



# Stormwater Credit Application Guide

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April 2023



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### 1. Introduction

#### 1.1 Credit Program Objective

The City of Mississauga's Stormwater Credit Program has been in place since 2016. The objective of the Stormwater Credit Program is to recognize stormwater best management practices ("BMPs") and measures implemented on non-residential and multi-residential properties, ultimately to align with the City's stormwater management goals and objectives per the Stormwater Master Plan.

*Applicants that receive a Stormwater Credit are making a commitment to abide by the terms and conditions of the approval typically through regular inspection and maintenance of eligible stormwater BMPs.*

#### 1.2 Credit Program Review & Enhancements (2019-2022) [NEW]

In December 2019, as the City of Mississauga ('City') headed into the fifth year of its Stormwater Charge Program, staff commenced a consultant led multi-phased study to review the associated Stormwater Credit Program.

[Phase 1 of the Stormwater Credit Program Review \(2020\)](#) found, among other matters, that the City of Mississauga's Credit Program is robust and generally consistent with other large benchmarked communities in North America. Further, the study found that the maximum 50% credit given by the City is in-line with the median value of maximum credits offered by the benchmarked communities.

Based on the recommendations of the *Phase 1* study, [Phase 2 of the Stormwater Credit Program Review \(2021\)](#) reviewed and proposed a number of enhancements to consider, with a focus on increasing flexibility and opportunities for property owners that may encourage greater uptake of the Stormwater Credits.

With Council's approval of the proposed changes to the Credit Program in October 2021, staff implemented several enhancements which took effect in July 2023. All changes made to the Credit Program are reflected in this document.

Please note that previously approved credits will not be affected by the program changes until the credit renewal process at which time credits applied for and awarded will be granted under the enhanced program. Credit holders may also submit a Credit Update Application if they wish to have their existing credits updated based on the enhanced program.

## 2. Credit Program Administration

### 2.1 Program Eligibility

All non-residential and multi-residential properties that are in good standing with all City by-laws are eligible for the Credit Program, with the exception of any property which is receiving an exemption or subsidy reduction to the Stormwater Charge. Single residential properties are not eligible for the credit program.

Property owners/managers may use the [online estimator tool](#) to find out whether they are categorized as a multi-residential or non-residential parcel and their current annual charge. If you have any questions about your eligibility, please call 3-1-1 (905-615-4311 outside City limits) or email [stormwater@mississauga.ca](mailto:stormwater@mississauga.ca).

As the assessment of the Stormwater Charge is parcel-based, Stormwater Charge Credits are to be applied on the same City parcel that is being assessed.

Participation in the credit program is by application only.

### 2.2 Credit Duration

Stormwater Charge Credits are effective for a maximum term of five (5) years from the date of approval, subject to compliance with Terms and Conditions, as outlined in Section 4, and may be renewed for subsequent five (5) year terms.

### 2.3 Credit Categories

Stormwater Charge Credits are available in each of the four categories below, which align with the City’s Stormwater Management objectives (Table 1). Detailed descriptions and examples of the evaluation criteria for each category are provided in Appendices 2 and 5, respectively.

**Table 1. Stormwater Credit Categories**

Category	Description	Evaluation Criteria	Total Credit (50% Maximum)	To a total of no more than 50%
Peak Flow Reduction	Manage stormwater runoff rates and reduce the potential and severity of flooding on downstream land and infrastructure.	Aligned with the City’s current development requirements at a watershed or sub-watershed level.	Up to 40%	
Water Quality Treatment	Remove solids and other contaminants from stormwater runoff.	Impervious area that is directed to approved on-site quality control BMPs.	Up to 30% (↑)	
Runoff Volume Reduction	Reduction of the amount of stormwater runoff to the City’s stormwater system.	Capture of first 15 mm of rainfall during a single rainfall event.	Up to 30% (↑)	

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Category	Description	Evaluation Criteria	Total Credit (50% Maximum)	
Operations and Activities	A variety of operations and maintenance practices that support stormwater management.	Develop and implement one or more of the eligible practices.	Up to 20% (↑)	

A maximum credit of 50% can be achieved by a property owner or manager.

The maximum credits available in some categories was increased to provide greater flexibility to property owners and to better align with the City's stormwater management goals and objectives (see table 1).

### 2.4 Credit-eligible Best Management Practices

Credits for the Peak Flow Reduction, Water Quality Treatment and Runoff Volume Reduction categories are performance-based, rather than prescriptive/presumptive. This means that credits are awarded based on how well a property's BMPs function to achieve the required performance criteria (examples available in Appendix 5), rather than credits awarded based on an assumed level of performance (i.e. X% credit for a BMP of X size). Performance-based stormwater management measures encourage creativity, provide flexibility and enable property owners to pursue BMPs best suited for their properties and particular needs, as permitted by existing by-laws, codes and regulations.

The following is a sample list of credit-eligible practices:

- Infiltration galleries
- Permeable pavement
- Rainwater cisterns
- Enhanced vegetated swales
- Constructed wetlands
- Stormwater ponds
- Rain gardens/bio-retention systems
- Roof gardens/green roofs
- Oil-grit separators

Many of the BMPs listed above could be eligible for more than one credit category. For example, the City recognizes that a BMP may provide both peak flow reduction and runoff volume reduction. In such cases, performance related to both categories can be applied for and please note that the cumulative maximum credit available to a property is 50%.

Eligibility of a BMP will be contingent on proof of function, certification and on-going inspection and maintenance throughout the credit term. If the approved BMP is not functioning as intended or removed for any reason, the applicable credit(s) may be cancelled.

Although some non-residential and multi-residential properties may ultimately drain to the City's BMPs, credits are not eligible for any stormwater management facility, funded through the Stormwater Charge Program, located within the municipal right-of-way or within a permanent stormwater easement in favour of the City of Mississauga.

### 2.5 Credit-eligible Operations and Activities [NEW]

Resulting from the recommendations of the [Phase 2 Stormwater Credit Program Review \(2021\)](#), the previously named 'Pollution Prevention' category has been renamed '**Operations and Activities**', and its maximum available credit has been increased to 20%. Notably, credit applications for this category do not require certification by a qualified Professional Engineer. These changes have been made in order to allow a greater suite of practices and activities to be eligible for credit, with a focus on increasing flexibility for applicants.

Please note that any engineer designed and other performance based stormwater management practices or infrastructure will not be eligible for this credit category, but would be eligible for the other three Stormwater Credit categories: Peak Flow Reduction, Water Quality Treatment and Runoff Volume Reduction, as listed in Table 1.

The following is the list of credit-eligible activities, the maximum credit amounts and the description under the Operations and Activities category:

- **Sustainable Landscaping** (max. credit: 5%)  
Refers to various landscaping practices that protect, enhance, and restore the natural environment, absorb more stormwater than conventional lawns/grass, and in return support stormwater management objectives. Applicant must demonstrate the conversion from existing impervious area or turf to sustainable landscaping, which may include native plants, native trees and shrubs, habitat gardens for wildlife, etc.
- **Education Program** (max. credit: 5%)  
The applicant must educate and train employees about relevant topics such as pollution prevention, litter clean-up, spill response, salt management and/or stormwater management, etc. The educational sessions can vary in format and be delivered by internal employees or external partners.
- **Paved Area Sweeping** (max. credit: 10%)  
The applicant must implement a detailed paved area sweeping plan for all applicable areas, and maintain the associated records. The method of sweeping is to align with industry standard, most typically mechanical or regenerative air sweeping. It is important to note that paved area sweeping activity will not be eligible for a credit if the sweeping is required to satisfy the [Storm Sewer Use By-Law 0046-2022](#) or other City by-law infractions.
- **Salt Management Plan** (max. credit: 10%)  
The applicant must confirm that they either use a ['Smart About Salt' \(SAS\)](#) certified contractor, or are a 'Smart About Salt' (SAS) certified site or equivalent. If your property is a business and

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your employees maintain the site, they must become certified through the SAS program. Property manager/tenants/employees managing salt on the site must confirm their certification as part of the application, however, the credit will only be issued to the credit applicant.

- **Pollution Prevention Lite** (max. credit: 10%)  
Pollution Prevention Lite focuses on the operations of a business from the building envelope outwards and specifically focuses on storm sewer pollution prevention techniques without the need for property wide information, detailed reporting or consultant assistance.
- **Pollution Prevention Plan** (max. credit: 20%)  
The applicant must develop and implement a pollution prevention plan, which must be consistent with the requirements under the [Storm Sewer Use By-Law 0046-2022](#), as amended.

