

Stormwater Fees or Charges Credit Application Guidance Manual

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1. Introduction

The Stormwater Charge Credit Application Guidance Manual is intended to provide general information and assistance associated with the credit application process. This manual is not intended to be all-inclusive and refinements are anticipated as the program matures. Other reference material and stormwater related engineering experience may be required to fulfil the requirements of the application procedure.

The City's Stormwater Team looks forward to working with local business, property owners, engineering and design professionals in reviewing and approving your future credit applications.

2. Stormwater Credit Program Overview

2.1 Objective

The key objective of the Stormwater Credit Program is to recognize and reward property owners who have implemented stormwater and/or pollution prevention best management practices (BMPs) and LID to reduce impacts to the City's stormwater infrastructure by controlling runoff quantity and quality discharged from their property.

The primary goals of the City within its Stormwater Management Program include:

- Reduce the quantity of water entering the storm servicing infrastructure to reduce operational and future capital costs and mitigate potential flooding in areas with insufficient capacity.
- Improve water quality by reducing pollutant loads to the storm system.
- Improve overall environmental conditions through reduced pollutant loadings and the introduction of landscaping that will filter pollutants (i.e., rain gardens, bio-filters, etc.).
- Encourage infiltration measures to reduce overall runoff volumes, while still protecting groundwater quality, particularly considering existing Source Water Protection Policies.
- Encourage practices by individuals to reduce runoff and protect water quality at source.

2.2 Background

The City of Guelph has implemented a Stormwater Credit Program to encourage and facilitate the implementation of on-site stormwater management through the use of source controls and activities such as Low Impact Development (LID) and other green infrastructure. It is recognized that these source control measures provide a cost effective means of protecting water quality, provide environmental benefits and reduce the quantity of stormwater runoff entering the stormwater collection system. In addition, source controls can reduce the City's long-term costs for the

stormwater services program. The credit program includes all non-residential (industrial, commercial, institutional) as well as some multi-residential properties.

These guidelines are limited to the Credit Program and provide guidance in following through with the associated application process.

2.3 Principles

The Stormwater Credit Program is designed according to the following guiding principles:

- It is available to every non-residential and multi-residential property (including those considered “mixed-use”) in Guelph, unless otherwise exempt from the stormwater charge.
- Property owners have the flexibility to install facilities and implement practices that suit the needs of and opportunities on their property.
- The credit program is directed to encourage measures that are proven to control water quantity and quality at the source and provide environmental benefits.

2.4 Credit Program Basics

Stormwater credits are effective for a maximum term of four (4) years from the date of approval, subject to compliance with terms and conditions, and may be renewed for subsequent four (4) year terms.

While the initial credit application is focused on demonstrating the design and performance of BMP/LID facilities, the renewal application is focused on demonstrating that these are properly maintained and in a state of good repair.

If credit-approved facilities are added, expanded, reduced, deleted or in any way modified such that their level of performance relative to their approved credit amount has changed, credit holders must notify the City and update their credit application accordingly.

3. Stormwater Credit Program Framework

3.1 Program Eligibility

All non-residential properties (including mixed-use properties) and multi-residential buildings/complexes are eligible for the credit program, except for stormwater account holders who have been granted an exemption from the stormwater charge for all or a portion of their property. Individual homes and other residential properties with less than 6 dwelling units are not eligible for the credit program. A credit application can be submitted for eligible stormwater facilities located in common areas that serve townhouses and condominiums (and are maintained and operated by a homeowner’s association or other entity). The credit will only be applied to the entity acting on behalf of all homeowners. If other arrangements have been made such that individual residential units are billed separately, no credit is available for the communal BMP/LID facilities.

If you have any questions about your eligibility, please call 519-822-1260 x 3486 or email stormwater@guelph.ca. Participation in the credit program is by application only. Award of credits is subject to approval of the credit application by City staff.

3.2 Credit Schedule

Stormwater credits are available in each of four categories, which align with the overarching objectives of the City’s stormwater program (**Table 1**). Detailed descriptions and examples of the interpretation of these evaluation criteria are provided in **Appendix B** and **Appendix C**, respectively.

Table 1. Non-Residential Stormwater Credit Categories

Table 1. Non-Residential Stormwater Credit Categories

Credit Category	Description / Basis for Charge Reduction	Maximum Credit
Peak Flow Reduction	Facilities that control the peak flow of stormwater discharged from the property, based on the outlet rate in comparison to natural hydrologic conditions.	15%
Runoff Volume Reduction	Facilities that control the amount of stormwater retained on the property, based on retention volume resulting from increased infiltration, evapotranspiration, or reuse.	40%
Water Quality Treatment	Facilities that control the quality of stormwater discharged from the property, based on treatment type, pollutant load reduction, or MOECC level of protection.	15%
Operations and Activities	Non-structural measures including education programs and pollution prevention / risk management practices.	15%

Maximum Credit Available (Capped) 50%

A maximum of 50% credit can be achieved by a property owner or stormwater account holder. The 50% cap reflects the maximum proportion of the City’s stormwater program in terms of cost that may be beneficially impacted by on-site BMP/LID facilities. The balance of the City’s program requires sustainable funding for general repair/replacement of existing infrastructure/conveyance regardless of facilities that may be in place on private and public lands.

3.3 Credit-Eligible Facilities and Practices

This credit program is primarily performance-based, rather than technology-based. This means that credits are awarded based on how well a BMP/LID facility achieves the defined performance criteria (described in detail in **Appendix B**), rather than awarded based on a prescriptive set of practices (e.g., X% credit for a green roof LID, Y% credit for a detention pond BMP). Performance-based programs encourage creativity, provide flexibility and enable property owners to pursue technologies best suited for their properties and particular needs, as permitted by existing by-laws, codes, and regulations.

The City recognizes that some property owners may be unfamiliar with BMP/LID technologies that may be credit-eligible. The following is a sample list of common practices:

- Infiltration galleries
- Permeable pavement
- Rainwater cisterns
- Enhanced vegetated swales
- Constructed wetlands
- Stormwater ponds
- Rain gardens/bioretention systems
- Roof gardens/green roofs
- Oil/grit separators
- Street sweeping programs
- Pollution prevention plans
- Salt management plans

Many of the practices listed above could be eligible for more than one type of credit. For example, the City recognizes that a BMP may provide both peak flow reduction and runoff volume reduction. In such cases, credits may be awarded for both categories. The cumulative maximum credit available to any property is 50%.

