



STORMWATER CREDIT MANUAL

CITY OF BURLINGTON, VERMONT
Department of Public Works

Approved May 13, 2009

1.0 Introduction

The Burlington City Council adopted a revised Chapter 26, Wastewater, Stormwater, & Pollution Control on December 15, 2008. The effective date is April 1, 2009.

The sole funding source for the implementation and administration of the stormwater provisions of the Chapter is the stormwater user fee. This fee is based on a property's total impervious surface area. Every 1,000 square feet of impervious surface equals one (1) Impervious Surface Unit (ISU). Every non-exempt property with impervious surface pays a user fee based on its number of ISUs.

Detached single family homes (not including mobile homes), duplexes, and triplexes pay a flat user fee based on the average ISU for each property type. These property types are not eligible for user fee credits.

All other property types pay a user fee based on the number of ISUs on each particular property. These property types are eligible for user fee credits. The number of ISU's assigned to a property will remain constant unless physical changes are made that alter the amount of its impervious area. In these cases, user fee changes will be made after the issuance of a zoning Certificate of Occupancy.

Multiple credits can be given to eligible properties. The total credit given to any property shall not exceed 50% of the stormwater user fee for that property, and in no event shall a property pay a stormwater user fee less than the flat fee for a detached single family home.

The City of Burlington has developed a system of credits for properties that have facilities or controls in place to store and/or treat stormwater runoff, thereby reducing impacts on the city's combined and separate stormwater systems. Credits are also available for water education curricula. This manual details the policies and procedures applicable to the stormwater user fee credit program.

2.0 Definitions

1. *Best Management Practices, or BMPs* shall mean a schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to the waters of the State.
2. *Combined sewer* shall mean a sewer intended to receive both waste water and storm or surface water.
3. *Department of Public Works* shall mean the employees or designees of the Director of Public Works.
4. *Director* shall mean the Director of Public works or his/her designee.
5. *Environmentally Sensitive Areas* shall mean areas that have a potential for adverse impacts resulting from point and nonpoint source discharges of stormwater. These areas include but are not limited to wetlands, shorelands, floodways and

- floodplains, areas with steep slopes or highly erodible soils and other limiting soil types, groundwater recharge areas, or other such physical constraints.
6. *Green or Green Infrastructure* shall mean an adaptable term used to describe an array of products, technologies, and practices that use natural systems – or engineered systems that mimic natural processes – to enhance overall environmental quality and provide utility services. As a general principal, Green Infrastructure techniques use soils and vegetation to infiltrate, evapotranspire, and/or recycle stormwater runoff. When used as components of a stormwater management system, Green Infrastructure practices such as green roofs, porous pavement, rain gardens, and vegetated swales can produce a variety of environmental benefits. In addition to effectively retaining and infiltrating rainfall, these technologies can simultaneously help filter air pollutants, reduce energy demands, mitigate urban heat islands, and sequester carbon while also providing communities with aesthetic and natural resource benefits. Green Infrastructure is as described in the EPA’s 2008 Action Strategy “Managing Wet Weather with Green Infrastructure,” as may be amended.
 7. *Impaired Waters* shall mean waterways that are not meeting state water quality standards as defined by Section 303(d) of the federal Clean Water Act.
 8. *Impervious Surface* shall mean those surfaces that cannot infiltrate rainfall. Examples include, but shall not be limited to: rooftops, parking lots, sidewalks, and driveways, whether such surfaces are paved, gravel or compacted soil.
 9. *Infiltration Basin* shall mean any structure or device designed to infiltrate retained water to the subsurface.
 10. *Low Impact Development, or LID* shall mean a comprehensive stormwater management and site-design technique. Within the LID framework, the goal of any construction project is to design a hydrologically functional site that mimics predevelopment conditions. This is achieved by using design techniques that infiltrate, filter, evaporate, and store runoff close to its source. Rather than rely on costly large-scale conveyance and treatment systems, LID addresses stormwater through a variety of small, cost-effective landscape features located on-site. LID is a versatile approach that can be applied to new development, urban retrofits, and revitalization projects. This design approach incorporates strategic planning with micro-management techniques to achieve environmental protection goals while still allowing for development or infrastructure rehabilitation to occur.
 11. *Maintenance Agreement* shall mean a legally recorded document that acts as a property deed restriction, and which provides for long-term maintenance of stormwater management practices.
 12. *Municipal Separate Storm Sewer System, or MS4* shall mean a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, road gutters, ditches, manmade channels, or storm drains): (i) owned or operated by the City of Burlington that discharges to surface waters or ground water.; (ii) designed or used for collecting or conveying storm water; (iii) which is not a combined sewer; and (iv) which is not part of a Publicly Owned Treatment Works (POTW) as defined in 40 CFR, Section 122.2
 13. *Non-point Source Pollution* shall mean pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include but is not

