by the BMP. The following formula will determine the amount of credit earned by a Stormwater Quantity BMP:

$$\text{Credit Earned} = (10\% \text{ Credit}) * (\% \text{ of impervious area treated}) * (\text{Stormwater Fee})$$

All BMPs must be designed, constructed and maintained in accordance with the Code of the City of Roanoke, the Virginia Stormwater Management Handbook, or the Virginia Stormwater BMP Clearinghouse Standards and Specifications.

VII. VIRGINIA POLLUTANT DISCHARGE ELIMINATION SYSTEM STORMWATER PERMIT CREDIT

Some activities that take place at industrial or commercial facilities, such as

material handling and storage, are often exposed to the elements. As runoff from rain or snowmelt comes into contact with these activities, it picks up pollutants and transports them to the storm sewer system and ultimately into the creeks and rivers in the Roanoke area. To minimize the impact of these discharges, the Virginia Department of Environmental Quality requires such facilities to register for a VPDES (Virginia Pollutant Discharge Elimination System) Stormwater Permit.

Property owners who hold a valid and compliant VPDES Stormwater Permit and who discharge either to a stream through a private facility or to the City's storm sewer system are eligible to receive a 10 % credit. In addition to submitting a credit application, documentation to receive a credit for a VPDES Permit includes a copy of the VPDES Stormwater Permit and a copy of the facility's Stormwater Pollution Prevention Plan (SWPPP).

VIII. APPLYING FOR A STORMWATER UTILITY CREDIT

Prior to receiving a stormwater credit the property owner must submit a completed Commercial, Industrial, Institutional, and Multi-family Residential, Stormwater Utility Fee Credit Application, included in this manual, along with applicable supporting information on the design and installation of the BMP(s). The property owner is responsible for making all appropriate applications prior to receiving a credit on their stormwater utility account. Application and documentation requirements include a complete application, executed Stormwater Maintenance Agreement, inspection photographs, as-builts, design calculations, and construction plans. There is no fee for a credit application.



When a credit application is received by the City an administrative completeness review will be conducted. If the application is not complete, the City will contact the applicant and may request additional information necessary to complete the application.

Once a complete application has been received, the City will review all documentation and the applicant will be notified in writing when an application is approved or denied within 30 calendar days of submittal of a complete application. Once the credit is approved, it will go into effect the calendar year after approval of the application.

If an application is denied, the applicant can appeal the decision to the Director of the Department of Planning, Building, and Development in writing within 30 days of the denial. The Director shall make a determination within thirty (30) days of receipt of an appeal and notify the Applicant in writing. If the Applicant is not satisfied with the response of the Director, a written appeal can be submitted to the City Manager who shall offer a final decision to the Applicant within 30 days of receipt of the written appeal.

Applications for newly constructed BMPs shall not be accepted until the BMP has been constructed, inspected, and as-builts approved by the City of Roanoke.

IX. MAINTENANCE REQUIREMENTS

In order for an applicant to continue to receive a stormwater credit, each BMP installed must be maintained to ensure continued function. The applicant is responsible for having all ongoing maintenance work completed to keep the facilities functional. The City may revoke the credit if an inspection determines it is no longer properly maintained or functioning as designed. This revocation will be effective thirty (30) days after the owner is notified in writing of the deficiencies and if the problems are not resolved.

X. RESTRICTIONS ON CREDITS

Transfer of Credit: The stormwater credit applies only to the applicant. Credits do not transfer if ownership changes. A new application must be submitted for new account holders to receive the credit.

Off-Site BMP Credit: In circumstances where an applicant is attempting to claim credit for a BMP owned by a separate entity, proof that the Applicant shares in the maintenance obligations and costs of the BMP will need to be submitted in order for credit to be applied.

Local Community Requirements: The BMP must meet all applicable City of Roanoke building, planning, and other Code of the City of Roanoke requirements.

Right to Inspect. The City may inspect the BMP at any time during the year. If the BMP is not functioning as approved or has not been maintained, the City may revoke the stormwater credit until the property owner proves that all maintenance work has been performed to return the BMP to a fully functional condition.

See the Code of the City of Roanoke, [Chapter 11.5 Stormwater Utility](#) for more details on the stormwater utility fee and credit program.

By the authority granted to me by City of Roanoke Code Section 11.5-1, I hereby approve and adopt this Stormwater Utility Fee Credit Manual: Commercial, Industrial, Institutional, and Multifamily Residential Properties (Non-Single Family Residential or Other Properties) (February 1, 2014 Version), which shall be effective July 1, 2014.

This 3rd day of February, 2014.