Applicants are able to complete/implement multiple activities in order to receive a combined credit up to the maximum of 20%. Details of the supporting documentation and evaluation criteria for each activity can be found in Appendix 1 and 2.



### 3. Application Process

#### 3.1 Application Types

There are three types of Credit Applications:

1. **New Credit Application** – (1) applying for a credit on a property with an existing BMP or eligible activities for the first time; or (2) applying subsequent to the cancellation of an approved credit.
  - **Credit Sharing Application** – applying for a credit when a stormwater facility receives runoff from multiple properties and where property owners are consenting to share the cost of construction and/or operations and maintenance between contributing properties in exchange for shared stormwater credits (see Appendix A1.2 for details of Credit Sharing Application).
2. **Credit Update Application** – (1) when an approved credit needs to be updated to reflect a *Material Change*<sup>1</sup> made to the property that could affect the distribution or validity of approved credits; or (2) updating approved Operation and Maintenance Plan; or (3) updating approved credit application with enhancements applied.
3. **Credit Renewal Application** – when an approved credit is about to expire. Credit Renewal Applications must be submitted to the City no less than three (3) months prior to the expiration date of the credit.

#### 3.2 Supporting Documentation

In all cases a satisfactory Credit Application, which includes a completed application form and all required supporting documents demonstrating on-site BMPs or eligible activities, must be submitted. Supporting documentation must be prepared by a Professional Engineer registered in the Province of Ontario and qualified in municipal engineering and stormwater management, except when applying for a credit only in the Operations and Activities category.

The report, including relevant supporting information, must meet the City of Mississauga's development requirements (or generally accepted professional practices where City of Mississauga requirements currently do not exist), for development applications seeking approvals for storm drainage and stormwater management. Full supporting documentation requirements are outlined in Appendix 1.

The Applicant is solely responsible for costs incurred in the preparation of the required documentation and/or the submission of the credit application.

#### 3.3 Application Process

The City accepts completed Credit Applications online or by mail and/or supporting documentation in either hard-copy or digital (PDF) format. There is no application fee.

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<sup>1</sup> In the Stormwater Fees and Charges By-law, Material Change means information as part of an approved Stormwater Charge Credit application that has changed, was not provided or aware of by the parties at the time and results in a property no longer being in compliance with the approved credit.

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- [Apply online](#)
- Download printable application

Please note that the submission of a Credit Application may result in a reassessment of the Stormwater Charge for the property.

The following are helpful tips when submitting a complete Credit Application:

- Applicant Information
  - **Registered Owner** –the Applicant is the owner of the property;
  - **Authorized Agent of Owner** –the Applicant is not an owner of the property but has permission to act on behalf of all the owners of the property;
- Contact Information
  - If the Applicant is the authorized agent of the owner, the contact information of the registered owner or property management company must be provided as well.
- Property ID(s) – this number is created for every parcel of land in Mississauga by the City’s GIS team. The Property ID Number can be found for a specific address using the online [Stormwater Charge Estimator](#);
- Previous Permit Number – the Applicant is required to provide previous Credit Application number when submitting a Credit Update or Renewal Application;
- Attachments – the Applicant is required to upload all required documents to complete the submission.

### 3.4 Review Timelines

The review of a Credit Application is a two-step process:

1. Assessment for application completeness; and
2. Technical review of application.

Applicants will receive an auto-email with an application number to confirm the successful submission online.

The Stormwater Charge Program Coordinator will conduct an initial screening to ensure application eligibility. Applicants may be requested to provide additional information. If an Applicant fails to provide the necessary information within **thirty (30) calendar days**, the application will be rejected. The City may also conduct an initial site inspection if desired, as described in Section 5.1.

A Credit Application is deemed complete when the Applicant has filled out all appropriate sections of the application form and submitted the relevant reports and documentation which support how the stormwater BMPs, operations and activities satisfy the credit evaluation criteria.

The technical review of an application is expected to be completed within **thirty (30) calendar days** of a complete submission. Credit approval may be awarded, or additional technical information or clarification may be requested by staff during this time. In the event the technical review results in a request for additional information or clarification, a **new thirty (30) calendar day** period will be re-set upon receipt of all information requested.

### **3.5 Effective Date of Approved Credit**

Reductions to Stormwater Charges made as a result of the approval of a Credit Application will be retroactive to the date of receipt of the Credit Application or receipt of a complete submission upon staff requiring additional information.

### **3.6 Stormwater Charges Billed while Credit Application is Under Review**

A pending credit application does not constitute a valid reason for non-payment of the currently-assessed Stormwater Charge. Any stormwater charge bill that is received during the credit application review process must be paid in full.

### 4. Terms and Conditions of Credit Approval

Stormwater credit approvals are subject to terms and conditions that credit holders must comply. Site specific terms and conditions may be imposed, depending on the nature of the property, its use and its BMPs or eligible activities. Failure to comply with the following terms and conditions may result in the suspension or cancellation of approved credits.

#### 4.1 Operation and Maintenance

Credit holders must comply with the approved Operation and Maintenance Plan detailed in the Credit Application or other supporting documentation, and/or meet the City's minimum inspection and maintenance requirement of an annual inspection. All inspection, maintenance logs and photos must be retained on file and be made available upon request throughout the entire term of the credit.

#### 4.2 Audit

The City of Mississauga is authorized to conduct periodic random audits of approved credits. Credit holders must respond to the audit request, confirm site inspection schedule with City staff and submit required documentation within the required time frame (see section 5.2 for further details).

#### 4.3 Credit Update

Credit holders are required to submit a Credit Update Application of any *Material Changes*, as defined in the Stormwater [Fees and Charges By-law 0295-2020](#), made to a property that could affect the distribution or validity of approved credits.

Changes may include, but are not limited to, property split or consolidation, change of ownership, or approved BMPs or activities that are added, expanded, reduced, deleted or in any way modified such that the level of performance relative to the approved credit amount has changed. Delays or failure in informing the City may result in a cancellation of the existing credit.

#### 4.4 Credit Renewal

Credits are effective for a maximum term of five (5) years from the date of approval. Credit holders are required to submit a Credit Renewal Application **at least three (3) months** prior to the expiry date should they wish to seek a renewal of the existing stormwater credits without experiencing a gap in the credit approval.

### 5. Site Inspections

#### 5.1 Site Visit during Application Review

As part of any credit application review process, the Stormwater Charge Program Coordinator or designate may contact the Applicant with a requested date to conduct a site visit to verify that any constructed BMPs or activities are in conformance with the documentation provided and that these measures are operating in accordance with documented performance criteria. The results of this inspection will be taken into consideration as part of the application review.

If the Applicant fails to respond to the Stormwater Charge Program Coordinator or designate by telephone, email or in writing to coordinate a site visit date within **thirty (30) calendar days**, the credit application will be cancelled. The inspection must proceed within **sixty (60) calendar days** of the initial request. If the Applicant is unable to provide a date to facilitate the inspection within this time frame, the credit application will be cancelled.

#### 5.2 Audit during Credit Term

Credit holders have the responsibility to regularly inspect, maintain and repair BMPs receiving credit to ensure that it is functioning as designed, and maintained as agreed to in the terms and conditions, as outlined in Section 4 of this document.

In addition, the City reserves the right per [Stormwater Fees and Charges By-law 0295-2020](#), as amended, to conduct audit inspections and may, at any reasonable time, enter and inspect any property with credits. The intent of the audit inspections is to assess whether the stormwater BMPs are being inspected/maintained as stipulated in the submitted Operation and Maintenance Plan or satisfying the City's minimum program requirement (annual inspection), that the conditions on-site are consistent with the documentation provided in the most recent credit application, and that the BMPs are operating in accordance with performance criteria as documented in applicable documents. Audit inspections will typically involve on-site assessments, self-assessments, informal interviews, review of inspection and maintenance logs, photos, and additional information as required. As a result of an audit inspection, credits may be suspended, reduced or cancelled.

At any point during the term of a credit, the Stormwater Charge Program Coordinator or designate may contact the credit holder with a requested date to conduct the site inspection. City staff may undertake a site inspection in-person or request credit holders to conduct a self-inspection depending on the type of BMPs. Producing acceptable inspection and maintenance logs will be required during the audit; credit holders are required to retain such logs throughout the entire term of the credit.

Credit holders are required to acknowledge the receipt of the audit request within **thirty (30) calendar days**. The inspection requirements, including on site, self-inspections and submission of all required documents are to be completed **within sixty (60) calendar days** from the date of the audit request. Delays or failure in satisfying the audit requirements may result in a cancellation of credit.

