

City of Richmond
Department of Public Utilities

Stormwater Management Program

Non-Residential & Multi-Family Property Credit Manual



Approved February 2011



DEPARTMENT OF
**PUBLIC
UTILITIES**

City of Richmond Stormwater Non-Residential & Multi-Family Credit Manual

Table of Contents

I. Introduction	3
What is the Stormwater Fee?	4
What is the Stormwater Fee Credit?	4
What Credits are Available and Who Qualifies?	5
How to apply?	6
Homeowner's Associations	11
II. Stormwater Quality Credit	7
BMPs for Quality Credit	7
Maintenance Requirements	11
Restrictions	11
Application & Documentation Requirements	11
Re-certification	11
III. Stormwater Quantity Credit	8
BMPs for Quantity Credit	8
Maintenance Requirements	11
Restrictions	11
Application & Documentation Requirements	11
Re-certification	11
IV. Stormwater VPDES Credit	9
Application & Documentation Requirements	9
Re-certification	9
V. Stormwater Pollution Prevention/Lawn Care Credit	10
Application & Documentation Requirements	10
Re-certification	10
VI. Instructions for completing General Credit Application	12
Instructions for completing Non-Residential Credit Application	13
Resources	14
Appendix A: General Application	
Appendix B: Non-Residential & Multi-Family Property Credit Application	
Appendix C: BMP Maintenance Agreement	
Appendix D: Stormwater Annual Report Form	
Appendix E: BMP Inspection Checklist(s)	

Non-Residential & Multi-Family Credit Manual

Introduction

On January 12, 2009, the Richmond City Council approved resolution No. 1-10, Authorization to Implement a Stormwater Utility for the City of Richmond. The ordinance provided for a stormwater fee and credits for account holders who effectively manage stormwater to reduce demand on the stormwater system.

The city of Richmond's Stormwater Management Program addresses flooding, erosion and water quality problems throughout the City. A dedicated and stable funding source is critical to addressing stormwater issues. Managing stormwater is important for several reasons:

- ✓ Excessive stormwater overwhelms storm drainage systems including streams, culverts and storm drain pipes causing local and regional flooding.
- ✓ Stormwater erodes land, damaging roads, bridges and other infrastructure, and increases the amount of pollutants deposited into the James River and ultimately, the Chesapeake Bay.

The Department of Conservation and Recreation enacted Stormwater Legislation in 2010.



Department of Conservation & Recreation

CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

What is the Stormwater Drainage System?



The Stormwater drainage system includes the waterways, stormwater conveyance structures, and stormwater control measures (SCMs) in the City of Richmond's service area. The drainage system is a public system, similar to the water or wastewater systems, which provide a public benefit and is maintained by the City.

What is a stormwater fee?

A stormwater fee is directly proportional to the impervious surface on the account holder's property. When a forested or grassy area is paved or replaced with any non-grassy material resulting in additional impervious surface. A larger amount of surface water enters the stormwater system causing an increase in demand on the drainage system. Account holders are therefore charged a fee based on the amount of hard (impervious) surface on a property.

Do you know?

One **ERU** equals 1450 square feet of impervious surface

Richmond measures the amount of impervious surface using the number of Equivalent Residential Units (ERUs) per property. One ERU is equal to 1425 square feet of impervious surface and has an associated fee per month that is established by the City.

The non-residential fee is based on the calculated number of ERUs for the existing impervious surface multiplied by the base ERU fee.

What is the Stormwater Credit?

Traditional stormwater management involved the control and treatment of discharged stormwater from a site. These traditional control mechanisms include filtering practices, permeable pavement and wet and dry ponds. In the last decade new practices have aimed at reducing the flow of stormwater from a property and mimicking the pre-development characteristics. These "low impact development" practices or "LID" include green roofs, bioretention and wet/dry ponds and more. The City encourages all applicants to incorporate LID into their site development and planning.

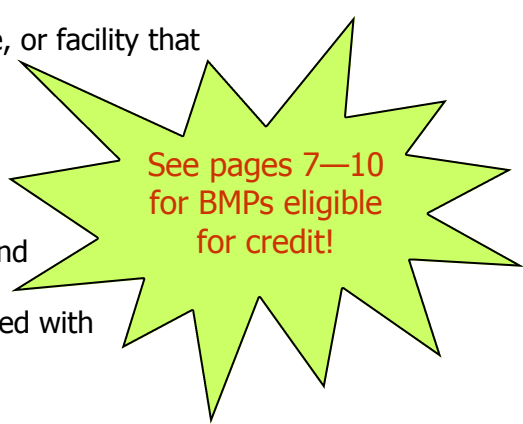
Definition:

Stormwater Management uses the term **BMP** to describe both structural or engineered control devices and systems (e.g. retention ponds) to treat polluted stormwater, as well as operational or procedural practices (e.g. minimizing use of chemical fertilizers and pesticides).