Christopher P. Morrill

City Manager

City of Roanoke

APPENDIX A: STORMWATER UTILITY FEE CREDIT APPLICATION FOR COMMERCIAL, INDUSTRIAL, INSTITUTIONAL, AND MULTI-FAMILY RESIDENTIAL PROPERTIES

Application For
Stormwater Utility Credit
 for Commercial, Industrial, Institutional
 and Multifamily Residential Properties



Date Credit Application No.

Planning Building & Development

215 Church Ave., SW, Room 170

Roanoke, VA 24011

Phone: **(540) 853-1090** Fax: **853-1594**

www.roanokeva.gov

NOTE: The City Council has authorized the City Manager to receive applications for stormwater utility fee credits prior to the effective date of the stormwater utility of July 1, 2014. Interested persons who make applications pursuant to these forms, please note that these forms may be modified in the future. Any such modification will be posted to the public.

Complete Form & Click Here To Print

Parcel Information:

Tax Map Number

Parcel Address

City State Zip Code

Credit Submittal Checklist

Completed Application Stormwater Calculations

As-Built Drawings Maintenance Agreement

Pictures of each BMP VPDES Permit (if applicable)

Maintenance Cost Sharing (if applicable) SWPPP (if applicable)

Owner Information:

Owner Name

Owner Address City State Zip Code

Phone Number email

Type of BMP (list all that apply and attach additional sheets as needed):

Water Quality BMP

BMP 1 <input type="text"/>	Impervious Surface Treated (sf) <input type="text"/>
BMP 2 <input type="text"/>	Impervious Surface Treated (sf) <input type="text"/>
BMP 3 <input type="text"/>	Impervious Surface Treated (sf) <input type="text"/>

Water Quantity BMP

BMP 1 <input type="text"/>	Impervious Surface Treated (sf) <input type="text"/>
BMP 2 <input type="text"/>	Impervious Surface Treated (sf) <input type="text"/>
BMP 3 <input type="text"/>	Impervious Surface Treated (sf) <input type="text"/>

VPDES Stormwater Permit

VPDES Permit Number

List any BMP(s) from above that qualifies as "Regional"

List any BMP(s) from above that qualifies as "Voluntary"

List any BMP(s) from above that qualifies as "Above and Beyond"

Print Name Signature

APPENDIX B: TYPICAL BEST MANAGEMENT PRACTICES

A. Water Quality Best Management Practices

Water Quality BMPs - See Code of the City of Roanoke Section 11.4-16 for more details				
Vegetated Grassed Swale Bioretention Basin Water Quality Swales	Filter 	Strip	Constructed Bioretention Retention Basin Rain Gardens	Wetlands Filter

B. Stormwater Quantity Best Management Practices

Water Quantity BMPs - See Code of the City of Roanoke Section 11.4-17 and 18 for more details				
Dry Bioretention Basin Dry Wells Vegetated Buffers	Detention 	Ponds	Infiltration Sand Filters Wet Detention Ponds Permeable Pavement	Trenches

Other BMPs approved by the VA BMP Clearinghouse, including manufactured and proprietary BMPs, may be approved if they meet the Code of the City of Roanoke requirements.

APPENDIX C: PROCEDURE FOR CALCULATION OF CREDITS

For the following examples, assume a commercial property with 10,000 square feet of impervious area. To calculate the monthly utility fee, divide 10,000 square feet by 500 square feet per billing unit. This results in 20 billing units. If the rate is \$0.90/billing unit, this utility fee will be \$18.00 per month.

A. Calculate Stormwater Quality Credit (10% credit) – if the BMP provides water quality benefits in accordance with §11.4-16 of the Code of the City of Roanoke.

- Determine the total impervious area of the property in square feet.
- Determine the impervious area treated by the BMP in square feet.
- Divide the impervious area treated by the BMP by the total impervious area on the property - this is the proportion of the total impervious area treated by the BMP.
- Multiply the proportion of impervious area treated by 0.1 (10%) and by the Stormwater Fee to determine the monthly credit amount.

Example: A rain garden treats runoff from 8,500 square feet of impervious area on the property described above. Credit is calculated by dividing 8,500 square feet by 10,000 square feet, which results in 0.85 (85% Impervious Area treated). This value is multiplied by 0.1 (10%), and \$18.00 (the monthly Utility Fee) for a total credit amount of \$1.53 per month. This means the monthly bill with a 10% credit applied will be \$16.47.

B. Calculate Stormwater Quantity Credit (10% credit) – if the BMP provides both stream channel erosion control benefits in accordance with §11.4-17 of the Code of the City of Roanoke and flood control benefits in accordance with §11.4-18 of the Code of the City of Roanoke.