The inspection will result in a grading of either "passed," "suspended" or "failed". Sites that are "suspended" will be given a **sixty (60) calendar day period** to take remedial action to bring their

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property up to a passing standard. Failure to take required actions within **sixty (60) calendar days** may result in a cancellation of credit.

### 6. Credit Update Application

#### 6.1 'Material Change'

Credit holders are responsible for notifying the Stormwater Charge Program Coordinator through a Credit Update Application process if the BMPs undergo a *'Material Change'*, as defined in the Stormwater [Fees and Charges By-law 0295-2020](#). Changes may include, but are not limited to, property split or consolidation, change of ownership, or an alteration, improvement, deficiency, or failure of approved BMPs, that may result in a property no longer being in compliance with the approved credit.

A Credit Update Application must be submitted to the City after any *'Material Change'* to a property. In some cases, new engineer report and supporting documents may be required to be submitted along with the Credit Update Application. The City has full and absolute discretion to suspend, adjust (increase or decrease) or cancel the approved credit for any late submission or not notifying the City.

#### 6.2 Update Operation and Maintenance (O&M) Plan

A Credit Update Application can be submitted if a credit holder would like to update their currently approved O&M Plan from the most recent credit application or renewal. The credit holder must provide a new O&M Plan along with a Credit Update Application, meeting or exceeding the City's minimum program requirement (annual inspection). City staff will review the updated O&M Plan and may conduct a site visit or require additional documents to support the update.

Once approved, the new O&M Plan will take effect on the date of receipt of the Credit Update Application, and the original credit term remains the same.

#### 6.3 Application to Enhanced Program [NEW]

During the term of an existing credit, the credit holder can submit a Credit Update Application with updated supporting documents related to new eligibility or BMPs applied for. City staff will review the application and may conduct a site visit or require additional documents.

Once approved, the new credit amounts will take effect on the date of receipt of the Credit Update Application, and the original credit term and expiry remains the same.

### 7. Credit Renewal Application

All credits are valid for five (5) years. Credit holders are advised to submit a Credit Renewal Application **at least three (3) months** prior to the expiration date should they wish to renew their existing stormwater credits without experiencing a gap in receiving their credit. Applications received after the threshold date may not be processed and approved in time before the previous credit expires. In such circumstances, the account holder will not receive credit towards the stormwater charge during the period in which the previously approved credit has expired and the renewal application has not been approved. An approved credit renewal shall be effective upon the expiration date of the previous credit, or as otherwise determined by the Stormwater Charge Program Coordinator.

In addition, credit holders wishing to renew their credit shall provide evidence that acceptable operation and maintenance practices have taken place and that the BMPs are in a state of good repair. Details on supporting documentation requirements for Credit Renewal Applications are provided in Appendix A1.3.



### 8. Penalties

#### Credit Suspension, Reduction or Cancellation

As described in the [Stormwater Fees and Charges By-law 0295-2020](#), as amended, a stormwater credit may be suspended, reduced or cancelled under the following examples:

1. Failure of the Applicant (or applicable property owner) to make stormwater charge payments as billed by the Region of Peel;
2. Failure of the Applicant (or applicable property owner) to meet the terms and conditions of the credit approval;
3. Submission of inaccurate or false information by the Applicant (or applicable property owner);
4. Failure of the Applicant (or applicable property owner) to maintain a BMP measure as required by the terms and conditions of the credit approval;
5. Failure of a BMP measure to operate or meet the performance criteria as documented in the Applicant's credit application or credit update or renewal application and/or its supporting documentation and/or the terms and conditions for the credit approval, update or renewal; or,
6. Failure to submit a complete credit renewal application.

In the circumstance that a BMP is not present, found to be in a state of disrepair or no longer functions as approved, the Applicant shall reimburse the City the entire amount of the credit received in respect of the property since the date that the application was approved, updated or renewed or since a previous inspection confirmed the conditions, whichever is later.

#### Suspension

If a property fails a site inspection, the credit may be suspended and the credit holder will have **sixty (60) calendar days** to repair, clean, fix, correct deficiencies, demonstrate inspection and maintenance practices, and submit required documents to the Stormwater Charge Program Coordinator. If a credit holder fails to demonstrate action and reasonable progress to correct the deficiencies or practices and schedule a re-inspection within the requested time, the credit may be cancelled.

#### Cancellation

When credits have been cancelled they may not be reinstated and the applicant will be required to submit a new credit application. After cancellation applications for the same parcel may be submitted no earlier than twelve (12) months after the date on which the credit was cancelled.

#### Appeals

A reduction or cancellation of a stormwater credit may be appealed by the Applicant in writing to the Commissioner of Transportation and Works. The decision of the Commissioner of Transportation and Works shall be considered final and binding.

### Appendix 1: Supporting Documentation for Applications

#### A1.1 New Credit and Credit Update Applications

To apply for a new credit or to update an existing approved credit for new and/or existing BMPs, the Applicant must provide a completed application form and the information listed below, as applicable, to the Stormwater Charge Program Coordinator.

##### A1.1.1 Categories: Peak Flow Reduction, Water Quality Treatment, and/or Runoff Volume Reduction

###### 1. Engineer's Certification of Operation

This certification must be in the form of a letter addressed to the Stormwater Charge Program Coordinator, signed and stamped by a qualified Professional Engineer. It must include the following:

- a. Certification that all BMPs have been constructed in accordance with the submitted drawings and that they are operational; and
- b. Confirmation of the date(s) that all BMPs were implemented into service.

A template for the certification letter has been provided in A1.4.

**2. Stormwater Management Report** certified by a qualified Professional Engineer and accompanied by the above letter, signed by the author of the report, which allows the City of Mississauga to make reliance on the findings and conclusions presented in the report. This report is expected to be generally consistent with current City of Mississauga development requirements for on-site stormwater management reports and must include details outlining the credit percentage applied for and all calculations how the BMPs achieve the credit requirements, and other relevant information.

- a. **Site plan and/or related engineering drawings and details** should conform to the City's development requirements with the following information to be shown as a minimum:
  - Location;
  - Property boundaries;
  - Easements;
  - Topographic details;
  - Locations and outlines of all structures, including buildings, parking, driveways and other impervious areas;
  - Drainage areas, including internal drainage patterns and areas, as well as external drainage areas draining to the site; and
  - Stormwater BMP and/or related drainage details.
- b. Hydrologic and hydraulic calculations and/or modelling results to support Peak Flow Reduction, Water Quality Treatment and/or Runoff Volume Reduction credit categories.

### 3. Operation and Maintenance Plan

- a. Proposed inspection and maintenance plan, including record keeping, logging, and photos (*refer to A1.5 Inspection and Maintenance Log Template*);
- b. Details on the procedures to be performed; and
- c. Inspection and maintenance records must be kept on file by the Applicant or site owner/operator for the duration of the approved credit and be made available to City staff upon request.

#### A1.1.2 Category: Operations and Activities [NEW]

The applicant must provide the following documents and/or take required actions for the activities applied to below:

##### Sustainable Landscaping

- A Sustainable Landscaping Implementation Plan that includes the following information:
  - Ratio of sustainable landscaping area (%):
    - total square metres of sustainable landscaping area divided by the total square metres of the property/parcel area;
  - Validation of the areas from mapping or drawings (i.e. aerial mapping, survey drawings, as-built development plans or reports, GCG sustainable landscaping report, etc.);
  - Dates and photos of the implementation of the sustainable landscaping project;
  - The list of native plants which shall include 80% or more native plants, shrubs and/or trees. Quantity and spacing shall be specified on the plant list;
    - Refer to CVC's Native Plant List;
    - If it is not on the list, confirm source(s);
    - Show calculation of percent native plantings;
  - If working with Credit Valley Conservation Greening Corporate Grounds program, the 'Sustainable Landscaping Action Report' provided should support many of the above requirements.

##### Education Program

- An Education Program proposal/plan that commits to deliver relevant education/training over the 5-year credit term and includes the following information:
  - Tentative schedule of topic(s) and/or agenda proposed for each session;
  - Estimated number of education/training hours for each session;
  - Description of how the information will be disseminated;
  - The audience(s) that will receive this training.

##### Paved Area Sweeping

- A detailed paved area sweeping plan that contains:
  - A location plan or drawing indicating the areas to be swept, describing the reason for any areas that cannot be swept;
  - Sweeping frequency (minimum twice per year);

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- Indicate the type of documentation that will be recorded/compiled to demonstrate the plan is being implemented;
- Commitment to deliver the plan over the next 5-years, and to provide a summary of all sweeping at renewal.