The stormwater credit is based on reducing the stormwater rate or volume flowing from a property to the stormwater system. The credit can be obtained through:

- Installation and continuing use, operation and maintenance of an approved Best Management Practice (BMP) which is not owned, maintained, or operated by the City; or
- Activities that reduce or alleviate the City's cost of providing a stormwater management program.

A **BMP** is an activity, measure, structural device, or facility that prevents or reduces the transport of pollutants, controls stormwater volume and/or rate, and/or limits impacts to the stormwater system. These measures can include on-site practices such as rain gardens, bioretention cells, vegetated swales, and other practices that manage stormwater at its source. Only those impervious surfaces associated with a BMP are eligible for credit based on that BMP.



See pages 7–10
for BMPs eligible
for credit!

What Credits are Available and Who Qualifies?

Table 1 outlines the credits available to different types of account holders. Credits are available to customers who successfully apply for and implement and maintain an approved Best Management Practice (BMP).

Table 1. Credits available for residential and non-residential stormwater fees.

Credit Category	Commercial, Industrial	Multi-Family Residential
Stormwater Quality	✓	✓
Stormwater Quantity	✓	✓
Pollution Prevention/ Lawn Care	✓	✓
VPDES Industrial Permit Compliance	✓	
Total credit Available	Up to 50%	Up to 50%

50 % maximum credit earned !

The amount of credit earned depends on:

* type of BMP

* % of impervious area treated by BMP

Determining how much credit is earned:

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.

Applicants must complete a one page General Application (appendix A) and a one page Non-residential Credit application (appendix B) and submit with all required documentation including photographs, sketches, or any necessary documentation. Please see the applicable section for detailed application information.

Credit Earned =

$(1/2) * (\% \text{ of impervious area treated}) * (\text{fee})$

Credit Requirements:

- * Submit all required documentation with the application;
- * The BMP shall remain privately owned and maintained, with the owner having sole responsibility for all maintenance and upkeep;
- * The BMP shall not become part of the Stormwater Utility;
- * Annual renewal is contingent on the property owner submitting a **Stormwater Annual Report** along with the **BMP Inspection checklist**.

Maintenance Requirements

BMPs installed must be maintained to ensure continued function.

BMP Inspection checklist: Submit applicable Inspection check-list with Annual Report to receive the credit. Be sure to sign and date inspection form.

Stormwater Annual Report: Submit Annual Report (Appendix D) with all supporting documentation annually to receive credit. Be sure to sign and date report.

Restrictions on credits

Transfer of credit: The property 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.

Local Community Requirements: The BMP must meet all applicable City of Richmond building, planning and zoning code requirements.

The credit is valid for one year. The property must submit the renewal application to continue to receive credit.

Right to Inspection. 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 reserves the right to cancel

How to apply:

Applicants must complete a one-page **General Application** (Appendix A) and a two-page **Non-Residential Property Credit Application** (Appendix B) and include a photo of the BMP.

Applications must be submitted with all required documentation, including photos, to the Department of Public Utilities as described on each application.

The image shows two overlapping application forms. The top form is the 'General Application' with fields for Applicant Name, Property Address (Street, City, Zip code), Mailing address, Parcel ID number, Phone Number, and Email address. It also includes a 'Check One' section with radio buttons for 'This is the fee' and 'This is the fee or this property, suspension', and a section for 'Industrial permit after Quality Controls for Quality Practices' with a 'Date:' field. The bottom form is the 'Non-Residential & Multi-Family Stormwater credit application' with fields for Applicant Name and Parcel ID Number. It lists several credit categories with checkboxes: 'Stormwater Quality Credit' (with sub-options for Type of BMP utilized, Design calculations included, Construction plans or as-built drawings included, and Signed BMP Maintenance Agreement included), 'Stormwater VPOES Credit' (with sub-options for Outfall to: James River, Richmond Storm Sewer, Copy of VPOES Industrial Stormwater Permit included, Copy of Stormwater Pollution Prevention Plan (SWPPP) included, and Copy of Stormwater Pollution Prevention Plan (SWPPP) included), and 'Pollution Prevention/Lawn Care Credit' (with sub-options for Copy of Nutrient Management Plan attached, Copy of Lawn Care Maintenance Schedule attached, and Nutrient Management Practices Utilized: (Minimum of 5 required)). A checkbox at the bottom indicates 'Photograph of SCM as installed is attached.'