Eligibility of a BMP/LID facility is contingent on the Applicant providing documentation on the design details, function and proof of regulatory/permitting compliance as necessary for the initial credit application. For subsequent credit renewals, proof is required documenting ongoing maintenance through self-certification reports and possibly City inspections. If the approved facility is not functioning as intended or has been substantially altered or removed for any reason, the applicable credit(s) may be cancelled.

Drainage to any stormwater management facility, for which maintenance is funded through the Stormwater Charge program, located within the municipal right-of-way or within a permanent easement maintained by the City of Guelph, is not eligible for a credit.

4. Application Process

4.1 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 for the first time; or, (2) re-applying subsequent to the cancellation of a credit approval.
2. **Credit Update Application** – when an approved credit needs to be updated to reflect a change to the approved facilities.
3. **Credit Renewal Application** – when an approved credit is about to expire or has expired no more than one year prior to the end of the initial/renewal credit cycle.

In all cases, an application package consisting of a completed application form and all required supporting documentation 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. The report, including relevant supporting information and regulatory

agency permits, shall meet the City of Guelph's development requirements and generally accepted professional practices. Full supporting documentation requirements are outlined in **Appendix A**. The application review process is discussed in detail under Section 4.3.

The Applicant is solely responsible for costs incurred in the preparation of the required documentation and/or the submission of the credit application. There is currently no application fee.

4.2 Application Forms

All forms must be completed in their entirety by the Applicant as part of the process of applying for stormwater credits. Currently, the City will accept completed application forms by email (stormwater@guelph.ca) or by mail and/or supporting documentation in either hard-copy or digital (PDF) format. The forms are available through the City's web page:

- Download Printable Application (link not live)

The following are explanations of terms used on the credit application forms:

- Registered Owner and Authorized Agent for any Other Registered Owners – this is to be chosen if the Applicant is the owner of the property and has permission to act on behalf of any other owners of the property;
- Authorized Agent for All Registered Owners – this is to be chosen if the Applicant is not an owner of the property and has permission to act on the behalf of all the owners of the property;
- Property ID Number(s) – this number is created for every parcel of land in Guelph by the City's Geographic Information System (GIS)];
- Status of BMP/LID facilities:
 - Existing – facility is constructed and operational at the time of applying;
 - Proposed as Retrofit – facility is proposed to be implemented into a developed site;
 - Proposed with New Development – facility is proposed to be implemented into a site undergoing re-development.

4.3 Review Timelines

The review of an application is a two-step process:

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

The City will notify the Applicant of receipt of an application and will conduct an initial screening to ensure application completeness. Initial screening for completeness will be conducted within five (5) business days. Applicants may be requested to provide additional information. If an Applicant fails to provide the necessary information, the application will be rejected. The City may also conduct a site inspection, as described in Section 6 below.

Complete applications will be registered and Applicants will be notified. An 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 BMP/LID facilities achieve credits.

The technical review of an application is expected to be completed within thirty (30) business days of the registration date. Credit approval may be awarded or additional information or clarification on matters from the Applicant may be requested during this time. In the event the review results in a request for additional information or clarification on matters from the Applicant, a new thirty (30) business day period will be reset upon receipt of all information requested.

4.4 Effective Date of Approved Credit

Approved credits that result from applications received on or after January 1, 2018 will be retroactive to the registration date of completed applications, from which the approved credits were based on, or the date on which the qualified BMP/LID facilities were put into service, as determined by the City. No credits will be retroactive prior to January 1, 2018.

For credit applications submitted in advance of construction or implementation of facilities, such as during the land development approval process (in conjunction with the stormwater management and site servicing review by City staff) or in advance of a proposed site retrofit or re-development, a credit may be conditionally pre-approved. A credit in this case will become effective upon demonstration by the Applicant or property owner or operator to the satisfaction of the City that the pre-approved facilities have been constructed and/or implemented and are in service.

4.5 Stormwater Charges Billed while Credit Application is Under Review

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

5. Terms and Conditions of Credit Approval

Stormwater credit approvals will be subject to terms and conditions such as operation and maintenance logs as well as on-site inspections. Site specific terms and conditions may be imposed, depending on the nature and use of the property, and operation/maintenance of the facilities.

Stormwater account holders are expected to comply with the terms and conditions of the credit approval, including the facility operation and maintenance plan detailed in the design report or regulatory permit, and other supporting documentation. Further, all such documentation and specified information must be retained on file and made available upon request throughout the entire term of the credit program. Further details are provided in **Appendix A**.

6. Site Inspections

6.1 Inspections during Application Review

As part of the credit application review process, the City may contact the Applicant with a requested date to conduct a site inspection to verify that any constructed BMP/LID facilities are in conformance with the documentation provided and that these measures are operating in accordance with documented performance criteria. The results of an inspection will be taken into consideration as part of the application review.

If the Applicant fails to respond to the City by telephone, email or in writing to coordinate a site inspection date within thirty (30) business days, the credit application will be considered closed. The inspection must proceed within sixty (60) business 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 considered closed.

6.2 Compliance Inspections

Each Applicant that has received a credit for a BMP/LID has the responsibility to regularly inspect, maintain and repair the facility to ensure that it is functioning as designed and as agreed to in the terms and conditions.

In addition, the City reserves the right according to By-law 0135-2015, as amended or any successor by-law, to conduct site inspections and may, at any reasonable time, enter and inspect any property. The intent of the inspections will be to assess whether the facility is being maintained as per the approved credit documentation. Based on the results of a site inspection, credits may be suspended, reduced or cancelled.

At any point during the term of a credit, the City may contact the credit holder with a requested date to conduct the site inspection. City staff performing inspections may request to see operation and maintenance documents which credit holders are required to retain for a minimum of four (4) years. The inspection will result in a grading of either "passed," "suspended" or "failed". Sites that are "suspended" will be given a sixty (60) business day period to take remedial action to bring their property up to a passing standard. Failure to take required actions within sixty (60) business days will result in a failed inspection and termination of credit.

If the credit holder fails to respond to the City by telephone, email or in writing regarding the site inspection request within thirty (30) business days, the credit will be cancelled. If the credit holder wishes to request an alternate inspection date, it must be within thirty (30) business days of the initial date requested by the City. The inspection must proceed within sixty (60) business days of the initial request. If the credit holder is unable to provide a date to facilitate the inspection within this time frame then the inspection will be considered failed and the credit will be cancelled.