### Salt Management Plan

- Documentation of the Salt Management Plan and its implementation, which can include paid invoices, employee timesheets/logs, work orders or certification of work by a contractor;
- Confirmation of SAS certification or SAS site certification;
- Record of contract/agreement with external SAS Contractor.

### Pollution Prevention Lite

- Applicant requests a pollution prevention site assessment by City staff to identify best practices/actions;
  - Refer to Appendix 4: P2 Site Inspection Checklist
- Implement required P2 actions and provide proof or confirmation through photos, maintenance logs, etc., within sixty (60) calendar days of receiving City's action request. City staff may also complete a follow up inspection to confirm the required actions.
  - Required P2 actions may include
- If available, the applicant is encouraged to submit:
  - A drainage drawing (i.e. site plan, servicing plan, survey, etc.) along with the application form.

### Pollution Prevention Plan

- A Pollution Prevention Plan, including the content outlined in Schedule B of the [Storm Sewer Use By-law](#), as amended. Materials and documentation developed must be prepared or confirmed by a qualified professional in the environmental industry.

### A1.2 Credit Sharing Application and Checklist [NEW]

A Credit Sharing Application may be submitted when multiple private property owners discharge stormwater to communal stormwater management facilities. A credit sharing application may include an allocation of stormwater credits to be distributed among multiple parties that may relate to an individual property owners investment in design, construction and maintenance costs or benefit received of eligible BMPs.

Prior to submission, please confirm the following items are complete and to be submitted with your shared stormwater credit application. Please note that all components of the Property Owner Agreement are required for approval of a shared credit. If all parties have not signed an agreement, the application will be rejected and no credits will be issued.

Please be advised that the following information does not represent an exhaustive list of the credit requirements, but rather is intended to provide guidance to those applying for shared credit for an eligible communal facility. Specific details related to the site plan and stormwater management design will be reviewed and commented on by City staff.

#### Prerequisites

- Eligible as Non-Residential / Multi-Residential Property.
- All property owners are in good standing with the City.

#### Property Owner Agreement (mandatory)

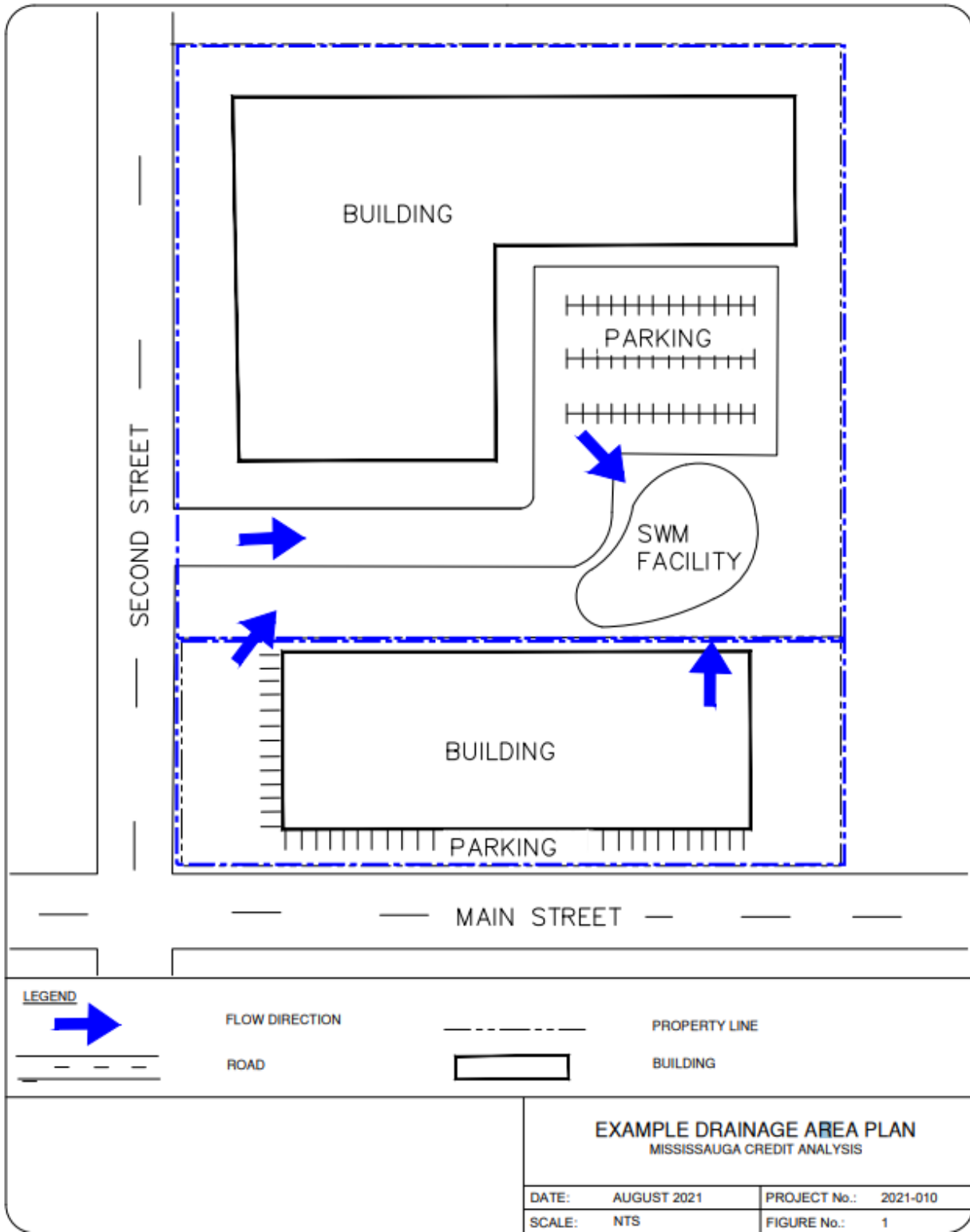
- Agreement signed by all property owners.
- Parcel ID number for each involved property (from charge estimator tool).
- Address for all involved properties.
- Roles and responsibilities of all property owners.
- Single point of contact for City regarding application, inspection, O&M, and renewal.
- Credit allotment (percentage by property owner).
- Contact information for each property owner.

#### Enclosures (mandatory)

- Site plan(s) signed and sealed by Professional Engineer.
- Drainage report signed and sealed by Professional Engineer.
- Summary of proposed credits claimed.
- Operation and maintenance plan.

# Stormwater Credit Application Guide

Below is an example of Drainage Area Plan for Credit Sharing Application:



### A1.3 Credit Renewal Applications

#### A1.3.1 Categories: Peak Flow Reduction, Water Quality Treatment, and/or Runoff Volume Reduction

To renew a previously approved credit, the Applicant must submit a completed application form and the information listed below, as applicable, to the Stormwater Charge Program Coordinator.

1. A report certified by a qualified Professional Engineer providing the following information:
  - Confirmation that the performance of all BMPs remains consistent with the previously approved credit application;
  - Confirmation that all BMPs are in a state of good repair;
  - Agreement is still valid (*for Credit Sharing Application only*).
  
2. Inspection and maintenance logs, including:
  - Dates of inspection and maintenance activities;
  - Annual photos of BMP at to accompany log;
    - If maintenance was done on BMP, post maintenance photos to be included in addition to annual photos
  - Names, titles, and qualifications of personnel conducting the inspections and/or maintenance;
  - Condition of each BMP, including its functional components;
  - Any other item that could affect the proper function of the BMP;
  - Description of the need for maintenance;
  - Description of maintenance performed; and
  - Updates to the operation and maintenance plan, if needed.

A template of inspection and maintenance log is provided in A1.4.

#### A1.3.2 Category: Operations and Activities [NEW]

Under the Operations and Activities category, the applicant must submit a completed application form and the following supporting documents for each credit eligible activity to be renewed, to the Stormwater Charge Program Coordinator.

##### **Sustainable Landscaping**

- Evidence that approved sustainable landscaping practices remain in place through photos, maintenance logs (if applicable), GCG Monitoring Report, or other supporting documents.
  - Photos should be taken from same vantage point and labelled the same as photos received at initial application

##### **Education Program**

- A summary report detailing the program delivered over the credit term including:
  - Log of education/training dates and total hours, including number of attendees;
  - Agendas, meeting minutes, or other relevant documents;
  - Documentation the education/training plan has been implemented to date.