- Determine the total impervious area of the property in square feet.
- Determine the impervious area treated by the BMP in square feet.
- Divide the impervious area treated by the BMP by the total impervious area on the property - this is the proportion of impervious area treated by the BMP.
- Multiply the proportion of impervious area treated by 0.1 (10%) and by the Stormwater Fee to determine the monthly credit amount.

Example: A Dry detention pond treats runoff from 7,000square feet of impervious area on the property described above. Credit is calculated by

dividing 7,000 square feet by 10,000 square feet, which results in 0.70 (70% Impervious Area treated). This value is multiplied by 0.1 (10%), and \$18.00 (the monthly Utility Fee) for a total credit amount of \$1.26 per month. This means the monthly bill with a 10% credit applied will be \$16.74.

C. Calculate credit for BMP that achieves benefits above those required by the Code of the City of Roanoke – this credit is granted at the discretion of the City Manager. If the owner can demonstrate the installed BMPs were designed and are achieving benefits above that required in the Code of the City of Roanoke, then the credit for that facility will be increased by 5% above that calculated for applicable credits under Items A, and B above.

D. Calculated credit for BMPs that are part of a voluntary retrofit – this credit is targeted at property owners that install stormwater BMPs that are not required by City or State stormwater codes or regulations. If BMPs were installed voluntarily, then the credit as calculated under Items A, B, and C would be doubled.

E. Calculate credit for parcel, or portion of a parcel, that is subject to, and in compliance with, a Virginia Pollutant Discharge Elimination System (VPDES) stormwater permit, if applicable – this credit is granted for properties that have an approved VPDES Permit and can show proof of compliance with existing permit conditions.

- Determine the total impervious area of the property in square feet.
- Determine area subject to the VPDES permit in square feet. Determine total impervious area within the applicable permitted area.
- Divide the impervious area covered by the VPDES permit by the total impervious area on the property - this is the proportion of impervious area covered by the VPDES permit.
- Multiply the percent of impervious area covered by the VPDES permit by 0.1 (10%) and by the Stormwater Fee to determine the monthly credit amount.

Example: The commercial property described above has a valid and compliant VPDES Stormwater Permit for 5,000 square feet of the facility. All of this permitted area is impervious. Credit is calculated by dividing 5,000 square feet by 10,000 square feet, which results in 0.50 (50% of the Impervious Area covered by a VPDES permit). This value is multiplied by 0.1 (10%), and \$18.00 (the monthly Utility Fee) for a total credit amount of \$0.90 per month. This means the monthly bill with a 10% credit applied will be \$17.10.

F. Calculate credit for parcel, or portion of a parcel, that is served by a Regional BMP– this credit is granted for properties that flow to an off-site

BMP(s). The Applicant must show they share in the cost and responsibility for maintenance of the BMP in question prior to receiving credit.

- Determine the total impervious area of the Applicant's property which flows to the off-site BMP in square feet.
- Determine the total overall impervious area treated by the off-site BMP in square feet.
- Divide the Applicant's impervious area flowing to the off-site BMP by the total impervious area flowing to the off-site BMP - this is the proportion of Applicant's impervious area treated by the BMP.
- Multiply the proportion of impervious area treated by 0.1 (10%) and by the Applicant's Stormwater Fee to determine the monthly credit amount.

Example: A Regional Dry detention pond treats a total of 50,000 square feet of runoff from impervious areas in a business park. 5,000 square feet of impervious area comes from the Applicant's property described above. The Applicant is a valid member of the Property Association that owns and maintains the Regional Detention pond. Credit for the Applicant is calculated by dividing 5,000 square feet by 50,000 square feet, which results in 0.01. This value is multiplied by 0.1 (10%), and \$18.00 (the monthly Utility Fee) for a total credit amount of \$0.18 per month. This means the monthly bill with a 10% Regional BMP credit applied will be \$17.82.

Note: Off-site areas may be included in your credit only if not otherwise served by a BMP. An off-site credit may result in greater than a 50% fee reduction but in no case shall result in a credit of more than 100%. In circumstances where an applicant is attempting to claim credit for a BMP that is owned by a separate entity, proof that the Applicant shares in the maintenance obligations and costs will need to be submitted in order for credit to be applied.

APPENDIX D: ADDITIONAL RESOURCES

VIRGINIA BMP CLEARINGHOUSE: <http://vwrrc.vt.edu/swc/>

ALLIANCE FOR THE CHESAPEAKE BAY: <http://stormwater.allianceforthebay.org/>

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY (VDEQ):
<http://www.deq.virginia.gov/Programs/Water/StormwaterManagement.aspx>

VIRGINIA DEPARTMENT OF FORESTRY: <http://www.dof.virginia.gov/>

ENVIRONMENTAL PROTECTION AGENCY (EPA): <http://www.epa.gov/>