Send completed applications, including photographs, sketches, design calculations or any other necessary documentation to:

**City of Richmond
Stormwater Utility
Attn: Stormwater Credit Applications
730 East Broad St, 6th floor
Richmond, VA 23219**

Stormwater Quality Credit Requirements:

A Stormwater Quality credit of up to **50%** is available to applicants who have installed an approved Best Management Practice (BMP) that provides water quality treatment to stormwater runoff flowing through the BMP. The credit is only available for the percentage of impervious surfaces that drain to the BMP.

The Stormwater Utility has adopted the Virginia Department of Conservation and Recreation guidelines for which BMPs qualify for the Stormwater Quality credit. Removal of phosphorus will qualify for credit. The credit reduction will be applied based on the percentage of the total site impervious area treated by each BMP.

All BMPs must be designed and constructed in accordance with the Virginia Stormwater Management Handbook (the "Blue Book") which can be found at http://www.dcr.virginia.gov/soil_and_water/stormwat.shtml. An alternative source of design criteria is the Virginia Stormwater BMP Clearinghouse Standards and Specification. These can be found at : <http://www.vwrrc.vt.edu/swc/>.

Both standards and specifications are acceptable to the Stormwater Utility.

Approved Stormwater Quality BMPs

Practice Number	Practice	Total Phosphorus % Removal	Design Specification
3	Grass channel	15 %	SW Handbook Min Std. 3.13, VA DCR Design Spec. No. 3
7	Permeable Pavement	25 %	SW Handbook Min Std. 3.10D VA DCR Design Spec. No. 7
8	Infiltration	25 %	SW Handbook Min Std. 3.10, VA DCR Design spec. No. 8
9	Bioretention 1	25 %	SW Handbook Min Std. 3.11, VA DCR Design Spec. No. 9
	Bioretention 2	50 %	
	Urban Bioretention	25 %	
10	Dry Swale 1	20 %	VA DCR Design Spec. No. 10
	Dry Swale 2	40 %	
11	Wet Swale 1	20 %	VA DCR Design Spec. No. 11
	Wet Swale 2	40 %	
12	Filtering Practice 1	60 %	SW Handbook Min Std. 3.10 VA DCR Design Spec. No. 12
	Filtering Practice 2	65 %	
13	Constructed Wetland 1	50 %	SW Handbook Min Std. 3.09 VA DCR Design Spec. No. 13
	Constructed Wetland 2	75 %	
14	Wet Pond 1	50 %	SW Handbook Min Std. 3.06 VA DCR Design Spec. No. 14
	Wet Pond 2	75 %	
15	Extended Detention Pond 1 & 2	15 %	SW Handbook Min Std. 3.07 VA DCR Design Spec. No. 15

Do you know?

Stormwater management BMPs are control measures taken to mitigate changes to both quantity and quality of urban runoff caused through changes to land use.



Stormwater Quantity Credit Requirements:

A Stormwater Quantity credit of up to 50% is available to applicants who have installed an approved Best Management Practice (BMP) that reduces stormwater peak flow and volume. These practices reduce the demand or burden on Richmond’s storm sewers, the combined sewer system and our streams and rivers.

The Stormwater Utility has adopted the Virginia Department of Conservation and Recreation guidelines for which BMPs qualify for the Stormwater Quantity credit. Removal of phosphorus nutrients by reducing runoff will qualify for credit. The credit reduction will be applied based on the percentage of the total site impervious area treated by each BMP.

All BMPs must be designed and constructed in accordance with the Virginia Stormwater Management Handbook (the “Blue Book”) which can be found at http://www.dcr.virginia.gov/soil_and_water/stormwat.shtml. An alternative source of design criteria is the Virginia Stormwater BMP Clearinghouse Standards and Specification. These can be found at : <http://www.vwrrc.vt.edu/swc/>.

Both standards and specifications are acceptable to the Stormwater Utility.

Do you know?

Best Management Practice (BMP) is a term used in the United States and Canada to describe a type of water pollution control.



Example of a vegetated “green” roof cross section
source: B. Hunt, NCSU

Approved Stormwater Quantity BMPs

Practice Number	Practice	Total Phosphorus Removal, %	Design Specification
1	Rooftop Disconnection	25 or 50 %	VA DCR Design Spec. No. 1
2	Vegetated Filter	25 to 50 %	SW Handbook Min Std. 3.14 VA DCR Design Spec. No. 2
6	Rainwater Harvesting	Up to 90%	VA DCR Design spec. No. 6
9	Vegetated Roof 1	45 %	VA DCR Design Spec. No. 5
	Vegetated Roof 2	60 %	

Stormwater VPDES Credit Requirements:

Some activities that take place at Industrial 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 transfers them to the storm sewer system and ultimately into the creeks and rivers of Richmond.