The City reserves the right to conduct detailed field measurements and monitoring to verify performance.

7. Credit Update Application

The stormwater account holder is responsible for notifying the City in writing if the BMP/LID facilities undergo a material change, meaning an alteration, improvement, deficiency, or failure that impacts how the facility operates and was not expressly anticipated and addressed by the parties in the credit application process. Material changes may include actions taken by the property owner, a lack of action on the property owner's behalf and/or external factors unrelated to the property owner.

No later than three (3) months after any material change has been undertaken or occurs, the account holder must submit a credit update application to the City. Late submission of the application may result in a discontinuance of the credit amount. The City shall have full and absolute discretion to adjust (increase or decrease) the credit amount accordingly.

8. Credit Renewal Application

Credit holders are advised to submit a complete credit renewal application at least three (3) months prior to the expiration date should they wish to seek a renewal of their existing stormwater credits without experiencing a gap in the credit approval. Applications received after this date may not be processed and approved in time before the previously approved credit expires. In such circumstances, the stormwater 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 yet been reviewed and approved.

The approved credit renewal shall be effective upon the expiration date of the original credit, or as otherwise determined by the City. In general, credit holders wishing to renew their credit shall provide evidence that acceptable operation and maintenance practices have taken place and that the BMP/LID facilities are in a state of good repair. Details on supporting documentation requirements for Credit Renewal Applications are provided in **Appendix A**.

9. Penalties

Credit Suspension, Reduction or Cancellation

The stormwater credit may be suspended, reduced or cancelled by the City under the following circumstances:

1. Failure of the Applicant (or applicable property owner) to make stormwater charge payments as billed by Guelph Hydro;

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/LID facility as required by the terms and conditions of the credit approval;
5. Failure of a BMP/LID facility to operate or meet the performance criteria as documented in the Applicant's approved credit submission ; or,
6. Failure to submit a complete credit renewal application.

In the circumstance that a BMP/LID facility is found to be in a state of disrepair or no longer functions as approved, the Applicant shall reimburse to 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 the previous inspection by the City, whichever is later. If the credit has been cancelled, the Applicant may not re-apply for a credit for a period of twelve (12) months.

Suspension

If a property fails inspection, the credit may be suspended and the stormwater account holder will have sixty (60) business days to repair, clean, fix, or otherwise correct deficiencies, and schedule an inspection with the City. If the account holder fails to demonstrate action and reasonable progress to correct the deficiencies and schedule a re-inspection within sixty (60) business days, the credit will be cancelled. Suspension period extensions may be granted at the discretion of the City.

Cancellation

Customers whose credits have been cancelled may not have them reinstated and will be required to submit a new credit application. A credit re-application 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 City. The decision of the City shall be considered final and binding.

10. Appendix A. Support Documentation for Applications

10.1 New Credit and Credit Update Applications

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

1. **Stormwater Management Report** certified by a qualified Professional Engineer and accompanied by a letter, signed by the author of the report, which allows the City of Guelph to rely on the findings and conclusions presented in the report. This report is expected to be generally consistent with current City of Guelph development requirements for on-site stormwater management reports and must include details outlining the credit percentage applied for and how the facilities 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 infrastructure and/or related drainage details, including location, sizing, inlet/outlet details.
 - b) **Hydrologic and hydraulic calculations** and/or modelling results to support the Peak Flow Reduction, Water Quality Treatment and/or Runoff Volume Reduction credit categories.

2. Pollution Prevention and Management Plans

Every plan claimed under the Operations/Activities credit category (i.e., Pollution Prevention, risk management, salt management, nutrient management, etc.) must be consistent with the requirements under the Storm Sewer By-Law, as amended or any successor or related City by-law. Materials and documentation developed must be prepared or confirmed by a qualified Professional Engineer.

3. Operation and Maintenance Plan

- a) Proposed inspection and documentation plan;

- b) Proposed maintenance and documentation plan;
- c) Details on the procedures to be performed; and
- d) Inspection and maintenance records that 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.

4. Engineer's Certification of Operation

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

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

Note that in a case of a pre-approval application, this certification will not be submitted with the above listed reports and drawings, but instead submitted after the BMP has been constructed. A template for the certification letter has been provided in A1.3.

10.2 Credit Renewal Applications

To renew a previously approved credit, the Applicant must provide a completed application form and the information listed below, as applicable, to the 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;
 - Inspection and maintenance logs, including:
 - Dates of inspection and maintenance activities;
 - 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 inspection and/or maintenance plans, as required.

10.3 Engineering Certification (Template Letter)

Date:

To:

Attn:

RE: BMP/LID Certification for Stormwater Charge Credit
 (Credit Application Number, Stormwater Charge Account ID if applicable)
 (Municipal Address, Property ID)

(Company name) has served as the engineering consultant for the certification of the (description of the stormwater Best Management Practice [BMP] and Low Impact Development [LID] facilities) at the above noted address. This letter will confirm that I/We have inspected the (BMP/LID) 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 stormwater infrastructure including BMP or LID systems are completed and operational in accordance with sound engineering practices and principles and are based on guidance from the City of Guelph and other pertinent provincial design standards (e.g., the MOECC Stormwater Management Planning and Design Manual, and the CVC/TRCA Low Impact Development Design Manual).

Further, I/We hereby confirm that the (BMP/LID system) 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

11. Appendix B. Credit Evaluation Criteria

The City of Guelph owns, operates, and maintains stormwater infrastructure, overland flow routes, waterbodies, and watercourses throughout its jurisdictional boundary. The management of these assets includes the design and construction of capital projects such as stormwater management (SWM) facilities (i.e., ponds), best management practices (BMPs) and low impact development (LID) facilities. It also includes: stream rehabilitation and flood mitigation works; operations, maintenance, and rehabilitation of existing infrastructure; environmental compliance; emergency response and clean-up; street sweeping; and enforcement of by-laws among other activities. The intent of the credit program is to reward non-residential property owners (i.e., stormwater service fee account holders) for proper operation and maintenance of facilities. Financial rewards would also be given for undertaking approved management plans and education programs, or otherwise adopting good housekeeping practices that reduce the amount of stormwater runoff or pollutant loading discharged to the City's stormwater system or otherwise save the City effort and resources needed to operate and manage the system.