- limited to, pollutants from mining, construction, subsurface disposal and urban runoff sources.
14. *Owner* shall mean any person, firm, partnership, association, joint venture, corporation or other entity or combination of entities who alone, jointly, or severally with others hold(s) legal or equitable title to any real property. The term “owner” shall also include heirs, successors, and assigns.
 15. *Person* shall mean any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner, the owner's agent, or the operator of a premises.
 16. *Stormwater* shall mean precipitation and snowmelt, including material dissolved or suspended in it. Stormwater may infiltrate into pervious surfaces, evaporate, or run off impervious surfaces.
 17. *Stormwater Management* shall mean the use of structural or non-structural practices that are designed to reduce storm water runoff pollutant loads, discharge volumes, peak flow discharge, increase infiltration and reduce detrimental changes in stream temperature that affect water quality and habitat as well as other functions.
 18. *Stormwater Runoff* shall mean flow on the surface of the ground, resulting from precipitation and snowmelt that does not infiltrate into the soil, including material dissolved or suspended in it.
 19. *Stormwater Treatment Practices* shall mean measures, either structural or nonstructural, that are determined to be the most effective, practical means of preventing or reducing point source or non-point source stormwater pollution inputs to receiving water bodies.
 20. *Surface Waters* shall mean any receiving waters existing on the surface of the ground, including but not limited to; brooks, streams, rivers, wetlands, ponds, or lakes.
 21. *Total Suspended Solids (TSS)* shall mean total suspended matter that either floats on the surface of, or is in suspension in, water, waste water or other liquids, and that is removable by filtering as described in the latest edition of Standard Methods for the Examination of Water and Wastewater.

3.0 Credit Policies

3.1 General Policies

- a) Credit is given to eligible customers only, as described in the introduction section above. An eligible customer shall be the legal owner of a property or operator which has the primary / legal responsibility for operation and maintenance of a qualifying stormwater BMP located on the same property or development.
- b) Multiple credits can be given to eligible properties by adding approved credit percentages. Some credits apply to the entire stormwater fee, while others are prorated based upon estimated treatment or flow reductions to that portion of property served by a treatment practice. The total credit given to any property cannot exceed 50% of the stormwater fee for that property.
- c) It is the responsibility of the stormwater customer to apply for stormwater credits, and to provide the necessary information with the credit application, as described