To minimize the impact of these discharges, the Virginia Department of Environmental Quality began requiring Industrial facilities to register for a VPDES (Virginia Pollutant Discharge Elimination System) Stormwater General Permit.

Do you know?

More information about Industrial Stormwater Regulations can be found on the Virginia Department of Environmental Quality website:

<http://www.deq.state.va.us/vpdes/stormwater.html>

A facility with a valid VPDES Industrial Stormwater General Permit may be eligible for a credit if the facility is in compliance with all permit requirements and submits documentation and annual recertification.

Property owners who hold a valid VPDES Industrial Stormwater Permit and who discharge directly to the James River through a private stormwater facility are eligible to receive a 100% credit.

Property owners who hold a valid VPDES Industrial Stormwater Permit and who discharge to the Richmond storm sewer or combined sewer system are eligible to receive a 50 % credit.

Application and Documentation Requirements:

- General Stormwater Credit Application (Appendix A)
- Non-residential Stormwater Credit Application (Appendix B)
- Copy of the VPDES Industrial Stormwater permit
- Copy of the current Stormwater Pollution Prevention Plan (SWPPP)

Renewal Requirements:

- The VPDES Industrial Stormwater Permit credit is valid for one year.
- The applicant must submit an Annual Stormwater Report (Appendix D) to continue to qualify for this credit.



Stormwater Pollution Prevention Credit Requirements:

Pollution Prevention and environmentally sensitive lawn care programs can reduce the amount of pollution that leaves a property and enters the City storm sewer system.

Environmentally friendly site maintenance and landscaping provide a cost-efficient alternative, reduces waste disposal as well as reducing impacts to land, surface water and Richmond's storm sewer system.

Property owners who demonstrate qualifying site maintenance activities, lawn care and landscaping practices are eligible to receive a **10%** credit to their stormwater fee.

Do you know?

A list of native plants suitable for central Virginia can be found on Department of Conservation & Recreation's website at: http://www.dcr.virginia.gov/natural_heritage/native-plants.shtml

Follow these "Green" landscaping practices:

- Follow the Nutrient Management Standards in DCR's Water Quality Agreement with Lawn Care companies. (http://www.dcr.virginia.gov/soil_and_water/documents/wqagreebro.pdf)
- Utilize plants that have low water, fertilizer & pesticide requirements.
- Cultivate plants that discourage pests. Minimize grassy areas which require high maintenance.
- Preserve existing trees, and plant additional trees and shrubs to help prevent erosion and promote on-site infiltration of water into the soil.
- Spread mulch on bare ground to help prevent erosion and runoff.
- Avoid using fertilizers near surface waters.
- Do not apply pesticides or fertilizers before or during rain to prevent runoff.
- Calibrate your applicator before applying pesticides or fertilizers. As equipment ages, annual adjustments may be needed.



Application & Documentation Requirements:

- General Application—Appendix A
- Non-residential Application - (Appendix B)
- Copy of the property's Nutrient Management Plan, if applicable.
- A lawn care maintenance schedule, including the amount and type of fertilizers and pesticides used, if applicable.

Renewal Requirements:

- The Stormwater Pollution Prevention/Lawn Care credit is valid for one year.
- The applicant must submit an Annual Stormwater Report (Appendix D) including a **minimum of five (5)** of the above practices implemented during the year to continue to qualify for this credit.



Credit Application & Documentation Requirements:



Installation standards:

- All stormwater BMPs must be designed in accordance with city of Richmond *Stormwater Management Design & Construction Standards Manual* (http://www.richmondgov.com/PublicUtilities/documents/Stormwater_Management_Design_and_Construction_Standards_Manual.pdf) and either the Virginia Stormwater Management Handbook (http://www.dcr.virginia.gov/soil_and_water/stormwat.shtml) or the Virginia BMP Clearinghouse (<http://www.vwrrc.vt.edu/swc/>).
- All BMPs must have required permits and approvals.

Application & Documentation Requirements:

- General Stormwater Credit Application (Appendix A)
- Non-residential Property Credit Application (Appendix B)
- Signed BMP Maintenance Agreement (Appendix C)
- Design Calculations & Construction Plans

Maintenance Requirements:

- A BMP Maintenance Agreement (Appendix C) is required for all BMPs to receive credit.
- All maintenance must be completed within the recommended guidelines of the Virginia Stormwater Management Handbook.
- The property owner has the legal responsibility to maintain the BMP.