Appendix B is intended to provide additional details related to the policies and practices used by City staff to review and evaluate credit applications submitted on behalf of non-residential stormwater service fee account holders. **Appendix C** is intended to illustrate, by way of example, how the credit criteria can be applied over a range of properties and stormwater servicing options. As introduced in Section 3.2 of the guidance manual, **Table B1** shows the various categories of credit-eligible categories in the City's stormwater service fee credit program.

Table B1. Non-Residential Stormwater Credit Categories

Credit Category	Description / Basis for Charge Reduction	Maximum Credit
Peak Flow Reduction	Facilities that control the peak flow of stormwater discharged from the property, based on the outlet rate in comparison to natural hydrologic conditions.	15%
Runoff Volume Reduction	Facilities that control the amount of stormwater retained on the property, based on retention volume resulting from increased infiltration, evapotranspiration, or reuse.	40%
Water Quality Treatment	Facilities that control the quality of stormwater discharged from the property, based on treatment type, pollutant load reduction, or MOECC level of protection.	15%
Operations and Activities	Non-structural measures including education programs and pollution prevention / risk management practices.	15%

Maximum Credit Available (Capped) 50%

The criteria were developed in consideration of the City's current site plan approval procedures and engineering design standards, which can be accessed through the City website (http://guelph.ca/wp-content/uploads/DevelopmentEngineeringManual_v1_web.pdf).

In addition to being consistent and compatible with site development policies, the credit criteria are intended to be sufficiently flexible to reward the voluntary installation and implementation of credit-eligible practices and facilities (i.e., on existing properties that are not undergoing new development, infill/redevelopment, or any activity that does not require approvals under the Ontario Planning Act). These are referred to as retrofit installations in the document.

Further, it is the aim of the credit program to encourage and reward on-site stormwater management in a manner that exceeds engineering design standards. That is, eligible practices

and facilities that provide a greater level of control than is required for site development will be rewarded with a larger reduction to the account holder's stormwater service fee.

The credit program recognizes that multiple (and multi-use) facilities can provide complimentary benefits. As a result, credits are cumulative across all categories, capped at a maximum credit of 50% for any given property.

The categories are meant to distinguish water quantity and water quality design objectives, as well as distinguish structural facilities from non-structural activities. Water quantity objectives have been further divided to reflect the hydraulic factors that attenuate flows or otherwise affect the residence/travel time in response to the conveyance capacity of collection systems (e.g., pipes, ditches, and culverts) and the storage capacity of facilities (e.g., retention devices and detention ponds).

To distinguish water quantity control categories, it is important to define two types of storage. Detention facilities are designed to temporarily detain runoff while providing peak flow and velocity attenuation. Their function is to dispose runoff to the receiving watercourse or waterbody at a desired rate, although the same volume that enters the facility is eventually discharged to the outfall. Retention facilities, however, are designed to permanently retain runoff, thus providing volume reduction. Their function is to mimic natural hydrology (or to supply a consumptive use), with less volume that enters the facility being discharged to the outfall.

Further, retention storage can be provided in two distinct ways. First, by capturing and retaining excess rainfall in a manner that preserves the native water balance through natural hydrologic cycle processes (i.e., infiltration, evaporation, or transpiration). And second, by capturing and retaining excess rainfall to supply non-potable water demands for beneficial consumptive uses (i.e., stormwater reuse), such as landscape irrigation, ornamental fountains, vehicle and equipment washing, dust control, cooling/process water, ice/snowmaking, auxiliary source for firefighting, etc.

Each category is described in detail below. In each category, the metrics for gaging performance and the criteria for awarding credits is described. Performance metrics are meant to provide an objective standard for assessing the relative performance or level of control among a variety of stormwater facilities.

B.1 Peak Flow Reduction

Peak flow reduction is related to hazard protection; that is, managing runoff that results from extreme rainfall events to protect people and property from flooding and erosion hazards. This involves minimizing the flood/erosion risk and severity for people and property by reducing the peak flow rate, depth, or velocity of floodwaters during large storms. To evaluate the relative level of peak flow control provided by BMP/LID facilities, credit applicants can apply hydrologic methods or models to a range of City standard design storm events (i.e., with a return period of 2, 5, 10, 25, 50, or 100 years). The design storm that demonstrates the highest control of peak flows, relative to natural conditions, would be used as the basis for claiming Peak Flow Reduction credits.

Peak flow reduction facilities are sometimes collectively referred to as "gray" infrastructure in reference to the concrete materials used, however these can include natural earthen and vegetated features as well as manufactured materials such as hard plastic, concrete, asphalt, or steel. These facilities may be further classified into conveyance and detention storage assets. Conveyance assets may include pipes, culverts, bridges, swales, roadside ditches, streams, creeks, or other

watercourses. Detention storage assets may include tanks, reservoirs, rooftop storage, parking lot storage, ponds, wetlands, lagoons, lakes, or other waterbodies.

A further distinction is related to the type of drainage system:

- The minor drainage system is designed to receive stormwater from the relatively common rainfall events, transporting flows off buildings and land surfaces into the nearest pipe or ditch collection system. System components may include roof drains, downspouts, service connections, swales, curbs and gutters, ditches and culverts, inlets/catchbasins, storm sewer pipes and outfalls.
- The major drainage system receives stormwater when the minor system capacity has been exceeded. The major system is designed for extreme rainfall events, although flooding will find its own way whether an overland flow route has been designed or not. System components include roadways, swales, ditches, ponds, wetlands, creeks, rivers, culverts and bridges.

The City's engineering design standards for stormwater servicing are applied as part of the site plan approval process. The maximum allowable release of stormwater from a development site (termed the outlet rate) is limited by the site-specific release rate under pre-development conditions. The City's current stormwater criteria requires that the conveyance capacity of minor drainage systems is designed to control flows up to the 5-year design storm. Other factors that may affect the outlet rate include:

- Area-specific release rate established by a subwatershed study or other regulatory requirement; or
- Capacity of the downstream collection system or receiving watercourse/waterbody.

B.1.1 Performance Metrics

The Peak Flow Reduction credit is intended to reward the control of the peak runoff rate discharged from the site. All stormwater infrastructure, whether traditional gray infrastructure, BMPs, or LIDs can provide some level of peak flow attenuation (i.e., reduction in magnitude). The relative level of water quantity control is determined with respect to the outlet rate under baseline conditions.