- herein. Questions relating to credits and credit applications should be directed to the Stormwater Administrator at Public Works. City staff is not responsible for initiating, performing engineering calculations, or otherwise assisting with the preparation of credit applications. All engineering calculations, drawings and inspection reports required by the credit application must be prepared and stamped by a professional engineer licensed in the State of Vermont for this area of expertise. This application shall include a recent inspection report by an engineer certifying that the system is properly designed and is being maintained.
- d) Credit applications will only be reviewed if they are filled-out completely. The review will be performed within four (4) weeks after the application is submitted. If the credit application is not administratively complete or been approved, the credit applicant will receive notice either by email (if provided) or by U.S. mail.
 - e) Any approved credit application received within one (1) year from when the applicant received their initial stormwater user fee bill will apply retroactively to the date of the initial user fee bill. After May 31, 2010, if credit applications are approved at least two weeks before an applicant's next regularly scheduled bill, the credit will appear on the next month's bill.
 - f) Applications for a stormwater credit for new construction may be submitted once the BMP is in place.
 - g) The City will, at its discretion, undertake periodic visual inspections of the BMPs being utilized to obtain a credit. Consequently, a Right-of-Entry or an access easement must be granted to the City for credits to be approved. If the BMP facility is found to be functional and being properly maintained, the credit will remain in effect. If the BMP facility is not functional or is not being adequately maintained, the credit will be voided on subsequent billing cycles. The Director may revoke a credit at any time for non-compliance by providing thirty (30) days written notice of a non-complying condition and intent to revoke the credit to the property owner. If the non-compliance is not cured within the thirty (30) day period, the Director shall eliminate the credit. Before a credit is re-instated, the property owner will have to reapply for the credit as outlined in this manual.
 - h) Properties that have been issued stormwater credits will be required to submit compliance statements every two (2) years from the date of credit approval as outlined in the Credit Application Checklist and Owner Restatement of Compliance Form later in this document. This statement can be filled out and signed by the property owner or the owner's designee provided that this person understands and has followed requirements of the approved Operation, Maintenance and Repair Plan. The Director may revoke a credit for failure to submit this compliance statement by providing thirty (30) days written notice of a non-complying condition and intent to revoke the credit to the property owner. If the non-compliance is not cured within the thirty (30) day period, the Director shall eliminate the credit. Before a credit is re-instated, the property owner will have to reapply for the credit as outlined in this manual.
 - i) Property owners that construct and maintain STPs that control stormwater from other private properties (i.e., "off-site" from the property on which the STP is located) are eligible to receive STP credits for the control of stormwater from the off-site private properties, up to a maximum of 50% of the total stormwater fees

for those properties. The credits for off-site properties will ONLY be applied to the stormwater fee assessed for the property on which the STP is located. The maximum credit that a property owner can receive for the control of stormwater from off-site properties shall never exceed 50% of the stormwater fee assessed for the property on which the STP is located. Additional credit will not be given for the control of stormwater runoff from publicly owned roadways.

- j) Stormwater user fee credits are available for:
 - o Water Quantity Reduction
 - o Water Quality Treatment
 - o Non-Structural Treatment
 - o MS4 Permitted Facilities
 - o Water Education Curricula

Each practice with its corresponding maximum allowable credit is described in more detail below.

3.2 Credit Descriptions

3.2A Water Quantity Reduction Credits

Water Quantity Reduction Credits are available to properties whose peak stormwater runoff rate is restricted and/or controlled through onsite structural control facilities such as detention and retention ponds or chambers that are designed, constructed, and maintained according to this manual and City Code Chapter 26. This credit is also available to properties utilizing non-structural practices per Sec. 3.2C. Credits for retention/detention facilities are available after having first satisfied inspection and maintenance requirements in Division 4, Stormwater Management, of Chapter 26. If a higher level of detention is provided than required by the Vermont Stormwater Manual, then additional credits may be granted. The credit will be granted for the portion of impervious area that drains to the BMP. The maximum water quantity credit is 50% and will be considered on a case-by-case basis. Approved water quantity reduction credits can be applied in addition to any other approved credits.

Quantity reduction credits are available for stormwater facilities that control the rate at which flow of post-development peak runoff is released with respect to the pre-development peak flow:

For allowed discharges into the Combined Sewer System:

1. Store and release at a controlled rate a volume equivalent to 0.5” of precipitation for the portion of impervious area that drains into the combined sewer system:
Credit Amount: 14%.
2. Store and release at a controlled rate a volume equivalent to 0.9” of precipitation for the portion of impervious area that drains into the combined sewer system:
Credit Amount: 25%.

3. Store and release at a controlled rate a volume greater than 0.9” of precipitation for the portion of impervious area that drains to the combined sewer system:
Credit Amount: $\text{Credit \%} = 27.8 \times (\text{inch of precipitation stored})$.

This controlled rate of release is dependent on project location and could either be a function of time or flowrate based upon downstream hydraulic capacity. A maximum of 50% credit is allowed for discharges into the combined sewer system.