Credit Restrictions:

- The BMP must meet all applicable building, planning and zoning requirements.
- The stormwater Quality & Quantity credits apply only to the applicant. Credits do not transfer if ownership transfers. A new application must be submitted to continue receiving the credit.

Renewal Requirements:

- The Stormwater Quality and Quantity credits expire after one year. The applicant must re-apply to continue to receive the credit.
- The applicant must submit an Annual Stormwater Report (Appendix C) including Annual BMP Inspection reports and any maintenance performed, to continue to qualify for the credit.

HOAs:

HOA's can apply on behalf of their members and the credit will be divided among qualifying properties.

Homeowners or Condominium Associations:

- A Homeowners or Condominium Association can apply on behalf of its members for the Stormwater Quantity Credit.
- The Association must own and have legally-binding responsibility to maintain an approved BMP.
- The Association must document its legally binding agreement with the property owners who will be receiving the stormwater fee credit to provide funding necessary to maintain the BMP.
- If a credit application is approved, the credit will be applied to each account holder listed as a member of the Association whose property drains to the BMP.

Instructions for completing the General Application

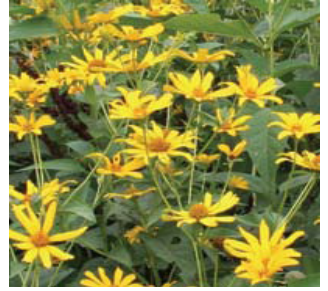
1. Applicant Name—Name of individual property owner.
2. Property Address—list address number and street name. Include city and zip code.
3. Mailing address—Include if different from property address.
4. Parcel ID number—Each piece of land has its own parcel ID number. This information can be found on the City's website at <http://eservices.ci.richmond.va.us/applications/PropertySearch>. The number also appears on the Stormwater Annual bill and on property tax assessments and bills.
5. Phone number—Of primary contact for the application.
6. Email address—Of primary contact for the application.
7. Check one—check which box applies.
8. Credits applying for—Select the credit for which the applicant is applying.
9. Applicant signature/date.



Instructions for completing the Non-Residential or Multi-Family Credit Application

1. Applicant Name—Name of individual property owner.
2. Parcel ID number—Each piece of land has its own parcel ID number. This information can be found on the City’s website at <http://eservices.ci.richmond.va.us/applications/PropertySearch>. The number also appears on the Stormwater Annual bill and on property tax assessments and bills.
3. Credit applying for: choose one. Describe which BMP is installed.
4. Email address—Of primary contact for the application.
5. Credit adjustment calculation: fill out completely. List current Stormwater fee, amount of credit earned from BMP installation and amount of impervious surface treated by BMP. Multiply the three numbers to determine new Stormwater fee.
6. Owner certification: Initial that you have read the statement and that you are the property owner and that all information is true.
7. Applicant signature/date.
8. Include all documentation necessary for credit approval:
 1. Design calculations
 2. Construction plans or as-built drawings
 3. Signed BMP Maintenance/Easement Agreement
 4. Photograph of BMP
 5. VPDES Industrial Stormwater Permit (if applicable)
 6. Stormwater Pollution Prevention Plan (if applicable)
 7. Nutrient Management Plan (if applicable)
 8. Lawn care maintenance schedule (if applicable)
 9. Nutrient Management Practices Utilized (if applicable)

resources



Virginia Stormwater BMP Clearinghouse

Design standards and calculations

<http://www.vwrrc.vt.edu/swc/>

Virginia Stormwater Management Handbook

Design standards and calculations

http://www.dcr.virginia.gov/soil_and_water/stormwat.shtml#vswmhnbk

The Center for Watershed Protection

Fact sheets, design guidance, and reference materials

<http://www.cwp.org/>

Low Impact Development Center

Fact sheets, design guidance, and reference materials

<http://www.lowimpactdevelopment.org/>

Chesapeake Bay Foundation

Rain garden, rain barrel, and native planting information.

<http://www.cbf.org/>

U.S. Green Building Council

Fact sheets, design guidance, and reference materials

<http://www.usgbc.org/>

Environmentally Sensitive Landscaping

Fact sheets, design guidance, and reference materials

www.epa.gov/GreenScapes

Alliance for the Chesapeake Bay

Rain barrel and native landscaping information.

<https://www.allianceforthebay.org/>

Interlocking Concrete Pavement Institute

Fact sheets, design guidance, and reference materials

<http://www.icpi.org/>

Pervious Concrete

Fact sheets, design guidance, and reference materials

<http://www.perviouspavement.org/>