When developing credit criteria, it is intended that the baseline conditions for any property should reflect the hydrology of undisturbed lands prior to human settlement. This is consistent with the basis of charge for the stormwater service fee, where fee-eligible impervious area is defined according to whether the natural surface cover materials have been replaced or modified with hard surfaces. That is, development activity that takes place on properties will increase the runoff contribution due to any change, disruption, or disturbance of the natural pristine landscape. Consequently, the credit program is intended to reward account holders who take actions to restore the natural hydrology conditions on their properties.

Some jurisdictions have defined a theoretical baseline condition that features native meadow vegetation and well-drained soils throughout their municipality. Recognizing there is spatial variability to land surfaces and underlying soils, natural hydrologic conditions in Guelph are generally indicated by an assumed imperviousness in the range of 0-15% (i.e., an equivalent runoff coefficient, C , in the range of 0.2-0.3). If historical land development conditions are not known, an equivalent Parks land use may be assumed (i.e., 7% impervious or $C=0.25$) for credit application purposes.

For the purposes of the City's stormwater credit program, the following three land development scenarios are defined for individual properties:

- Natural conditions that represent the native hydrologic response prior to any human

- intervention (i.e., baseline “greenfield” conditions);
- Pre-credit conditions that represent the hydrologic response before the credit-eligible facility was installed (i.e., past/current conditions prior to retrofit installations) or before planned development occurs (i.e., pre-development site plan conditions); and
- Credit conditions that represent the hydrologic response after the credit-eligible facility was installed (i.e., current/future conditions following retrofit installations) or after planned development occurs (i.e., post-development site plan conditions).

To assess the relative level of control provided by credit-eligible measures, peak flow rates for a given design storm event can be compared between all three development scenarios: The highest level of control would be indicated by an outlet rate that matches the peak flow under natural hydrologic conditions. The outlet rate varies depending on the rainfall event, which the credit applicant can select from the City’s standard design storm events. For a given design storm event, facilities that reduce the outlet rate to a value that is equal to or less than the natural condition would provide 100% control and therefore receive the full Peak Flow Reduction credit. The lowest level of control would be indicated by an outlet rate that exceeds the peak flow under existing or uncontrolled conditions. Properties whose peak discharge rate exceeds the outlet rate under pre-credit conditions would provide 0% control and therefore receive no credit.

Outlet rates can be linearly interpolated between these two thresholds and Peak Flow Reduction credits assigned accordingly. For example, on a site where the outlet rates were estimated to be 20 L/s, 200 L/s, and 110 L/s (respectively for natural, pre-credit and credit conditions), the level of control for peak flow reduction would be:

$$(200 \text{ L/s} - 110 \text{ L/s}) \div (200 \text{ L/s} - 20 \text{ L/s}) = 50\% \text{ peak flow control}$$

B.1.2 Credit Award Criteria

The Peak Flow Reduction credit will be awarded based on the level of peak flow control multiplied by the maximum eligible credit, 15%. In the example above, a 50% peak flow reduction would result in a service fee credit of:

$$50\% \text{ peak flow control} \times 15\% \text{ maximum credit} = 7.5\% \text{ Peak Flow Reduction credit}$$

Because the peak flow calculations account for the runoff generated from the entire property, the credit awarded does not need to be weighted according to the amount of impervious area that is captured and treated by the BMP/LID facilities.

Credit applicants can apply their choice of hydrologic method or model, and may use the City standard design storm event that demonstrates the highest level of peak flow control. In cases where a unit-area peak discharge rate allowance has been established, a 100% level of control can be claimed if this target is achieved.

Self-certification will be provided by way of a report certified by a Professional Engineer that includes supporting calculations for the peak flows determined under the three development scenarios (i.e., baseline, existing, and proposed).

B.2 Runoff Volume Reduction

Runoff volume reduction is critical to natural resource management; that is, the ideal is to manage stormwater in a way that mimics pre-development conditions to preserve the natural environment. The key function of these facilities is to retain runoff on-site, but they can also help to preserve stream stability and the health of watercourses, lakes, or wetlands by minimizing impacts to flow

duration, hydromodification, hydroperiod, or other in-stream environmental indicators. Further, facilities that provide runoff volume reduction will also demonstrate some level of peak flow attenuation and water quality treatment. As such, they are highly desirable with respect to the City's stormwater management goals and objectives and therefore strongly encouraged through the credit program.

As noted above in Section B.1, retention storage can take advantage of natural processes such as infiltration, evaporation, or transpiration if site conditions allow, or runoff volume can be used to satisfy a non-potable water demand through engineered stormwater reuse systems.

Retention controls are sometimes collectively referred to as "green" infrastructure, in reference to the vegetated landscaping features used, however these can also be constructed with manufactured materials. Retention storage controls may include cisterns, rainwater harvesting systems, rain gardens, permeable pavement, green roofs, turf conversion (i.e., from turfgrass to native grass types and other deep-rooted vegetation), infiltration galleries, and tree planters (e.g., Silva Cells). The design of credit-eligible facilities must be consistent and compatible with the City's engineering design standards, official plan, source water protection policies and other applicable guidelines, standards, policies, etc. For infiltrative devices, only clean runoff sources can be captured and treated (i.e., drainage from landscaped areas and rooftop). Runoff from any other surface type must have pre-treatment. Further, only on-site uses of rainwater are permitted. For large systems, additional investigations may be necessary to address concerns related to localized mounding effects of groundwater recharge, groundwater quality, or other source water protection issues.

The City currently has a rebate program for rainwater harvesting systems. More details can be found on the City website (<https://guelph.ca/living/environment/rebates/rainwater-harvesting-system-rebate/>). To avoid overlap, rainwater harvesting systems are not currently eligible under the credit program. Account holders with rainwater harvesting systems should apply separately through the rebate program.

B.2.1 Performance Metrics

The Runoff Volume Reduction credit is intended to reward the control of runoff volume discharged from the site, either on a per rainfall event basis or over the long-term (i.e., as part of an average annual water budget analysis).

The credit is applied in proportion to the amount of runoff retained on site. Compared to peak flow reduction, it is much more difficult to achieve historical runoff volumes prior to development. It is often cost-prohibitive to attempt to return a site to natural hydrologic conditions, particularly in older urbanized areas with high imperviousness or where soils have been heavily compacted. As a result, the relative level of water quantity control is determined with respect to pre-credit and credit conditions only, that is, with and without the SWM/BMP/LID facilities in place.

B.2.2 Credit Award Criteria

The Runoff Volume Reduction credit will be awarded based on the level of retention volume control multiplied by the maximum eligible credit, 40%. A 1% credit for retention volume control will be added for each millimeter of runoff volume retained on site, to a maximum of 40%. For example, on a site where it is demonstrated that the runoff from a 25 mm rainfall event can be retained on site, would result in a service fee credit of:

25 mm retention volume × 1% per mm retention credit = 25% Runoff Volume Reduction credit

The overall total credit awarded will be capped at 40%. Because the runoff volume calculations account for the runoff generated from the entire property, the credit awarded does not need to be weighted according to the amount of impervious area that is captured and treated by the BMP/LID facilities.

Credit applicants can apply their choice of hydrologic method or model to either an appropriate rainfall event or a water budget analysis, whichever demonstrates the highest level of retention volume control. In cases where a unit-area retention volume allowance has been established, a 100% level of control can be claimed if this target is achieved.

Self-certification will be provided by way of a report certified by a Professional Engineer that includes supporting calculations for the runoff volumes determined under the appropriate development scenarios.

B.3 Water Quality Treatment

Water quality treatment involves managing sediment and other forms of pollution to protect public health, habitats, and aquatic/terrestrial resources. To evaluate the relative level of quality treatment provided by on-site stormwater management facilities, the City will use the levels of protection that have been designated by the Ontario Ministry of Environment and Climate Change (MOECC). These designations reflect the varying long-term removal of total suspended solids (Basic, Normal, and Enhanced) and are typically applied to stormwater ponds and BMPs.

Eligible water quality treatment facilities typically include tanks, reservoirs, ponds, wetlands, or lagoons. Additionally, the City will also award credits for oil/grit separators (OGS), or other BMP/LID facilities that provide basic pre-treatment. Pre-treatment devices include any structural measure that is specifically designed for temperature control, nutrient removal, or sediment settling upstream of any conveyance or detention storage asset as described above in Section B.1.

B.3.1 Performance Metrics

The Water Quality Treatment credit is intended to reward the control of runoff quality discharged from the site. Rather than award credits based on calculations or modeling results of pollutant loads or concentrations discharged from the site, the City will base the credit on the type of treatment provided, prorated by the total impervious area that is captured and treated by the facility or facilities. The assignment of eligible Water Quality Treatment credits is shown in **Table B2**.

Table B2. Eligible Treatment Credits by Facility Type

Facility Type	Credit
pre-treatment	5%
OGS	5%
Basic	5%
Normal	10%
Enhanced	15%

B.3.2 Credit Award Criteria

The Water Quality Treatment credit will be awarded based on the credit assigned to each facility type multiplied by the percentage of the overall site impervious area that is captured and treated by each facility, to a maximum of 15%. The overall total credit awarded will be capped at 15%.

Self-certification will be provided by way of a report certified by a Professional Engineer that includes supporting calculations to justify the MOECC protection levels for BMPs.

B.4 Operations and Activities

The final category of stormwater credits is related to the operations and maintenance of on-site stormwater management facilities as well as implementing approved pollution prevention and risk management plans and promoting education programs. The Operations and Activities credit is intended to reward practices and measures that can impact both stormwater runoff quantity and quality. Individual credits are assigned by the subcategories of Operations, Planning, and Education Program. The overall total credit awarded will be capped at 15%.

B.4.1 Performance Metrics and Credit Award Criteria – Operations

The Operations credit rewards paved areas that are regularly swept and cleaned. Regular mechanical sweeping of paved areas can reduce the amount of dirt, debris, sediment and other suspended solids that are discharged to the City's stormwater system as well as increase the longevity of paving materials. The credit is applied on a sliding scale with 1% awarded for each 200 m² (2,200 ft²) of paved area swept, to a maximum of 5%. Note the size increment of 200 m² is roughly equivalent to 15 parking spaces. The minimum sweeping frequency is twice per year.

Self-certification will be provided by way of a letter certified by the account holder that includes supporting documentation that describes and quantifies the areas to be swept, type of sweeper/cleaner, sweeping frequency, and methods used to dispose of collected materials.

B.4.2 Performance Metrics and Credit Award Criteria – Planning

The Planning credit rewards property owners who are actively implementing an approved plan which addresses various operations and activities. Credits are cumulative based on the type of plan implemented to a maximum of 15%.

The credit is applied in its entirety only if the approved plan is being implemented. Although the credit is not prorated by area, each plan must apply to the primary sources of pollutant loading (for water quality) or impervious area (for water quantity). The assignment of eligible planning credits is shown in **Table B3**.

Table B3. Eligible Planning Credits by Plan Type

Plan Type	Credit
Pollution Prevention	5%
Risk Management	5%
Salt Management	10%
Nutrient Mgmt.	10%
Pesticide Mgmt.	10%
Forest/Agri. Mgmt.	10%
Source Water Mgmt.	10%

Self-certification will be provided by way of a letter certified by the account holder that includes the approved plan and supporting documentation that describes how the plan is being implemented.

B.4.3 Performance Metrics and Credit Award Criteria – Education Program

The Education Program credit rewards property owners who are actively promoting an approved education program to employees, customers, tenants, students, or members of the public. A 5%

credit will be awarded for presenting and sharing information related to stormwater management and general good housekeeping practices that homeowners and citizens can apply.

Self-certification will be provided by way of a letter certified by the account holder that describes the education program, and includes all presentation and printed materials as well as supporting documentation that describes how the program is being promoted.

12. Appendix C. Credit Examples

This section illustrates how City of Guelph staff might evaluate credit applications and apply the credit criteria that were presented in **Appendix B**. The various examples were selected to represent a range of land uses, building types, and SWM/BMP/LID facilities. All information used to determine the credits awarded would be taken from the account holder's stormwater service fee credit application form (and cross-referenced with the appropriate database entries in the billing system).

Table C1 shows the basic information describing the property and base charge, along with the overall credit determined by staff. Individual credits, grouped by category, are described in subsequent sections. The base charge, total credits awarded, and net stormwater charge would be shown on the utility bill. For example, with a stormwater rate of \$4.60 per billing unit per month, the Example 1 property would have annual base charge of \$30,835 (i.e., 558.6 ERU × \$4.60 × 12 months). With 8.1% credits awarded the net annual stormwater charge would be \$28,345, a reduction of \$2,490 per year.

Table C1. Non-Residential Stormwater Credit Example Summary

Property Information				Base Charge Information				Credit Information		
Description	Land Use / Building Type	Total Property Area		Rooftop Area	Paved / Other Area	Total Impervious Area		Billing Units (ERU)	Facility Status	Total Credits Awarded
		(m ²)	(ha)	(m ²)	(m ²)	(m ²)	(%)			
Example 1	Warehouse	272,746	27.275	14,990	90,031	105,021	39%	558.6	Existing	8.1%
Example 2	Industrial	67,971	6.797	9,605	20,930	30,535	45%	162.4	Existing	28.5%
Example 3	Industrial	6,000	0.600	1,000	2,000	3,000	50%	16.0	Proposed	11.5%
Example 4	Retail	20,000	2.000	5,000	5,000	10,000	50%	53.2	Proposed	28.8%
Example 5	Office	120,000	12.000	40,000	50,000	90,000	75%	478.7	Proposed	10.6%
Example 6	Apartments	15,000	1.500	5,000	6,250	11,250	75%	59.8	Proposed	20.0%
Example 7	Warehouse	70,000	7.000	30,000	35,000	65,000	93%	345.7	Proposed	14.2%
Example 8	Park	60,000	6.000	2,000	3,000	5,000	8%	26.6	Existing	19.5%
Example 9	Institutional	20,000	2.000	2,000	2,000	4,000	20%	21.3	Existing	20.5%
Example 10	Townhouses	4,000	0.400	2,050	1,755	3,805	95%	20.2	Proposed	12.2%

The first two example properties are shown on **Figure C1**, which illustrates the location of the stormwater pond (cross-hatched in blue), the rooftop areas that are captured and treated by each pond (solid gray), and the remaining impervious areas that are not discharged into each pond (cross-hatched in gray).

For each example, the land use zoning or building type is given along with the total area of the property. The next grouping of data includes the impervious area, which is comprised of the rooftop and paved or other hard surface footprint area. Distinguishing the type of impervious area can assist in identifying servicing and pre-treatment needs. For example, rooftop runoff can often be directed to any LID facility by gravity alone (i.e., without pumping) and may be discharged to an infiltration type facility without pre-treatment. The total impervious footprint area is given and also expressed as a percentage of the total property area. The total number of billing units that are used to calculate the service fee on the utility bill are shown next, determined by dividing the impervious area by the average ERU size (188 m²) and rounding to the first decimal place.

The final grouping of data in Table C1 summarizes the status of credit-eligible activities/facilities and total credits awarded. The facility status is used to determine when the credit is issued. For example, if there is an existing development and the facility has been installed and is operating properly, then the credit will be applied on the next bill. If the status is proposed, this indicates the facility is not currently operating and the credit will be applied at a later date (or included on the first bill if it is a new development or a separate stormwater utility account has not yet been created). The total credits awarded is the sum of the individual credits described in detail below, capped at a maximum of 50%.

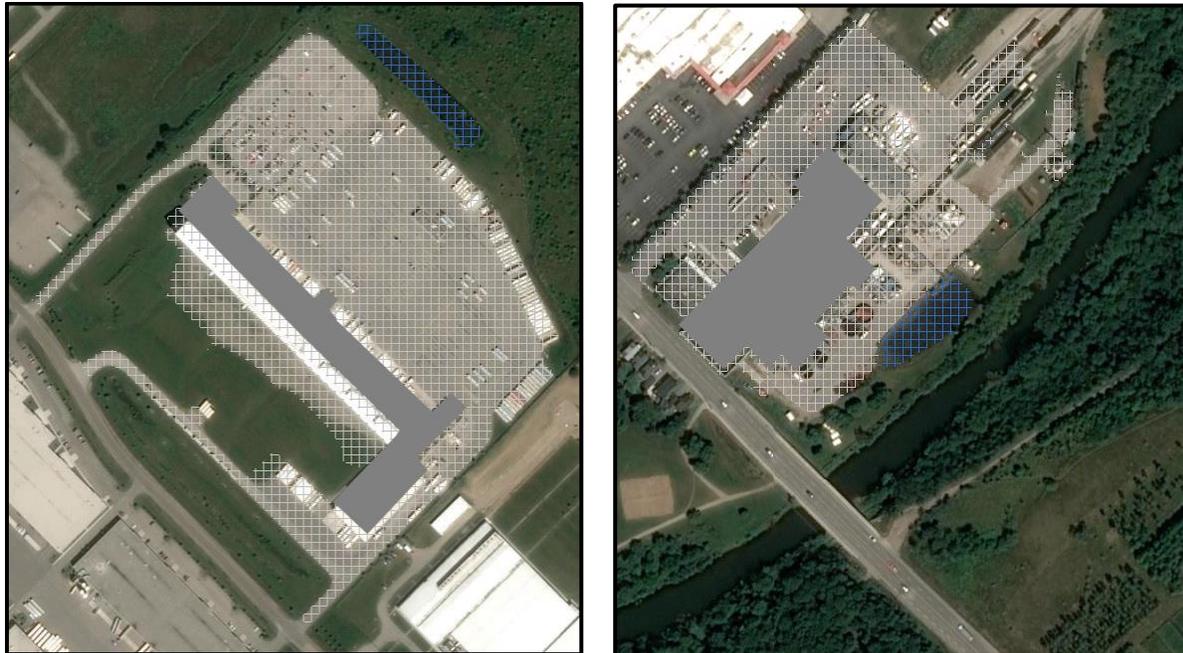


Figure C1. Credit Example Properties, Example 1 (left) and Example 2 (right)

C.1 Peak Flow Reduction Credits

Peak flow reduction credits are intended to reward facilities that control the peak discharge rate in comparison to natural hydrologic conditions. **Table C2** shows the related information to be used by City staff in awarding these credits.

Table C2. Peak Flow Reduction Credits

Peak Flow Reduction Credit							
Property	Facility Type(s)	100-Year Peak Flow Rate (L/s)				Maximum Attenuation Credit	Credit Awarded
		Natural Conditions	Pre-Credit Conditions	Credit Conditions	Level of Control		
Example 1	Drypond	1,050	3,945	2,927	35%	15%	5.3%
Example 2	Wet pond	305	1,147	605	64%	15%	9.7%
Example 3	Underground tank	29	111	48	77%	15%	11.5%
Example 4	Infiltration gallery	100	370	100	100%	15%	15.0%
Example 5	Rooftop storage	900	3,300	1,600	71%	15%	10.6%
Example 6	Permeable pavement, rooftop storage	113	413	113	100%	15%	15.0%
Example 8	Bioretention cell, permeable pavement	50	200	170	20%	15%	3.0%
Example 9	Vegetated swales, green roof	40	150	110	36%	15%	5.5%
Example 10	Private storm sewer, infiltration gallery	23	135	112	21%	15%	3.1%

The facility types indicate the conveyance or detention storage components that are responsible for water quantity control. The next grouping of data tabulates the estimated peak flow rate that is discharged from the property in response to the 100-year design storm event. Natural conditions reflect the undisturbed site hydrology prior to any development. Pre-credit conditions reflect the site hydrology without the SWM/BMP/LID facility in place. Credit conditions reflect the site hydrology with the SWM/BMP/LID facility in place. The level of control indicates how well the facilities reduce peak flows in comparison to natural conditions. For example, facilities that result in a peak flow equal to (or less than) natural conditions provide 100% control, whereas facilities that result in a peak flow equal to (or greater than) pre-credit conditions provide 0% control. The actual level of control is linearly interpolated between these two thresholds.

The maximum attenuation credit is the maximum credit that would be awarded for 100% control (i.e., if the peak flow rate were attenuated all the way down to the natural condition outlet rate). The actual credit awarded is the level of control times the maximum credit.

C.2 Runoff Volume Reduction Credits

Runoff volume reduction credits are intended to reward facilities that control the amount of runoff retained on site (retention / reuse). **Table C3** shows the related information in awarding these credits.

Table C3. Runoff Volume Reduction Credits

Runoff Volume Reduction Credit				
Property	Retention Facility Type(s)	Retention Volume (mm)	Maximum Retention Credit	Credit Awarded
Example 4	Infiltration gallery	10.0	40%	10.0%
Example 6	Permeable pavement	5.0	40%	5.0%
Example 8	Bioretention cell, permeable pavement	12.5	40%	12.5%
Example 9	Vegetated swales, green roof	5.0	40%	5.0%
Example 10	Infiltration gallery	4.1	40%	4.1%

The retention volume indicates the available retention volume within the facility (e.g., cistern storage capacity, drainable porosity within soil/drainage layers). The volume is expressed as a depth (i.e., total retention volume provided divided by the impervious area that is captured and treated by the facility). The credit awarded is based on the retention volume control, namely, 1% per mm of retention, up to a maximum 40% credit.

The first four example properties in Table C3 determined the retention volume based on the amount of runoff that could be retained on site for a given rainfall event. The final entry (Example 10) was based on the results of a detailed water budget analysis, where the average annual retention volume was expressed on a per event basis.

C.3 Water Quality Treatment Credits

Water quality treatment credits are intended to reward facilities that treat stormwater pollutants, based on the various MOECC levels of protection. **Table C4** shows the related information to be used by City staff in awarding these credits.

Table C4. Water Quality Treatment Credits

Water Quality Treatment Credit						
Property	Facility Type(s)	Impervious Capture Area		Level of Treatment	Eligible Treatment Credit	Credit Awarded
		(m ²)	(%)			
Example 1	Oil/Grit separator	59,600	56.8%	OGS	5%	2.8%
Example 2	Quality control BMP	7,680	25.2%	Enhanced	15%	3.8%
Example 4	Tree planters	7,500	75.0%	pre-treatment	5%	3.8%
Example 7	Oil/Grit separator	55,200	84.9%	OGS	5%	4.2%
Example 8	Quality control LID	2,000	40.0%	Normal	10%	4.0%
Example 9	Quality control LID	4,000	100.0%	Normal	10%	10.0%
Example 10	Oil/Grit separator	3,805	100.0%	OGS	5%	5.0%

The facility types indicate the water quality treatment components that are responsible for water quality control, which may be shared by facilities that provide quantity control. The impervious capture area reflects the sum of all impervious surfaces that are captured and treated by the water quality SWM/BMP/LID facility, expressed as a footprint area and as the proportion of all impervious area on the property. The level of treatment indicates the MOECC level of protection for quality control BMPs or the equivalent long-term pollutant removal for quality control LIDs. Pre-treatment devices and OGS units are assigned the equivalent of a Basic level of treatment. The eligible treatment credit is based on the assigned level of treatment that was shown in Table B2. The credit awarded is the impervious capture area (as a ratio of the total site impervious area) times the eligible treatment credit.

C.4 Operations and Activities Credits

Operations and Activities credits are intended to reward non-structural measures including education programs and pollution prevention / risk management practices. **Table C5** shows the related information to be used by City staff in awarding these credits.

Table C5. Operations and Activities Credits

Property	Operations and Activities Credits													Maximum Operations Credit	Total Credit Awarded
	Operations				Planning					Education Program					
	Activity Type	Area (m ²)	Eligible Credit	Credit Awarded	Approved Plan 1	Eligible Credit	Approved Plan 2	Eligible Credit	Credit Awarded	Approved Program	Eligible Credit	Credit Awarded			
Example 2	Sweeping	1,510	5%	5.0%	Risk Management	5%	Salt Management	10%	15.0%	Yes	5%	5.0%	15%	15.0%	
Example 7	n/a		0%	0.0%	Pollution Prevention	5%	n/a	0%	5.0%	Yes	5%	5.0%	15%	10.0%	

The first grouping of data tabulates the operations credits that vary by activity type. For pavement sweeping, the impervious area that is regularly swept is shown. The eligible credit is the maximum allotted to operational activities and the credit awarded gives the subtotal, based on 1% per 200 m² of swept pavement up to a maximum of 5% credit.

The next grouping of data tabulates the planning credits that vary by plan type. These are not prorated by area, but rather the eligible credit is awarded in full if the plan has been approved and it applies to the primary sources of pollutant loading / impervious area. The eligible planning credits were shown in Table B3. The credit awarded column gives the subtotal awarded for planning credits.

The education program credits are tabulated next. Like the planning credits, the maximum eligible credit is given if an approved education program is in place. The credit awarded column gives the subtotal awarded for education credits. The final column tabulates the cumulative total of all operations, planning, and education program credits, up to a maximum 15% credit.