For discharges into the MS4 system and/or non-sensitive areas:

1. Post-development is equal to or less than pre-development peak flow for the 1-year storm flow design: Credit Amount 25%.
2. Post-development is equal to or less than pre-development peak flow for the 2, 10, and 25-year storm flow design: Credit Amount 35%.
3. Post-development is equal to or less than pre-development peak flow for the 2, 10, 25, 50, 100 year storm flow design: Credit Amount 45%.
4. Post-development is equal to or less than pre-development peak flow for the 2, 10, 25, 50, 100 year storm flow design: Stormwater facilities that provide 20% more storage volume than required for the 100-year design storm. This does not include required freeboard above the emergency spillway. Credit Amount 50%.

For discharges into impaired waters or other environmentally sensitive areas:

1. Meet Channel Protection Volume (CPv) for 24 hour release as defined in the Vermont Stormwater Manual. Credit Amount: 20%.

For undisturbed sites, use actual vegetative cover for pre-development flow calculations. For historically urban sites with unknown original conditions, use actual hydrologic soil type with “meadow” land cover to estimate pre-development flows.

3.2B Water Quality Treatment Credits:

Water Quality Treatment Credits are offered to properties that discharge a portion of the runoff to approved structural best management practices (BMPs) which significantly reduce pollutants in stormwater runoff. This includes properties that discharge a portion of their runoff to a natural area, such as a filter strip, natural preservation area which provides water quality benefits and groundwater recharge or has water quality incorporated on site in some other structural BMP such as an oil/grit separator, specially designed detention/retention structures or some other approved methods.

The goal for water quality practices is for the removal of 80% total suspended solids (TSS) for 90% of all Vermont storms, estimated as a 0.9 inch/24 hour event. Approved water quality credits can be applied in addition to any other approved credits. The maximum water quality credit for a property is 25% reduction in stormwater user fees for BMPs with 80% TSS removal. Credit for BMPs with lower TSS removals shall be prorated using the following formula: $\% \text{ Credit} = 0.31 \times (\text{Estimated \% TSS Removal})$. The credit will be granted for the portion of impervious area that drains to the BMP. Each property will be evaluated on a case-by-case basis.

Manufacturer's claims of TSS removals will not be accepted. Applicants are allowed to only use published % TSS removal data from the EPA BMP database (www.bmpdatabase.org/index.htm) or the University of New Hampshire's Stormwater Center (www.unh.edu/erg/cstev/). If an applicant chooses to perform their own performance study, they must follow requirements of the Urban Stormwater Performance Monitoring Guidance Manual located at the above EPA website.

3.2C Non-Structural Practices:

In some instances the ability to strictly meet the requirements of Sec. 26-3-24 Stormwater Treatment Standards and Treatment Practice Design Criteria of Chapter 26 may not be possible, feasible or desired in an urban landscape. As such the City encourages the use of alternative management practices and technologies as a way to both satisfy the requirements of this Division, to give flexibility to design and to encourage Green Infrastructure (green), Best Management Practices (BMP), Low Impact Design (LID) or other innovative practices that in the opinion of the Department of Public Works satisfies the requirements of this Division. Such practices include but are not limited to, green roofs, alternative detention practices, water reuse, including stormwater use, infiltration practices, including pervious and porous pavements and pavers. See Burlington's Guidelines for Stormwater Pollutant Reduction, September 1999 and as may be amended and EPA "Managing Wet Weather with Green Infrastructure Action Strategy", January 2008, and as amended.

Non-Structural Credits are available to properties that utilize alternative stormwater management practices as a means of meeting the required standards. Non-Structural Credits are identical to those offered under Water Quantity Credits (3.2A) and Water Quality Credits (3.2B).

3.2D MS4 Permitted Facilities:

MS4 Permit Credits are available to properties with a MS4 Stormwater Permit (General Permit 3-9014) on file with the Vermont Department of Environmental Conservation. In order to qualify for the credit, property owners must provide a copy of the current MS4 permit and required reporting information along with their application. Approved MS4 credits can be applied in addition to any other approved credits.

Eligible MS4 entities can receive a 10% reduction in the total stormwater fee assessed to their property. If the MS4 entity owns multiple properties located in Burlington and currently receives multiple water/sewer bills, the 10% credit will be applied to every property within the MS4 permit boundaries. The total credit given to any property shall not exceed 50% of the stormwater user fee for that property, and in no event shall a property pay a stormwater user fee less than the flat fee for a detached single family home.