##### **Paved Area Sweeping**

## Stormwater Credit Application Guide

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- A self-certification report detailing the program delivered over the credit term including:
  - Log of sweeping dates;
  - Documentation such as paid invoices, confirmation/certification of completed work by the contractor, etc.

### **Salt Management Plan**

- A self-certification report that includes SAS certification of internal staff, invoices from the external SAS certified contractor, or confirmation of SAS site certification throughout the approved credit period.

### **Pollution Prevention Lite**

- Upon scheduling a site inspection. City staff will assess the site with the credit holder to confirm/update the P2 Checklist (see Appendix 4), and may require new or modified actions be taken to align with current site operations.

### **Pollution Prevention Plan**

- A self-certification report, by a qualified professional detailing the plan delivered, and an updated plan if any practices or operations has changed over the credit term.



## Stormwater Credit Application Guide

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### A1.4 Engineering Certification Template

Date:

To: City of Mississauga  
Transportation and Works Department  
Environmental Services Section  
Stormwater Charge Program  
300 City Centre Drive  
Mississauga, Ontario L5B 3C1

Attn: Stormwater Charge Program Coordinator, Transportation and Works

**RE: BMP CERTIFICATION**  
(Credit Application Number)  
(Municipal Address, Property ID)  
(Description of BMP)

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(Company name) has served as the engineering consultant for the certification of the (description of BMP) at the above noted address. This letter will confirm that I/We have inspected the (BMP) on the above noted lands and do hereby certify that the all systems have been designed and constructed in accordance with (Drawing No. \_\_\_\_, dated \_\_\_\_ and Functional Servicing Report, dated \_\_\_\_).

We further certify that all BMP systems are completed and operational in accordance with sound engineering practices and principles and as applicable are based on the Sustainable Technologies Evaluation Program (STEP) Low Impact Development Stormwater Management Planning and Design Guide.

Further, I/We hereby confirm that the (BMP) has been implemented into service and is operational as of (date).

Should you have any questions or concerns regarding the letter please do not hesitate to contact this office at\_\_.

Yours truly,

(Name of company)

(P. Eng Signature)  
(print name)

P.Eng. Stamp

**A1.5 Inspection and Maintenance Log Template [NEW]**

**Stormwater Credit Inspection and Maintenance Log**

A maintenance log, such as below, must be completed at a minimum of once per year over the entire 5-year period of the credit and be made available for submission to City staff upon request. All credited BMPs must be inspected. Each row represents one annual inspection for one BMP.

Credit App. #: \_\_\_\_\_

Site Address: \_\_\_\_\_

Site Rep. Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

<b>Example of BMP Inspected</b>	<b>Inspector Name</b>	<b>Date of Inspection</b>	<b>Confirmation that Equipment is Functioning Properly</b>	<b>Deficiencies (if applicable)</b>	<b>Actions Taken (including dates)</b>	<b>Date of Resolution</b>	<b>Confirmation that Equipment is Functioning Properly</b>
Roof drains							
Parapet scuppers							
Orifice plate							
Oil and grease treatment devices							
Permeable pavement							
Infiltration galleries							
Etc.							

Include images of the BMP at time of inspection with your log. If maintenance activities are performed, include an after photo of the BMP

### Appendix 2: Credit Evaluation Criteria

#### A2.1 Peak Flow Reduction (up to 40%)

##### Evaluation criteria

Variable credit available based on the City's stormwater quantity control requirements for development, which is referred in Appendix 3.

##### Evaluation metric

A full 40% credit would be granted to properties that full satisfy the quantity control requirements for their specific watershed for the entire impervious surface area of the site, as referred in Appendix 3.

In the following watersheds, that do not require quantity control, a peak flow reduction credit is not eligible to property owners:

- Credit River
- Cumberland Creek
- Etobicoke Creek – lower and main branch
- Fletchers Creek
- Moore Creek

Self-certification shall be provided by way of a report certified by a Professional Engineer that includes supporting calculations.

#### A2.2 Water Quality Treatment (up to 30%)

##### Evaluation criteria

Water quality credits are available to properties that provide onsite quality treatment regardless of the presence of a downstream Municipal stormwater management facility. A sliding scale based on water quality treatment levels is applied.

Consistent with Provincial criteria for enhanced treatment - note that the current reference for Provincial criteria for enhanced treatment is the Stormwater Management Planning and Design Manual, March 2003, Ontario Ministry of the Environment.

##### Evaluation metric

The percentage allocated for this credit is based on the BMP meeting the enhanced, normal, or basic levels for water quality treatment and the percentage of impervious area that is directed to an approved on-site quality control BMP. Self-certification shall be provided by way of a report certified by a Professional Engineer.

Water Quality Treatment Level (Total Suspended Solids Removal %)	Maximum Credit Available
Enhanced (80% TSS removal)	Up to 30%
Normal (70% TSS removal)	Up to 23%
Basic (60% TSS removal)	Up to 15%

*Note: Water quality treatment below 60% TSS removal, or "Basic" level treatment, will not be eligible for a credit.*

### A2.3 Runoff Volume Reduction (up to 30%)

#### Evaluation criteria

Based on the percentage capture of first 15 mm of rainfall during a single rainfall event.

#### Points of clarification

- a. “capture” means for on-site retention managed by way of infiltration, evapotranspiration, re-use or filtration.
- b. Only applies to rainfall landing on the impervious area(s) of the property; and
- c. “single rainfall event” means a period of rainfall activity defined by preceding and following periods of at least 24 hours without measurable rainfall.

#### Evaluation metric

The percentage allocated for this credit is based on the runoff volume reduction achieved over the impervious surfaces of the site using a sliding scale of 2% per mm achieved. A site which fully retains the first 15 mm of rainfall would achieve a maximum credit of 30%. Self-certification shall be provided by way of a report certified by a Professional Engineer.

### A2.4 Operations and Activities (up to 20%)

#### Sustainable Landscaping (max. credit: 5%)

Credit-eligible sustainable landscaping practices are required to align with industry best management practices and applicable standards in Ontario. The City has the sole discretion, in consultation with staff/partners, to determine whether or not the conversion is eligible for a credit.

- Confirm the complete submission of required documents;
- Validate native plants and percentage against CVC’s Native Plant list;
- Validate the area calculation using aerial imagery and/or other survey/drawing information.
  - Full credit (5%) will be granted if the applicant is able to demonstrate that 5% or more of the total parcel/property area has been converted to sustainable landscaping as defined in the Credit Program;
  - No credit will be granted if the converted area is less than 5% of the total property area.

#### Education Program (max. credit: 5%)

- Confirm the complete submission of required documents;
- Validate at least 2 hours of educational sessions or training will be/has been provided per year.

#### Paved Area Sweeping (max. credit: 10%)

- Confirm the complete submission of required documents;
- Validate the property area will be/has been swept at least 2 times per year.

#### Salt Management Plan (max. credit: 10%)

- Confirmation of SAS Contractor or Site Certification;
- Evidence of implementing the Salt Management Plan is received.

## Stormwater Credit Application Guide

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### **Pollution Prevention Lite** (max. credit: 10%)

- Completed P2 Checklist with City staff on site (see Appendix 4);
- Implementation of required P2 improvements as required by the City;
  - Full credit (10%) will be granted once all recommended improvements are implemented and confirmed;
  - No credit will be granted if the applicant failed to take required actions within required period of time.

### **Pollution Prevention Plan** (max. credit: 20%)

- Confirm the completion of content against Schedule B of the [Storm Sewer Use By-law](#), as amended.

### Appendix 3: Stormwater Quantity Control Requirements

Stormwater Quantity Control Requirements for each watershed are outlined in Table 1 to 5 of [Section 8 Storm Drainage Design Requirements](#), as part of the [City of Mississauga Transportation and Works Development Requirements Manual](#).

**Appendix 4: Pollution Prevention (P2) Site Inspection Checklist (Sample)**

**P2 Lite Site Inspection Checklist**

Site Address: \_\_\_\_\_

Inspection Date: \_\_\_\_\_

1) Pre-Inspection Components		Y/N
Wear appropriate PPE (safety boots, safety vests, hard hats)		
Park the vehicle in a safe and appropriate spot when arriving on-site		
2) Access Points to the Private Storm Sewers		
<p>Check all the possible inlets and access points that lead to the Storm Sewer system on the industrial property. Indicate how many of each access points exist on the property.</p> <p>Mark their approximate location on the aerial image of the property.</p>	<input type="checkbox"/> Catch basins	How many: _____
	<input type="checkbox"/> Ditch Inlets	How many: _____
	<input type="checkbox"/> LID	
	<input type="checkbox"/> Infiltration Gallery	
	<input type="checkbox"/> Other	
3) Existing Pollution Prevention Techniques		
<p>Check which treatment techniques are currently implemented on the property, indicating how many of each exist.</p> <p>Mark their approximate location on the aerial figure.</p>	<input type="checkbox"/> Oil-Grit Separator	How many: _____
	<input type="checkbox"/> Totes	How many: _____
	<input type="checkbox"/> Spill Kit	How many: _____
	<input type="checkbox"/> Spill Response Plan	
	<input type="checkbox"/> Drip Pan	
	<input type="checkbox"/> Secondary Containment	
	<input type="checkbox"/> Catch basin insert or sediment filters	
<input type="checkbox"/> Other: _____		

<b>4) Known Pollution Sources</b>	
<p>Check all the possible pollution sources identified on the property. Indicate how many of certain pollution source types exist on the property</p>	<p><input type="checkbox"/> Exterior washing</p> <p><input type="checkbox"/> Waste storage containers</p> <p>What type: _____ How many: _____</p> <p><input type="checkbox"/> Litter/Debris</p> <p><input type="checkbox"/> Uneven Surface Grade</p> <p><input type="checkbox"/> Poor equipment storage/leaking</p> <p><input type="checkbox"/> Uncovered bins</p> <p><input type="checkbox"/> Other: _____</p>
<b>5) Potential Pathways</b>	
<p>Check all the possible pathways that would mobilize pollution sources to the Storm Sewer system.</p>	<p><input type="checkbox"/> Overland flow</p> <p><input type="checkbox"/> Graded loading docks</p> <p><input type="checkbox"/> Pollution source near CB</p> <p><input type="checkbox"/> Other: _____</p>
<b>6) Recommended Pollution Prevention Techniques</b>	
	<p><input type="checkbox"/> Oil-Grit Separator</p> <p><input type="checkbox"/> Totes</p> <p><input type="checkbox"/> Spill Kit</p> <p><input type="checkbox"/> Spill Response Plan</p> <p><input type="checkbox"/> Secondary Containment</p> <p><input type="checkbox"/> High Risk Work Activity Location</p> <p><input type="checkbox"/> Move source away from CB</p> <p><input type="checkbox"/> Catch basin insert or sediment filters</p> <p><input type="checkbox"/> Other: _____</p>



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**Additional Notes/Comments**

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## Appendix 5: Examples

### Example 1A: Pre-existing BMPs – previous development criteria

#### Categories: Peak Flow

Land Use	Site Area (ha)	Building Area (ha)	Paved Area (ha)	Total Impervious Area (ha)	Subwatershed
Industrial	0.6	0.1	0.2	0.3	Cooksville Creek

#### NOTES

- Site constructed 10 years ago as a prestige industrial property with sloped roof
- Applicant satisfied previous stormwater criteria during the development approvals process (i.e. Cooksville criteria is now more stringent than existing control provided on-site)
- An underground stormwater storage tank controls the 100-year post-development flow to nearly pre-development levels for the total impervious area (0.3 ha)
- Stormwater letter brief outlines that:
  - Roof flows are uncontrolled
  - Maximum credit (40%) would be achieved if post-development site flows were 13 l/s

Storm event (Post to Pre)	Pre-development flows (2-yr), RC 0.25	Post-development flows (100-yr) – no controls, RC 0.95	Post-development flows (100-yr) with controls
100-year to 2-year	13 l/s	<b>111 l/s</b>	<b>28 l/s</b>

#### CREDIT REQUEST

Category	Credit Request
Peak Flow Reduction	34
Water Quality Treatment	0
Runoff Volume Reduction	0
Operations and Activities	0
<b>Total (max 50%) →</b>	<b>34</b>

#### REQUIRED SUBMITTALS

1. Credit application form
2. Stormwater letter brief, signed and sealed by a Professional Engineer, summarizing the above points that also includes:
  - a. Calculations
  - b. Drawing illustrating the proposal
  - c. Details, cross-section of underground storage tank
3. Certification letter, signed and sealed by a Professional Engineer, confirming the tank has been installed as designed

## Stormwater Credit Application Guide

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### Example 1A: (cont'd)

#### CREDIT ASSESSMENT

Submittals have all been signed/sealed and all supporting documentation is included.

#### PEAK FLOW REDUCTION: 34% (OF 40% MAX.)

**Evaluation:** The proposed condition flows require approximately ~72m<sup>3</sup> of stormwater quantity storage. The tank satisfies the storage requirements and the engineer's certification confirms the tank was built as designed.

For every 2.45 l/s increase in flow over 13 l/s the credit is reduced by 1% (i.e.  $[111-13]/40 = 2.45$  l/s). For credit purposes, target flow of 28 l/s represents ~6% credit reduction (i.e.  $[28-13]/2.45 = 6.1\%$ ) so the applicant is awarded 34% in this category.

Note: Credit would be reduced further if stormwater not controlled for total impervious area.

#### WATER QUALITY TREATMENT: 0% (OF 30% MAX.)

**Evaluation:** No credit requested.

#### RUNOFF VOLUME REDUCTION: 0% (OF 30% MAX.)

**Evaluation:** No credit requested.

#### OPERATIONS AND ACTIVITIES: 0% (OF 20% MAX.)

**Evaluation:** No credit requested.

Category	Credit Request	Credit Approved
Peak Flow Reduction	34	34
Water Quality Treatment	0	0
Runoff Volume Reduction	0	0
Operations and Activities	0	0
Total (max 50%)→	34	34

## Stormwater Credit Application Guide

### Example 1B: Existing Building with Roof Controls

#### Categories: Peak Flow

Land Use	Site Area (ha)	Building Area (ha)	Paved Area (ha)	Total Impervious Area (ha)	Subwatershed
Office	12	4	5	9	Cooksville Creek

#### NOTES

- Site constructed years ago and drains to a downstream municipal stormwater pond that provides water quantity control to pre-development levels
- There are no stormwater management measures on the existing site itself, other than roof top flow controls have been implemented on the building
- Stormwater letter brief and supporting material outlines that:
  - Target 2-year predevelopment flow would require reduction of 2.9 cms (from 3.3 cms to 0.4cms)
  - Roof top flow controls are implemented on the building to 0.01 cms (42 l/s / 4ha)
  - Paved area, 5 ha, RC 0.95 = 1.85 cms
  - Total proposed flow of 1.86 cms
  - Actual 100-year flow reduction of 1.44 cms (3.3 – 1.86) is approximately 50% (1.44/2.9) toward full credit (0.5 x 40% = 20%)

Storm event (Post to Pre)	Pre-development flows (2-yr), RC 0.25	Post-development flows (100-yr) – no controls (100-yr), RC 0.95	Post-development flows (100-yr) with controls
100-year to 2-year	0.4 cms	<b>3.3 cms</b>	<b>1.86 cms</b>

#### CREDIT REQUEST

Category	Credit Request
Peak Flow Reduction	20
Water Quality Treatment	0
Runoff Volume Reduction	0
Operations and Activities	0
Total (max 50%)→	20

#### REQUIRED SUBMITTALS

1. Credit application form
2. Stormwater letter brief, signed and sealed by a Professional Engineer, summarizing the above points that also includes:
  - a. Calculations
  - b. Drawing illustrating the proposal
  - c. Details, cross-section of proposed permeable paver construction
  - d. Geotechnical information relating to soil permeability
3. Certification letter, signed and sealed by a Professional Engineer, confirming the permeable pavers have been installed as designed

## Stormwater Credit Application Guide

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### Example 1B: (cont'd)

#### CREDIT ASSESSMENT

Submittals have all been signed/sealed and all supporting documentation is included.

#### PEAK FLOW REDUCTION: 20% (OF 40% MAX.)

**Evaluation:** City supports peak flow reduction from roof top controls. No credit provided for the downstream stormwater pond as it is municipal infrastructure. Credit is assessed on the basis of roof controls only, as remaining paved area is uncontrolled, and the documentation reviewed supports a credit of 20% in this category.

#### WATER QUALITY TREATMENT: 0% (OF 30% MAX.)

**Evaluation:** No credit requested.

#### RUNOFF VOLUME REDUCTION: 0% (OF 30% MAX.)

**Evaluation:** No credit requested.

#### OPERATIONS AND ACTIVITIES: 0% (OF 20% MAX.)

**Evaluation:** No credit requested.

Category	Credit Request	Credit Approved
Peak Flow Reduction	20	20
Water Quality Treatment	0	0
Runoff Volume Reduction	0	0
Operations and Activities	0	0
Total (max 50%)→	20	20

## Stormwater Credit Application Guide

### Example 2: New or Re-development Application – current SWM criteria

#### Categories: Peak Flow, Water Quality & Runoff Volume

Land Use	Site Area (ha)	Building Area (ha)	Paved Area (ha)	Total Impervious Area (ha)	Subwatershed
Commercial	2	0.5	0.5	1	Mullet Creek

#### NOTES

- Site recently constructed through development application
- Constructed an infiltration gallery that captures roof drainage as well as store for quantity control for total impervious area (1 ha)
- The gallery utilizes a series of plastic chambers that can hold/infiltrate up to 100m<sup>3</sup> of stormwater and includes a pre-treatment chamber to settle out large materials that could block or impair the function of the infiltration gallery
- A control device is provided on the infiltration gallery to allow it to detain flows from larger storms to meet peak flow requirements, as well as hold back water for infiltration during more frequent storms
- An Oil Grit Separator (OGS) device has been installed for water quality treatment for the total impervious area
- Stormwater letter brief outlines that:
  - 100m<sup>3</sup> of stormwater storage equates to 10mm of runoff volume reduction (100m<sup>3</sup>/10000m<sup>2</sup>) over the impervious area
  - Maximum credit (40%) would be achieved if post-development site flows were controlled to pre-development flows for all storm events

Storm event (all)	Pre-development flows (RC 0.25)	Post-development flows – no controls (RC 0.95)	Post-development flows with controls
100-year	98 l/s	<b>371 l/s</b>	<b>98 l/s</b>
50-year	88	<b>335 l/s</b>	<b>88</b>
25-year	79	<b>301 l/s</b>	<b>79</b>
10-year	69	<b>262 l/s</b>	<b>69</b>
5-year	56	<b>212 l/s</b>	<b>56</b>
2-year	42	<b>158 l/s</b>	<b>42</b>
Regional	--	--	--

#### CREDIT REQUEST

Category	Credit Request
Peak Flow Reduction	40
Water Quality Treatment	30
Runoff Volume Reduction	30
Operations and Activities	0
Total (max 50%) →	50

## Stormwater Credit Application Guide

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### Example 2: (cont'd)

#### REQUIRED SUBMITTALS

1. Credit application form
2. Stormwater letter brief, signed and sealed by a Professional Engineer, summarizing the above points that also includes:
  - a. Calculations
  - b. Drawing illustrating the infiltration gallery location
  - c. Details, cross-section of infiltration gallery
  - d. Geotechnical information relating to soil permeability
3. Certification letter, signed and sealed by a Professional Engineer, confirming the infiltration gallery has been installed as designed

#### CREDIT ASSESSMENT

Submittals have all been signed/sealed and all supporting documentation is included.

#### PEAK FLOW REDUCTION: 40% (OF 40% MAX.)

**Evaluation:** The proposed condition flows require approximately 100m<sup>3</sup> of stormwater quantity storage. The gallery satisfies the storage requirements and the engineer's certification confirms the gallery was built as designed.

#### WATER QUALITY TREATMENT: 30% (OF 30% MAX.)\*

**Evaluation:** The City recognizes OGS devices to provide total suspended solids removal and the design brief indicates it can provide Enhanced Treatment (80% TSS removal).

#### RUNOFF VOLUME REDUCTION: 30% (OF 30% MAX.)\*

**Evaluation:** Based on the documentation reviewed, there is agreement that the proposed measures equate to a 10mm reduction of runoff volume over the impervious area.

#### OPERATIONS AND ACTIVITIES: 0% (OF 20% MAX.)

**Evaluation:** No credit requested.

\*The applicant has multiple eligible and substantiated BMP's to achieve the maximum credit of 50%. Applicant confirmed their preference is to receive award for Peak Flow Reduction (40%) and Water Quality Treatment (remaining 10%) as those are their preferred BMPs to inspect and maintain to meet the terms and conditions of the program. Runoff volume credit has been withdrawn.

Category	Credit Request	Credit Approved
Peak Flow Reduction	40	40
Water Quality Treatment	30	10 (remainder*)
Runoff Volume Reduction	30	0 (withdrawn*)
Operations and Activities	0	0
Total (max 50%)→	50	50

## Stormwater Credit Application Guide

### Example 3: Retrofit with LID (i.e. permeable pavement)

Categories: *Peak Flow*

Land Use	Site Area (ha)	Building Area (ha)	Paved Area (ha)	Total Impervious Area (ha)	Subwatershed
Office	12	4	5	9	Wolfedale Creek

#### NOTES

- Site constructed approximately twenty (20) years ago and drains to a downstream municipal stormwater pond that provides water quantity control to pre-development levels
- There had been no stormwater management measures on the existing site previously
- Applicant has installed permeable pavers in all parking stalls without changing site grading
  - Note that permeable products can also contribute to water quality and runoff volume reduction requirements, however, the benefit was not substantiated/applied for in this example.
- Area of parking stalls is 2.5ha (50% of the 5 ha paved area) = 0.344 cms
- Remaining paved area, 2.5 ha (RC 0.95) = 0.654 cms
- Roof top flow controls will be implemented on the building to 0.01 cms (42 l/s / 4ha)
- Total proposed flow of 1.0 cms
- Stormwater letter brief outlines that:
  - Runoff co-efficient for permeable parking stalls is 0.50 compared to conventional pavement which is 0.95
  - Current watershed criteria of 10-year post to 2-year pre is more stringent than when BMP was installed
  - Target 2-year predevelopment flow would require reduction of 1.9 cms
  - Actual 10-year flow reduction of 1.3 cms (2.3 – 1.0) is approximately 68% (1.3/1.9) toward full credit (0.68 x 40% = ~27%)

Storm event (Post to Pre)	Pre-development flows (2-yr), RC 0.25	Post-development flows (10-yr) – no controls, RC 0.95	Post-development flows (10-yr) – with controls
10-year to 2-year	0.4 cms	<b>2.3 cms</b>	<b>1.0 cms</b>

#### CREDIT REQUEST

Category	Credit Request
Peak Flow Reduction	27
Water Quality Treatment	0
Runoff Volume Reduction	0
Operations and Activities	0
Total (max 50%) →	27



## Stormwater Credit Application Guide

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### Example 3: (cont'd)

#### REQUIRED SUBMITTALS

1. Credit application form
2. Stormwater letter brief, signed and sealed by a Professional Engineer, summarizing the above points that also includes:
  - a. Calculations
  - b. Drawing illustrating the proposal
  - c. Details, cross-section of proposed permeable paver construction
3. Certification letter, signed and sealed by a Professional Engineer, confirming the permeable pavers have been installed as designed

#### CREDIT ASSESSMENT

Submittals have all been signed/sealed and all supporting documentation is included.

#### PEAK FLOW REDUCTION: 27% (OF 40% MAX.)

**Evaluation:** City supports 0.5 for runoff co-efficient of permeable pavers on the presumption of proper installation. No credit provided for the downstream stormwater pond as it is municipal infrastructure. Credit is assessed on the basis of on-site measures only and the documentation reviewed supports a credit of 27% in this category.

#### WATER QUALITY TREATMENT: 0% (OF 30% MAX.)

**Evaluation:** No credit requested.

#### RUNOFF VOLUME REDUCTION: 0% (OF 30% MAX.)

**Evaluation:** No credit requested.

#### OPERATIONS AND ACTIVITIES: 0% (OF 20% MAX.)

**Evaluation:** No credit requested.

Category	Credit Request	Credit Approved
Peak Flow Reduction	27	27
Water Quality Treatment	0	0
Runoff Volume Reduction	0	0
Operations and Activities	0	0
Total (max 50%)→	27	27

## Stormwater Credit Application Guide

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### Example 4: Existing BMPs & Pollution Prevention

#### Categories: *Water Quality and Operations & Activities*

Land Use	Site Area (ha)	Building Area (ha)	Paved Area (ha)	Total Impervious Area (ha)
Gas Station	7	3	3.5	6.5

#### NOTES

- Site was constructed approximately ten (10) years ago with an oil-grit separator on-site
- The operation involves the supply of non-hazardous materials related to automotive parts fabrication
- The property manager retained a contractor to clean-out the oil-grit separator 2 years ago and has since kept semi-annual inspection logs
- A protocol has been established for the handling of all materials on-site and employees are required to attend mandatory training
- The protocol has been formalized into a Pollution Prevention Plan which is kept on-site for the site supervisor and satisfies the City' storm sewer use by-law requirements
- Stormwater letter brief outlines that:
  - The oil-grit separator was designed for Enhanced Level Treatment ( 80% TSS removal from the entire impervious area)

#### CREDIT REQUEST

Category	Credit Request
Peak Flow Reduction	0
Water Quality Treatment	30
Runoff Volume Reduction	0
Operations and Activities	20
Total (max 50%)→	50

#### REQUIRED SUBMITTALS

1. Credit application form
2. Stormwater letter brief, signed and sealed by a Professional Engineer, summarizing the above points that also includes:
  - a. Drawing showing the location of the oil-grit separator
  - b. Specifications of the oil-grit separator from the manufacturer, if possible
  - c. Documentation from the contractor regarding the cleanout and/or inspection logs
3. Certification letter, signed and sealed by a Professional Engineer, confirming the oil-grit separator is performing as specified
4. Pollution prevention plan including sign-off sheets pertaining to employee in-house training

## Stormwater Credit Application Guide

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### Example 4: (cont'd)

#### CREDIT ASSESSMENT

Submittals have all been signed/sealed, as necessary, and all supporting documentation is included.

#### PEAK FLOW REDUCTION: 0% (OF 40% MAX.)

**Evaluation:** No credit requested.

#### WATER QUALITY TREATMENT: 30% (OF 30% MAX.)

**Evaluation:** The only documentation from the Contractor that the property manager was able to find was the invoice for the work. However, the inspection logs were made available which suggested that the oil-grit separator was in a functional state. In addition, the engineer's certification backed up the inspection logs. On this basis, full credit is supported in this category.

#### RUNOFF VOLUME REDUCTION: 0% (OF 30% MAX.)

**Evaluation:** No credit requested.

#### OPERATIONS AND ACTIVITIES: 20% (OF 20% MAX.)

**Evaluation:** The practices that the property manager has implemented are consistent with the requirements for a pollution prevention plan.

Category	Credit Request	Credit Approved
Peak Flow Reduction	0	0
Water Quality Treatment	30	30
Runoff Volume Reduction	0	0
Operations and Activities	20	20
Total (max 50%)→	50	50

## Stormwater Credit Application Guide

### Example 5: Park Development – Existing BMPs

#### Categories: Peak Flow & Water Quality

Land Use	Site Area (ha)	Building Area (ha)	Paved Area (ha)	Total Impervious Area (ha)	Subwatershed
Park	6	0.2	0.3	0.5	Sheridan Creek

#### NOTES

- Site was constructed approximately 5 years ago and includes low impact development elements including permeable paver parking stalls and a bioretention system
- Site design evolved from a conventional neighbourhood park to retain a wetland feature, in collaboration with the conservation authority, and incorporates numerous sustainable design elements and educational signage
- Park Operations staff have been working alongside conservation authority staff to maintain the low impact development features
- Permeable paver parking stalls are placed on an area of 2,000m<sup>2</sup>
- Stormwater letter brief outlines that:
  - Bioretention system provides quality treatment (Level 1) for the entire 3,000m<sup>2</sup> paved area; not required for building area
    - Note: bioretention systems may also provide some peak flow and runoff volume reduction, however, this BMP was not used to apply for these categories
  - Runoff co-efficient for parking stalls is 0.50 compared to conventional pavement which is 0.95 for 0.2 ha (0.04 cms)
  - Remaining 0.3 ha of uncontrolled impervious area produces ~0.11 cms
  - Total proposed flow equates to ~0.15 cms
  - Target 2-year predevelopment flow would require reduction of 0.17 cms
  - Actual 100-year flow reduction of 0.04 cms (0.19 – 0.15) is approximately 24% (0.04/0.17) toward full credit (0.24 x 40% = ~10%)

Storm event (Post to Pre)	Pre-development flows (2-yr)	Post-development flows (100-yr) – no controls (100-yr)	Post-development flows (100-yr) with controls
100-year to 2-year	0.02 cms	<b>0.19 cms</b>	<b>0.15 cms</b>

#### CREDIT REQUEST

Category	Credit Request
Peak Flow Reduction	10
Water Quality Treatment	30
Runoff Volume Reduction	0
Operations and Activities	0
Total (max 50%)→	40

#### Example 5: (cont'd)

## Stormwater Credit Application Guide

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### REQUIRED SUBMITTALS

1. Credit application form
2. Stormwater letter brief, signed and sealed by a Professional Engineer, summarizing the above points that also includes:
  - a. Calculations
  - b. Drawing illustrating the low impact development feature locations
  - c. Details, cross-section of permeable paver construction
  - d. Details, cross-sections and specifications associated with the bio-retention system
3. Certification letter, signed and sealed by a Professional Engineer, confirming the measures have been installed as designed

### CREDIT ASSESSMENT

Submittals have all been signed/sealed, as necessary, and all supporting documentation is included.

#### PEAK FLOW REDUCTION: 10% (OF 40% MAX.)

**Evaluation:** City supports 0.5 for runoff co-efficient of permeable pavers on the presumption of proper installation. No credit provided for the retained wetland feature as it serves primarily an ecological function rather than as a stormwater quantity control facility. Credit is assessed on the basis of on-site permeable parking measures, which is a portion of the total impervious area and the documentation reviewed supports a credit of 10% in this category.

#### WATER QUALITY TREATMENT: 30% (OF 30% MAX.)

**Evaluation:** The bioretention system is actively maintained by Park Operations in collaboration with the conservation authority, who are also monitoring the feature. On the basis of the design reviewed and certified “as-constructed” by the engineer, the bioretention system is considered an acceptable BMP providing 80% TSS removal for the total parking area.

#### RUNOFF VOLUME REDUCTION: 0% (OF 30% MAX.)

**Evaluation:** No credit requested.

#### OPERATIONS AND ACTIVITIES: 0% (OF 20% MAX.)

**Evaluation:** No credit requested.

Category	Credit Request	Credit Approved
Peak Flow Reduction	10	10
Water Quality Treatment	30	30
Runoff Volume Reduction	0	0
Operations and Activities	0	0
Total (max 50%)→	40	40

## Stormwater Credit Application Guide

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### Example 6: Sustainable Landscaping & Site Operations

#### Categories: Operations and Activities

Land Use	Site Area (ha)	Building Area (ha)	Paved Area (ha)	Total Impervious Area (ha)
Office	2	0.2	0.2	0.4

#### NOTES

- Site was constructed approximately 3 years ago and increased the paved area for additional parking
- Currently, the extra parking is underutilized due to an increase in staff working remotely
- Property manager is an advocate for sustainable practices and has reduced the parking area by 50%, converting 0.1 ha to sustainable landscaping
- In addition, property manager has arranged to have the remaining paved areas mechanically swept twice a year
- Letter outlines that:
  - Converted parking area to sustainable landscaping equals 5% of total property (0.1/2 ha)
  - Qualified contractor has been hired to mechanically sweep parking lot twice a year

#### CREDIT REQUEST

Category	Credit Request
Peak Flow Reduction	0
Water Quality Treatment	0
Runoff Volume Reduction	0
Operations and Activities	15
Total (max 50%)→	15

#### SUBMITTALS

1. Credit application form
2. Letter summarizing the above activities that also includes:
  - a. Details and calculation of the converted area to sustainable landscaping
  - b. Drawing/maps illustrating the locations
  - c. Area and frequency of paved sweeping plan

## Stormwater Credit Application Guide

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### Example 6: (cont'd)

#### CREDIT ASSESSMENT

Submittals have all been signed/sealed, as necessary, and all supporting documentation is included.

#### PEAK FLOW REDUCTION: 0% (OF 40% MAX.)

**Evaluation:** No credit requested.

#### WATER QUALITY TREATMENT: 0% (OF 30% MAX.)

**Evaluation:** No credit requested.

#### RUNOFF VOLUME REDUCTION: 0% (OF 30% MAX.)

**Evaluation:** No credit requested.

#### OPERATIONS AND ACTIVITIES: 15% (OF 20% MAX.)

**Evaluation:** For meeting the min. area converted to sustainable landscaping, the site is awarded 5% credit and an additional 10% credit for implementing a paved area sweeping plan.

Category	Credit Request	Credit Approved
Peak Flow Reduction	0	0
Water Quality Treatment	0	0
Runoff Volume Reduction	0	0
Operations and Activities	15	15
Total (max 50%)→	15	15