3.2E Water Education Credit

The education credit is available to public and private schools that educate and inform their students about the importance of local surface and groundwater resources and how they can be protected. The rationale behind this credit is that the information

provided by the school will translate into appreciation and stewardship of local water resources and thereby reduce negative impacts (such as pollutant impacts) on local streams, ponds and lakes that can result from uninformed citizens.

Policies specific to the Water Education Credit are as follows:

1. The Water Education Credit is available to elementary, middle and high schools (both public and private) located in the City of Burlington.
2. To be eligible for the credit, the school must teach coursework based on the *Urban Stream Awareness in the Lake Champlain Basin* curriculum guide (targeted for high school students), or an equivalent, age-appropriate, water resources-based curriculum approved by the Stormwater Administrator.
3. The Stormwater Administrator will base his/her approval on the sufficiency of the educational program to meet requirements stated in the NPDES Phase II MS4 permit (Permit 3-9014), section 4.2.1.1, as follows:
“develop elementary, middle school, or high school education curricula regarding local stormwater concerns based on new or existing material; conduct teacher training... and in each subsequent year maintain program information and hold at least one refresher teacher training course.”
4. Approval of the credit application will result in a 10% credit to the assessed stormwater fee. The credit will be applied only to the school property(s) where the curriculum is taught. Approved water education credits can be applied in addition to any other approved credits
5. Schools that are interested in obtaining the Water Education Credit must submit a completed application form to the Stormwater Administrator in the Department of Public Works. The form will require a description of the educational program, list of educational tools used, estimated number of students that will/have receive the education, the length of the educational program and the schedule for providing refresher teacher training courses.

Appeal of Credit Determination or Credit Revocation

Per Section 26-3-31, Credits, of Chapter 26, the Director’s determination to grant, deny, or revoke user fee credits may be appealed in writing to the Public Works Commission within 15 days of the determination.

General Information

Send Application Forms To:

City of Burlington
Department of Public Works
Attn: Stormwater Administrator
654 Pine Street
Burlington, VT 05401

For Questions Regarding the Credit Application, Contact:

City of Burlington
Department of Public Works

Stormwater Administrator
Phone: 802-863-9094

Application Procedure:

Initial review of stormwater user fee credit applications will be completed within 4 weeks of receipt of a complete application. Reviewers will check application forms for completeness and accuracy. If the application is found to be complete and accurate and is approved or denied, a letter will be sent to the applicant notifying approval or denial of the credit. In cases of denial, the reasons for denial will be included in the letter. If the application is found to be incomplete or inaccurate, a letter will be sent to the applicant indicating items to be provided or corrected. Upon receipt of additional or corrected information from the applicant, the review will resume and be completed within 4 weeks of receipt of the additional or corrected information. If a credit application is approved at least two weeks before an applicant's next regularly scheduled bill, the credit will be applied to that upcoming bill, otherwise, the credit will appear on the next month's bill. The applicant has the right to appeal any approval or denial of credit to the Public Works Commission per Sec. 26-3-31, Credits, of Chapter 26.

STORMWATER USER FEE CREDIT APPLICATION FORM

4.1 PROPERTY INFORMATION

Name of Business/Entity/Homeowner's Association: _____

Name of Property Owner: _____

Owner Address: _____

Owner Phone: _____ Owner Fax (if applicable): _____

4.2 APPLICANT INFORMATION (If different from Property Owner)

Name of Applicant: _____

Applicant Address: _____

Applicant Phone: _____ Applicant Fax (if applicable): _____

Applicant e-mail Address: _____

4.3 SITE INFORMATION

Site Address: _____

Site Tax Map Number: _____

Water/Sewer Account Number: _____

Total Site ISU: _____ Credit Area ISU: _____

THIS APPLICATION IS FOR ONE OR MORE OF THE FOLLOWING CREDITS:

Water Quantity Reduction credit: _____ % (maximum allowable 50%)

Water Quality Treatment credit: _____ % (maximum allowable 25%)

Non-Structural Practice credit: _____ % (maximum allowable 50%)

MS4 credit: _____ % (maximum allowable 10%)

Water Education credit: _____ % (maximum allowable 10%)

TOTAL APPLIED CREDIT (NOT TO EXCEED 50%): _____ %

4.4 AUTHORIZATION AND SIGNATURES

I hereby request that Burlington Public Works review this application for a stormwater

user fee credit. I further authorize City staff to inspect the property identified in this application for the purpose of assessment for a possible credit. I certify that I have authority to make such a request and grant such authority for this property. The attached information is true and correct to the best of my knowledge and belief. I agree to provide corrected information to Burlington Public Works should there be any change in the information provided herein.

Applicant Signature: _____ Name: _____

Title: _____ Date: _____

I hereby certify that to the best of my knowledge the stormwater system for which a credit is requested has been constructed in a manner to potentially meet one or more of the credit criteria, is operating as designed and is being properly maintained. I further certify that to the best of my knowledge the calculations, technical details and information provided accurately reflect the condition of this stormwater system at the time of my inspection.

Engineer Signature: _____ Name: _____

Vermont Engineer License Number: _____ Discipline: _____

Company: _____

Address: _____

Company Phone: _____ Company Fax (if applicable): _____

4.5 CREDIT APPLICATION CHECKLIST (For reference by applicant and reviewer)

- _____ Completed and signed Credit Application Form, Sections 4.1 through 4.4.
- _____ Submitted topographic map(s) or site plan(s) showing project location, scale, contours, north arrow, impervious areas and constructed stormwater system(s) including the components for which a credit is requested.
- _____ Drainage area map, including off-site areas draining through components for which a credit is requested.
- _____ Size, location and labeling of all stormwater structures or practices (if applicable).
- _____ Construction details of stormwater components (if applicable).
- _____ Final recorded document (deed description or plat) dedicating storm drainage and access easements (if applicable).
- _____ Submittal of Operation, Maintenance and Repair Plan as outlined in Burlington Code of Ordinances Chapter 26-3-26 (B) (6).
- _____ A recent inspection report (less than one year from application date) by an engineer certifying that the system is properly designed and is being maintained.
- _____ For Water Quantity Reduction credits: engineering calculations using accepted hydrologic/hydraulic software (e.g. TR-20, TR-55, SWMM, HydroCad) for pre- and post-development conditions as described in Section 3.2A of this document, including input and output data.
- _____ For Water Quality Treatment credits: published % TSS removal data from the sources described in Section 3.2B of this document as well as proof that this system was constructed using similar design criteria.
- _____ For Non-Structural credits: provide a description of the practice and other pertinent information or calculations. Some non-structural data is available from reference sources cited in Section 3.2B.
- _____ For MS4 credits: provide a copy of the current 5 year permit plan and any annual reports to date. Electronic copies are preferred.
- _____ For Water Education credits: provide proof of coursework as described in Section 3.2E.

b. Applicant contacted regarding denial on _____

via: letter email

Reviewer Signature _____

Name _____

Title _____

4.6 OWNER RESTATEMENT OF COMPLIANCE FOR STORMWATER CREDIT

PROPERTY INFORMATION

Name of Business/Entity/Homeowner's Association: _____

Name of Property Owner: _____

Owner Address: _____

Owner Phone: _____ Owner Fax (if applicable): _____

APPLICANT INFORMATION (If different from Property Owner)

Name of Applicant: _____

Applicant Address: _____

Applicant Phone: _____ Applicant Fax (if applicable): _____

Applicant e-mail Address: _____

SITE INFORMATION

Site Address: _____

Site Tax Map Number: _____

Water/Sewer Account Number: _____

Total Site ISU: _____ Credit Area ISU: _____

Check only one of the following:

I hereby certify to the best of my knowledge and in the exercise of my reasonable professional judgment that:

The stormwater collection, treatment and control system approved for credit by the City is properly operating and maintained in accordance with the submitted Operation, Maintenance and Repair Plan.

The stormwater collection, treatment and control system approved for credit by the City is not properly operating and maintained in accordance with the submitted Operation, Maintenance and Repair Plan. The following steps will be taken within the next thirty (30) days to bring the stormwater system back into compliance:
