City of Windsor

STORMWATER FEE CREDIT PROGRAM MANUAL



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THE CITY OF WINDSOR
ONTARIO, CANADA

STORMWATER FEE CREDIT PROGRAM MANUAL

Table of Contents

Appendices

Appendix A – Stormwater Control Credit Application Form

Appendix B – Direct Discharge Credit Application Form

Appendix C – Engineering Certification Template

Appendix D – Maintenance Commitment Template

Appendix E – Maintenance Verification Form

Appendix F – Credit Calculation Examples

FREQUENTLY ASKED QUESTIONS

Is my property eligible for credit?	• Eligible properties include multi-family residential (three or more residential units, including condominiums) and non-residential properties.
What do I need to do for my property to receive credit?	• Structural Control Credit. Credit is granted for the installation, operation, and maintenance of physical Stormwater Management Structures that control and/or treat runoff from impervious (hard) area on your property. The structures must control and/or treat runoff beyond that required by regulatory requirements. • Direct Discharge Credit. Credit is granted for the installation, operation, and maintenance of Stormwater Conveyance Infrastructure that captures runoff from impervious area on your property and discharges it directly to Detroit River or Lake St. Clair. The stormwater may not, at any point, enter the City's municipal stormwater management system.
How much credit can I get?	• The maximum credit is 50% of your stormwater fee. • The amount of credit is based on how well the practices on your property (defined in Section 1) meet the performance criteria in Table 1 or Table 2 of this manual.
Will I automatically get credit if I meet the criteria?	• No, a property owner must apply for credit and the City must approve the credit.
What is a Shared System Credit Application?	• Shared system credit may be available for separate properties that share one stormwater management system. • Properties with an approved stormwater management report and formal agreement between all properties sharing the stormwater system may be eligible
How do I apply?	• An application form is in the appendix and available online. • A Professional Engineer (P. Eng.) must verify that all practices meet performance criteria and are functioning as designed. • The City reserves the right to inspect your practices as a condition of receiving credit.
What are the long-term responsibilities?	• You will need to commit to ongoing maintenance of the Stormwater Management Structures, Stormwater Conveyance Infrastructure, and/or property grading to receive credit. • This commitment will attest to the level and frequency of maintenance and reporting requirements to the City.

When does the credit go into effect?	• Credit goes into effect once the application is approved and is applied to the next billing cycle. • An exception is made for conditional pre-approvals. See the Bylaw for details.
Who do I contact for questions?	• Contact the Right-of-Way Department at (519) 255-6257 or rowprograms@citywindsor.ca.

STORMWATER FEE CREDIT PROGRAM MANUAL

1. INTRODUCTION

The City of Windsor (the City) has implemented a stormwater fee to provide a stable, adequate, and equitable source of revenue to rehabilitate and improve the City's aging stormwater management infrastructure. **This manual provides guidance for how eligible property owners can reduce their stormwater fee through participation in the City's Stormwater Fee Credit Program (hereinafter "the Credit Program").**

Stormwater management is key to protecting public safety and health by reducing flood risk, controlling erosion, and maintaining water quality. The City's stormwater program includes planning, designing, constructing, operating, and maintaining a wide range of stormwater management structures. The program also includes system mapping, regulatory compliance, spill and dumping response, street sweeping, and public education and outreach.

The Credit Program recognizes that certain private on-site stormwater management investments and practices can enhance public safety and reduce the cost of the City's stormwater program over the long-term. The amount of credit reflects the priorities of the City's stormwater management program.

Windsor's Stormwater Infrastructure

- Over 1,025 kilometres of pipe
- Over 15,300 manholes
- Over 22,615 catch basins
- Over 30 stormwater management ponds
- Over 30 pumping stations
- Approximately 124 kilometres of municipal drains
- Approximately 254 kilometres of roadside ditches

The City's Credit Program was developed with the assistance of a Stormwater Advisory Group and is based on the following guiding principles:

- There must be a rational relationship between the credit amount and the benefit to the publicly funded stormwater management program.
- Credit should be targeted to meet the most pressing needs of the City.
- Stormwater management benefits must be verifiable.
- The program should not place an unreasonable administrative burden on City staff.
- The amount of credit should not diminish the purpose of the charge, which is to adequately fund the public stormwater management program/system.

Participation in the Credit Program is by application only. Credit will not be granted without an application and approval by the City.

Types of Credit

There are two types of credit available to City of Windsor property owners through the Credit Program. A property may be eligible for one or a combination of the credit types below but **in no case shall the total credit amount for a property exceed 50% of the property's stormwater fee.**

Structural Control Credit

Credit is granted for the installation, operation, and maintenance of physical Stormwater Management Structures (Section 2) that controls and/or treat runoff from a property. **The structures must control and/or treat runoff beyond that required by regulatory requirements.**

Direct Discharge Credit

Credit is granted for the installation, operation, and maintenance of Stormwater Conveyance Infrastructure (Section 3) that captures runoff from your property and discharges it directly to Detroit River or Lake St. Clair. The stormwater may not, at any point, enter the City's municipal stormwater management system.

The term "practice" is used to reference creditable Stormwater Management Structures and Stormwater Conveyance Infrastructure.

The City reserves the right to modify the Credit Program or to eliminate the Credit Program altogether. The City will honor credit, subject to the Credit Program at the time of approval, to a property owner for a minimum of twenty (20) years provided that the practice continues to be operated and maintained as designed.

Single-family residential properties, which are charged a tiered flat rate fee based on impervious area, are not eligible for either a Structural Control Credit or Direct Discharge Credit, under this program.

Eligibility for a shared Structural Control Credit or a shared Direct Discharge Credit are subject to review and approval by the City Engineer.

2. STRUCTURAL CONTROL CREDIT

Eligible Properties

All multi-family residential (three or more residential units, including condominiums) and non-residential properties (for example, parking lots, mixed-use, institutional, industrial, and commercial properties) are eligible to participate in the Structural Control Credit Program if they meet the Technical Criteria below, except for any portion of a property that is exempt from the stormwater fee.

Technical Criteria

A **Stormwater Management Structure** (often referred to as a structural stormwater best management practice "BMP") is defined as a permanent physical device or practice that is installed to control stormwater runoff. Controls include the capture, management, and/or treatment of stormwater to reduce flooding, prevent erosion, and/or improve water quality.

The following Technical Criteria must be met to receive credit:

1. The Stormwater Management Structure must exceed minimum regulatory requirements in place at the time of original installation; and,

2. The Stormwater Management Structure must be designed in accordance with a City-recognized standard such as the Ministry of Environment, Conservation, and Parks (MECP) Stormwater Management Planning and Design Manual and Windsor/Essex Region Stormwater Manual; and,

3 The Stormwater Management Structure must be fully maintained and operated by the property owner or as applicable at least one property owner following the provisions of the Credit Sharing Application – Property Owner Agreement. Structures that have been assumed by the City for maintenance are not eligible for credit.

The following are common Stormwater Management Structures that may be eligible for the Structural Control Credit. This is not an exhaustive list of the types of Stormwater Management Structures that will be accepted.

Common Stormwater Structures

Bioretention Facility

Constructed Wetland

Green Roof

Extended Detention Dry Pond

Common Stormwater Structures

Wet Pond

Permeable Pavers

Urban Filter Strip

Tree Box Filter

Oil/Grit Separator

Cistern/Greywater

Underground Stormwater Detention System

Additional manufacturer information and/or case studies may be requested in support of new or emerging technologies and the City may require a trial or monitoring program to prove a technology's effectiveness at storing, infiltrating, or treating runoff. The City of Windsor reserves the right to accept or reject any Stormwater Management Structure type at its sole discretion.

Performance Criteria and Credit Amount

The credit amount is based on how well Stormwater Management Structures achieve the performance criteria in Table 1. The level of control required to achieve credit depends on whether the project controls stormwater runoff from existing developed impervious (hard) area or controls stormwater runoff from new or expanded impervious area associated with a new development/site expansion:

- **Voluntary Control of Existing Impervious Surface:** No new impervious area is proposed. The property owner(s) control stormwater runoff above requirements at the time of initial development (structures that have already been installed) or above (allowable) existing conditions (new structures).
- **New Development/Site Expansion:** New impervious area is created as part of new development or a site expansion. Control is required by regulation, but the property owner(s) voluntarily enhanced control above Regional and City's minimum standards.

The maximum available credit summed across all categories cannot exceed 50%.

A property's stormwater fee is calculated based on the total impervious (hard) surface area within its boundaries. In contrast, stormwater Structural Control Credits are awarded based on improvements made at the outlet(s) draining to municipal infrastructure. These improvements

consider the overall hydrology including both pervious and impervious surfaces as well as hydraulic conveyance.

Table 1 – Structural Control Credit Schedule

Category	Voluntary Control of Existing Impervious Surface	New Development/Site Expansion	Total Credit (50% Maximum)	
Peak Flow Reduction	Allowable peak flow for the site reduced by 10% to 40% during the 100 year event.	Allowable peak flow for the site reduced by 10% to 40% during the 100 year and Climate Change, Urban Stress Test (UST) 150 mm events.	Up to 40%	**Total of no more than 50%**
Runoff Volume Reduction (Water Balance Control)	Percentage reduction of rainfall volume from the first 15 mm to 30 mm of a single event.	Percentage reduction of rainfall volume for the first 30 mm to 50 mm of a single event.	Up to 40%	
Water Quality Treatment	Provide water quality controls to an enhanced level of treatment (80% Total Suspended Solids [TSS] removal).		Up to 10%	

*Note: **Peak Flow Reduction Category:** Voluntary Control of Existing Impervious Surfaces to consult with the City at the pre-consultation stage to confirm the storm event target to be used for the allowable peak flow rate.*

Detailed Evaluation Criteria

The following calculations are used to determine the credit amount depending on whether the site currently has Stormwater Management Structures in place to control existing impervious area or control impervious area as part of a new development/site expansion. Examples are shown in the appendix.

Peak Flow Reduction – Voluntary Control of Existing Impervious Surface

The amount of credit, up to 40%, is based on reducing the allowable peak flow for the entire site by up to 40% during the 100-year event. Credit eligibility is based on the performance of Stormwater Management Structures that reduce peak release rates from 90% of the allowable flow (a 10% credit) down to 60% of the allowable flow (full 40% credit).

- Allowable = Flow based on property's peak allowable discharge rate in L/s
- Proposed voluntary = flow based Stormwater Management Structures controlling above the requirements at the time of development in L/s

$$\left(1 - \frac{proposed\ voluntary}{allowable}\right) \times 100\% = \%\ credit\ (\max 40, \min 10)$$

Determining an existing site's peak allowable flow rate is based on the best available information including design information for the receiving system (sewer, Municipal Drain, etc.), historic design practices, and City-approved stormwater management reports for the private infrastructure. Typically, the allowable rate shall be based on a 5 year storm event for separated storm sewer systems and 2 year storm event for open ditches, municipal drains and combined sewers. Consultation with City administration is recommended to help confirm the approach to estimate this credit.

No credit will be given for a peak flow reduction, less than 90% of the allowable flow.

Peak Flow Reduction – New Development/Site Expansion

The amount of credit, up to 40%, is based on reducing the allowable peak flow for the entire site by between 10% and 40% during the 100 year and Climate Change 150 mm (Urban Stress Test [UST]) events. The proposed voluntary value is calculated as the average peak flow rate between the two events. The site is defined as the geographic area required to meet the City's stormwater management requirements at the time of development/expansion. Credit eligibility is based on the performance of Stormwater Management Structure that reduce peak release rates from 90% of the allowable flow (a 10% credit) down to 60% of the allowable flow (full 40% credit).

- Allowable = Flow based on property's peak allowable discharge rate in L/s
- Proposed voluntary = flow based Stormwater Management Structures controlling above the requirements at the time of development in L/s

$$\left(1 - \frac{proposed\ voluntary}{allowable}\right) \times 100\% = \%\ credit\ (\max 40, \min 10)$$

No credit will be given for a peak flow reduction, less than 90% of the allowable flow.

Runoff Volume Reduction (Water Balance Control) – Existing Impervious Surface

The amount of credit, up to 40%, is based on how much volume of stormwater runoff can be retained or re-used on the site at the onset of a storm event. Credit is scaled depending on the reduction amount. No credit is provided for less than a 15 mm reduction of volume falling over the area from any single storm event. Full credit is provided for a 30 mm or greater reduction of volume over the area. The property owner(s) may take credit for existing stormwater detention or volumetric re-use controls that go beyond minimum regulatory requirements. Calculations should reflect where volumetric controls are proposed. Stormwater volumes can be converted between m^3 and mm using the formula below.

$$volume\ (m^3) = volume\ (mm) * catchment\ area\ (m^2) / 1000$$

- Existing = Existing runoff reduced (mm) from site beyond the minimum requirements based on the proposed rainfall target.
    - For example, if existing initial volume runoff reduced from the site is 15 mm, however 5 mm of water balance control was the regulatory requirement at the time of installation, then use 10 mm for the calculation.
- Proposed Voluntary = Proposed runoff reduced (mm) by new detention or re-use systems, or an enhancement to the existing system.
- Min volume reduction = 15 mm
- Max volume reduction = 30 mm

$$\frac{(existing\ mm + proposed\ voluntary\ mm) - \text{min volume reduction mm}}{\text{max volume reduction}\ mm - \text{min volume reduction}\ mm} * 40\% = \%\ credit$$

Note: The applicant must also provide accompanying calculations of existing and proposed runoff volumes based on the rainfall target and the expected reduction off the site. The above equation is to be used as a general summary of runoff reduction for credit review.

The credit is applied to the drainage area controlled by Stormwater Management Structures. In general, volume from a wet pond permanent pool or similar will not be credited for runoff volume reduction. Continuous modelling or simulations may be required to demonstrate long-term average annual retention water balance control targets will be achieved.

Runoff Volume Reduction (Water Balance Control) – New Development/Site Expansion

The amount of credit, up to 40%, is based on how much volume of stormwater runoff from the entire site can be retained or re-used at the onset of a storm event. The site is defined as the geographic area required to meet the City's stormwater management requirements at the time of development/expansion. Credit is scaled depending on the reduction amount. No credit is provided for less than a 30 mm reduction of volume falling over the area from any single storm event. Full credit is provided for a 50 mm reduction or greater of volume over the area. Calculations apply to all impervious areas on the site. Stormwater volumes can be converted between m^3 and mm using the formula below.

$$volume\ (m^3) = \ volume\ (mm) * catchment\ area\ (m^2)\ /\ 1000$$

- Proposed = Proposed runoff reduced by new stormwater detention or re-use systems from the entire site in mm
- Min volume reduction = 30 mm
- Max volume reduction = 50 mm

$$\frac{(proposed\ mm) - \text{min volume reduction}\ mm}{\text{max volume reduction}\ mm - \text{min volume reduction}\ mm} * 40\% = \%\ credit$$

Note: The applicant must also provide accompanying calculations of existing and proposed runoff volumes based on the rainfall target and the expected reduction off the site. The above equation is to be used as a general summary of runoff reduction for credit review.

The credit is applied to the drainage area controlled by Stormwater Management Structures. In general, volume from a wet pond permanent pool or similar will not be credited for runoff volume reduction. Continuous modelling or simulations may be required to demonstrate long-term average annual retention water balance control targets will be achieved.

Water Quality Treatment

The amount of credit, up to 10%, is based on achieving **enhanced water quality levels (80% removal of TSS)** in accordance with the MECP Stormwater Management Planning and Design Manual. There is no credit for a structure that does not achieve enhanced water quality treatment.

For voluntary control of existing impervious surfaces, the 10% credit is applied to the drainage area controlled by Stormwater Management Structures. This will be based on the site's catchments.

For a new development the entire site must meet the enhanced level of treatment. For a site expansion, the site is defined as the geographic area required to meet the City's stormwater management requirements at the time of development or expansion and at minimum that site area must meet the enhanced level of treatment. As appropriate, the 10% credit is applied proportionally to the site.

3. DIRECT DISCHARGE CREDIT

Eligible Properties

Multi-family residential (three or more residential units, including condominiums) and non-residential properties (for example, parking lots, mixed-use, institutional, industrial, and commercial properties) outletting to Detroit River or Lake St. Clair, including properties using shared Stormwater Management Structures, are eligible to participate in the Direct Discharge Credit Program if they meet the Technical Criteria below, except for any portion of a property that is exempt from the stormwater fee.

Multi-family residential and non-residential properties (including upstream properties) that use a shared outlet to Detroit River or Lake St. Clair, may be eligible for this credit provided they meet the Technical Criteria below and complete a Credit Sharing Application, subject to review and approval by the City Engineer.

Technical Criteria

Credit is granted for the installation, operation, and maintenance of private Stormwater Conveyance Infrastructure that captures stormwater from impervious area on a property and discharges it directly to Detroit River or Lake St. Clair. Stormwater Conveyance Infrastructure may include but is not limited to curbs, gutters, swales, ditches, inlets, depressed areas, soakaway pits, infiltration trenches, retaining walls, manholes, storm sewer pipes, and outfalls.

Applications for **properties not directly adjacent to Detroit River or Lake St. Clair must demonstrate adequate hydraulic conveyance capacity** of the private (shared) infrastructure to confirm that runoff does not enter the City's stormwater system. If this cannot be demonstrated for an entire upstream property, a proportionally reduced Direct Discharge Credit may apply.

The following Technical Criteria must be met to receive credit*:

1. The stormwater runoff from lands subject to the Direct Discharge Credit may not, at any point, enter the City of Windsor municipal stormwater management system; and,

2. Stormwater Conveyance Infrastructure constructed prior to January 1, 2025 may not be required to be designed to a specific standard. However, it must be confirmed to operate and function as originally designed, per engineering drawings and Stormwater Management Report, and may be confirmed through a site inspection by the City; and,

3. Stormwater Conveyance Infrastructure constructed on or after January 1, 2025 shall be designed in accordance with a City-recognized standard. Stormwater Conveyance Infrastructure must be able to capture and convey flows with a minor system level of service based on the 5 year design storm event; and,

4. The Stormwater Conveyance Infrastructure must be fully maintained and operated by the property owner.

*If the Technical Criteria for Direct Discharge Credit are not met the property may still be eligible for a Structural Control Credit if it meets the Technical Criteria for a Structural Control Credit.

Performance Criteria and Credit Amount

For a full credit (50%) the property owner(s) must demonstrate that at least 75% of a property's drainage area including 75% of the site's impervious area will be conveyed directly to Detroit River or Lake St. Clair. This requirement would apply to both applications for properties directly adjacent to Detroit River or Lake St. Clair and properties using a private (shared) direct outlet.

For properties directly adjacent to Detroit River or Lake St. Clair, property owner(s) must demonstrate that flow restrictions and storage requirements are not (or would not be) required in general accordance with the specifications in the Windsor/Essex Region Stormwater Manual.

- For properties with an existing City-approved Stormwater Management Report, the Stormwater Management Report may be used to satisfy this requirement. A site servicing drawing/lot grading plan may be requested if it does not form part of the approved Stormwater Management Report.

- For properties without a City-approved Stormwater Management Report, the property owner must submit a Stormwater Management Report to the City's satisfaction. For specific requirements of the Stormwater Management Report visit: https://www.citywindsor.ca/business/buildersanddevelopers/stormwater-management-requirements.

Direct discharge is eligible for a credit of up to 50%. The Direct Discharge Credit may be combined with the Water Quality Treatment category from Section 2. **The maximum available credit summed across all categories cannot exceed 50%.**

Table 2A – Direct Discharge Credit Schedule

Category	Voluntary Control of Existing Impervious Surface	New Development/Site Expansion	Total Credit (50% Maximum)	
Direct Discharge – Adjacent to Detroit River or Lake St. Clair	Demonstrate, through a City-approved Stormwater Management Report, that no flow restrictions or storage is required in accordance with the Windsor Essex Region Stormwater Manual. For the full 50% credit demonstrate that at least 75% of a property's drainage area including 75% of the site's impervious area will be conveyed directly to Detroit River or Lake St. Clair.		Up to 50%	**Total of no more than 50%**
Direct Discharge – Private (Shared) Direct Outlet	Demonstrate, through a City-approved Stormwater Management Report, that peak flows from all storm events up to the 100 year event will be conveyed through private (shared) infrastructure required in accordance with the Windsor Essex Region Stormwater Manual. For the full 50% credit demonstrate that at least 75% of a property's drainage area including 75% of the site's impervious area will be conveyed directly to Detroit River or Lake St. Clair.		Up to 50%	
Water Quality Treatment	Provide water quality controls to an enhanced level of treatment (80% Total Suspended Solids [TSS] removal).		Up to 10%	

**If a Direct Discharge Credit is given to a portion of land, then that portion of land is not eligible for a Runoff Volume Reduction or Peak Flow Reduction credit.

Properties not eligible for a full 50% Direct Discharge Credit may be eligible for a partial Credit, as outlined in Table 2B. The fraction of the property eligible for credit is determined by the lesser of the following two values:

- (A) The fraction of total site draining directly to Detroit River or Lake St. Clair or
- (B) The fraction of the site's total imperviousness (hard surfaces) that drains directly to the Detroit River or Lake St. Clair.

For clarity, the equations used to calculate values (A) and (B) are provided below. Credit values in Table 2B may be interpreted linearly.

$$Fraction\ (A) = \frac{Total\ Area\ of\ the\ Property\ with\ Direct\ Discharge\ Outlet\ (ha)}{Total\ Property\ Area\ (ha)}$$

$$Fraction\ (B) = \frac{Total\ Impervious\ Area\ of\ the\ Property\ with\ Direct\ Discharge\ Outlet\ (ha)}{Property\ Total\ Impervious\ Area\ \ (ha)}$$

Table 2B – Direct Discharge Credit Scale

Direct Discharge Fraction	Direct Discharge Credit
0.50	**10%**
0.55	**18%**
0.60	**26%**
0.65	**34%**
0.70	**42%**
0.75	**50%**

4. SHARED SYSTEM CREDIT APPLICATION [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 owner's investment in design, construction and maintenance costs or benefit received of eligible BMPs.

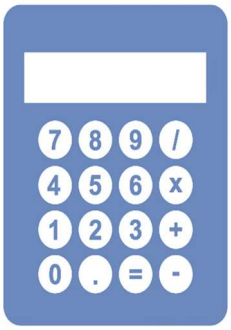
A Credit Sharing Application can be considered to support either a Structural Control Credit, Direct Discharge Credit, or both.

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 requirements in Appendix D (Shared Credit Application Requirements) do 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.

5. TOTAL CREDIT CALCULATOR

The following calculation is used to determine the total credit given to a property. Separate calculations should be made for properties with multiple practices with different credit amounts.



(A)	Sum of Credit Amounts (Maximum of 50%)	%
(B)	Impervious Area Controlled on the Property	ha
(C)	Total Impervious Area on the Property	ha
(D)	Proportion of Impervious Area Eligible for Credit = (B)/(C)	%
(E)	Percent Reduction on Total Fee = (A)*(D)	%

6. FUNCTION VERIFICATION AND MAINTENANCE

A practice must function as designed to receive credit. This requirement is initially satisfied through certification by a Professional Engineer licensed in the Province of Ontario using the Engineering Certification Template.

The Maintenance Verification Form must be submitted to and approved by the City at least once every five years after initial certification for the property to continue to receive credit.

The property owner(s) must agree to maintain a practice so that it continues to function as designed using the Maintenance Commitment Template. As part of the commitment, the property owner(s) must authorize City staff to enter the premises to verify that the practice is functioning as designed. The City may establish practice-specific maintenance requirements, more frequent submittal of the Maintenance Verification Form, and any other requirements deemed appropriate at the discretion of the City.

The City may require an existing Maintenance Commitment to be updated as a condition for continued credit based on changes in maintenance best practices or the result of an inspection by City staff.

If the property owner(s) fails to abide by the commitment terms, the City will revoke the credit if corrective actions are not taken within the time specified by the City.

7. INITIAL APPLICATION AND APPROVAL PROCESS

Application Form

The City will accept a completed application form by mail or online and will accept supporting documentation in either hard-copy or digital (PDF) format. Applications may be submitted at any time. Application forms are located in the Appendix and at https://www.citywindsor.ca/business/buildersanddevelopers/stormwater-management-requirements.

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 no application fee.

Approval Process

Once an application is received by the City, the Right-of-Way Programs Coordinator or designate will conduct an initial screening to ensure completeness. An application is deemed complete when it is verified that all appropriate sections of the application form have been filled out and

the applicant has submitted the relevant supporting documents and reports. The applicant may be contacted to provide missing or additional information or documents.

A complete application will be registered as such, and the applicant notified that a technical review is being undertaken to verify the proposed practices and associated credit calculations. The technical review of an application is expected to be completed within 60 calendar days following determination of completeness, subject to the volume of requests received by the City.

An applicant may be requested to submit additional information to enable review and evaluation of their application. If an applicant fails to provide the necessary information within 60 calendar days of the request to submit, the application will be rejected.

If the review results in a request for additional information or clarification on matters from the applicant, a 30-calendar day period will be added to the review period upon receipt of all information requested.

By submitting the application, the applicant grants the City permission to conduct a site inspection during normal business hours (9:00 a.m. to 5:00 p.m. Monday through Friday) to verify that a practice is in conformance with the documentation provided and is operating in accordance with documented performance criteria. Failure to provide access to the site for inspection will result in the credit application being closed.

Conditional Pre-Approval

Applicants are strongly encouraged to be conditionally pre-approved in advance of the construction of a practice. The credit will not become effective until such time that is has been demonstrated by the applicant, to the satisfaction of the Stormwater Fee Manager, that the practice approved for credit has been installed, meets the objectives of its approved design, and is in service.

Effective Date of Approved Credit

The stormwater fee is billed monthly. Once approved by the City, the credit adjustment will be applied to the next monthly bill, or the following month's bill if the adjustment is approved past the bill print date.

Conditional Pre-Approvals Before January 1, 2025

Credit for a practice that is conditionally pre-approved before January 1, 2025, and where the practice is certified by the City to be in service before January 1, 2026, will be retroactive to the first date of billing. Charges paid by the property owner will be reimbursed by the City.

Stormwater Fees Billed During Application Review

A pending credit application shall not constitute a valid reason for non-payment of the current Stormwater Fee. Any Stormwater Fee bill that is received during the credit application process must be paid in full.

8. CREDIT UPDATE APPLICATION

A credit holder is responsible for notifying the City of any Material Change to a practice for which a credit was approved and is in effect. **Material Change** means actions taken by a property owner, those occurring through lack of action by a property owner, or actions taken by others unrelated to any action of the property owner. Material Change includes, but is not limited to, alteration, improvement, deficiency, or failure.

No later than 90 calendar days after any Material Change has been undertaken or occurs, the holder of a stormwater credit must submit an updated application form (see Appendix and https://www.citywindsor.ca/business/buildersanddevelopers/stormwater-management-requirements). 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.

9. COMPLIANCE INSPECTIONS

The City may, during normal business hours (9:00 a.m. to 5:00 p.m. Monday through Friday), enter and inspect any property with an approved credit for purposes of assessing whether a practice is being maintained as to function, is in a state of good repair, and is operating in accordance with the performance criteria established in the credit approval. If the practice fails a City inspection, or the owner fails to submit documents as required in the maintenance agreement, the City will revoke the credit if corrective actions are not taken within the time specified by the City.

APPENDICES

APPENDIX A – STORMWATER CONTROL CREDIT APPLICATION FORM

APPENDIX B – DIRECT DISCHARGE CREDIT APPLICATION FORM

APPENDIX C– ENGINEERING CERTIFICATION TEMPLATE

APPENDIX D - SHARED CREDIT APPLICATION AND CHECKLIST

APPENDIX E – MAINTENANCE COMMITMENT TEMPLATE

APPENDIX F – MAINTENANCE VERIFICATION FORM

APPENDIX G – CREDIT CALCULATION EXAMPLES

APPENDIX A

STORMWATER CONTROL CREDIT APPLICATION FORM

STORMWATER CONTROL CREDIT APPLICATION FORM

Use this form for an initial credit application or to update information about an existing credit.

Section 1. Applicant Information

Applicant Name: _____ Date: _____

Mailing Address: _____

Email Address: _____

Phone Number: _____

☐ I am the owner of the property.
☐ I am the authorized agent for the property (if agent, provide owner information below).

Owner Name: _____

Mailing Address: _____

Email Address: _____

Phone Number: _____

Section 2. Site Information

Property Address: _____

Property ID: _____

Section 3. Credit Application Type

☐ New Credit – if new credit:
  ☐ Pre-Approval
  ☐ Structure in Service
☐ Updated Credit

Section 4. Property Eligibility

☐ I confirm that the property type is multi-family residential or non-residential.

Section 5. Technical Criteria and Project Description

Structure Type: _____

Structure Maintenance:

☐ I confirm that the City is not responsible for maintaining the structure.

Type of Project:

- ☐ Existing impervious surface – existing Stormwater Management Structure provides control above regulatory minimum at time of installation.
- ☐ Existing impervious surface – proposed new Stormwater Management Structure.
- ☐ New impervious surface – proposed enhancement above current regulatory minimum.

Project Summary:

Impervious Area:

Total On-Site Impervious Area _____ m^2

Impervious Area Controlled by Stormwater Management Structure _____ m^2

Section 6. Credit Proposal

Credit Type	Maximum Possible	Percent Applied For*
Peak Flow Reduction	40%	_____ %
Runoff Volume Reduction	40%	_____ %
Water Quality	10%	_____ %
Total Maximum	50%	_____ %

* Notwithstanding the above, the final credit amount will be determined by the City at its full discretion based on the Credit Program Technical Criteria

Section 7. Supporting Documentation

- ☐ Site Plan/Lot Grading Plan
- ☐ Engineering Drawings
- ☐ Details of Stormwater Management Structure(s)
- ☐ Supporting Calculations
- ☐ Operation and Maintenance Plan
- ☐ Engineering Certification (if the structure is in service)
- ☐ Maintenance Commitment

Section 8. Certification and Inspection Agreement

- ☐ I am the legal owner, or I am duly authorized to act on behalf of the legal owner.
- ☐ I have reviewed the information contained in this application and the supporting documentation, and to the best of my knowledge believe that it is true and accurate.
- ☐ If this is an application for pre-approval, I understand that I must submit an Engineering Certification prior to final credit approval.
- ☐ I authorize the City or its representative to enter the site for the sole purpose of visually inspecting the Stormwater Management Structure.
- ☐ I understand that if I fail to implement the terms of the maintenance commitment, or if an inspection by the City indicates that the Stormwater Management Structure is not properly maintained, that the Stormwater Management Structure will no longer be eligible for credit if deficiencies are not corrected within the timeframe provided by City staff.

Section 9. Professional Engineer Stamp

- ☐ The application package must be stamped by a Professional Engineer.

Name/Title: _____

Signature_____ Date _____

Return this form and supporting documentation to:

City of Windsor
Attn: ROW Programs
350 City Hall Square West, Suite 210
Windsor, ON
N9A 6S1

APPENDIX B

DIRECT DISCHARGE CREDIT APPLICATION FORM

DIRECT DISCHARGE CREDIT APPLICATION FORM

Use this form for an initial credit application or to update information about an existing credit.

Section 1. Applicant Information

Applicant Name: _____ Date: _____

Mailing Address: _____

Email Address: _____

Phone Number: _____

☐ I am the owner of the property.
☐ I am the authorized agent for the property (if agent, provide owner information below).

Owner Name: _____

Mailing Address: _____

Email Address: _____

Phone Number: _____

Section 2. Site Information

Property Address: _____

Property ID: _____

Section 3. Credit Application Type

☐ New Credit:
  ☐ Pre-Approval
  ☐ Existing Direct Discharge
☐ Updated Credit

Section 4. Property Eligibility

☐ I confirm that the property type is multi-family residential or non-residential.
☐ Property is Directly Connected to Detroit River or Lake St. Clair:
  ☐ I confirm that the property is directly adjacent to Detroit River or Lake St. Clair.
  ☐ I confirm that the property drains directly to or via a shared system to Detroit River or Lake St. Clair.

Section 5. Technical Criteria and Project Description

Technical Criteria:

- ☐ I confirm that the City is not responsible for maintaining the practice.
- ☐ I confirm that stormwater from the impervious area for which credit is claimed does not, at any point, enter the City of Windsor municipal stormwater management system.
- ☐ If constructed on or after January 1, 2025, I confirm that the Stormwater Conveyance Infrastructure is constructed in accordance with a City-recognized design standard.
- ☐ If constructed prior to January 1, 2025, I confirm that the Stormwater Conveyance Infrastructure is operating and functioning as originally constructed.

Date of Construction: _____

Performance Criteria:

- ☐ Existing City-approved Stormwater Management Report.
- ☐ New Stormwater Management Report.

Project Summary:

_____

Impervious Area:

Total On-Site Impervious Area _____ m^2

Impervious Area Controlled by Practice _____ m^2

Section 6. Credit Proposal

Credit Type	Maximum Possible	Percent Applied For*
Direct Discharge	50%	_____ %
Water Quality	10%	_____ %
Total Maximum	50%	_____ %

* Notwithstanding the above, the final credit amount will be determined by the City at its full discretion based on the Credit Program Technical Criteria

Section 7. Supporting Documentation

- ☐ Stormwater Management Report
- ☐ 5-Year Design Storm Conveyance (if applicable)
- ☐ 100-Year Design Storm Conveyance (for properties not directly adjacent to Detroit River of Lake St. Clair)
- ☐ Construction Standard (if applicable)
- ☐ Detailed Site Drawing (must include, but not limited to the following):
  Impervious surface area
  Topographic contours
  Existing grades
  Drainage areas
  Flow patterns
  Location of private Stormwater Conveyance Infrastructure
- ☐ CCTV video, if required
- ☐ Engineering Certification (if the practice is in service)
- ☐ Maintenance Commitment

Section 8. Certification and Inspection Agreement

- ☐ I am the legal owner, or I am duly authorized to act on behalf of the legal owner.
- ☐ I have reviewed the information contained in this application and the supporting documentation, and to the best of my knowledge believe that it is true and accurate.
- ☐ If this is an application for pre-approval, I understand that I must submit an Engineering Certification prior to final credit approval.
- ☐ I authorize the City or its representative to enter the site for the sole purpose of visually inspecting the practice.
- ☐ I understand that if I fail to implement the terms of the maintenance commitment, or if an inspection by the City indicates that the structure is not properly maintained, that the practice will no longer be eligible for credit if deficiencies are not corrected within the timeframe provided by City staff.

Section 9. Professional Engineer Stamp

- ☐ The application package must be stamped by a Professional Engineer.

Name/Title: _____

Signature_____ Date _____

Return this form and supporting documentation to:
City of Windsor
Attn: ROW Programs
350 City Hall Square West, Suite 210
Windsor, ON
N9A 6S1

APPENDIX C

ENGINEERING CERTIFICATION TEMPLATE

ENGINEERING CERTIFICATION TEMPLATE

Use this template to certify a new practice or changes to an existing practice. Completion of this certification is required prior to final approval of credit.

Date:

To: City of Windsor
350 City Hall Square West, Suite 210
Windsor, ON
N9A 6S1

Attention: ROW Programs

Subject: Stormwater Practice Certification
[Credit Application Number]
[Address]
[Property ID]
[Structure Type]

This letter confirms that I/we have inspected [stormwater practice] on the above noted property and do hereby certify that all systems have been designed and constructed in accordance with [drawing number _____, dated _____].

I/we further certify that all structure components are completed and operational in accordance with sound engineering practices and principles and are based on guidance from [applicable design and/or standards manual].

Further, I/we hereby confirm that the [practice type] has been implemented into service and is operational as of [date].

Should you have any questions or concerns regarding this letter, please do not hesitate to contact me/this office at [phone number and email].

Sincerely,
[Company Name]

Signature

Printed Name Professional Engineer Stamp

APPENDIX D

SHARED SYSTEM CREDIT - APPLICATION REQUIREMENTS

SHARED SYSTEM CREDIT - APPLICATION REQUIREMENTS

A Credit Application for a shared stormwater system can be considered to support either a Structural Control Credit or a Direct Discharge Credit. Each individual property must submit their own application to be eligible for a shared system credit.

The following items are required for a shared stormwater system credit application. Please note that all components of the Property Owner Agreement are required for approval of a shared system credit. If all parties have not signed an agreement, the application will be rejected and no credits will be issued.

Requirements

☐ Appendix A or B, and C.
☐ Appendix E, and F, if required (based on the servicing agreement).
☐ The subject property is in good standing with the City as per the Stormwater By-law.
☐ A copy of the executed agreement for shared services between all property owners.
☐ If available, a copy of any severance and/or easement documents.

APPENDIX E
MAINTENANCE COMMITMENT TEMPLATE

MAINTENANCE COMMITMENT TEMPLATE

Use this template to establish general maintenance responsibilities and any additional practice-specific maintenance requirements.

Property Owner:

Property Address:

Property ID:

Mailing Address:

Email Address:

Phone Number:

The property owner commits to the following in consideration of being granted a credit by the City against the stormwater fee charged to the above referenced property:

- The practice will not be altered from the site plan, engineering drawings, or Stormwater Management Structure details referenced in the Stormwater Structure Credit Application Form approved by the City unless the property owner has been given prior written approval by the City.
- The practice will be maintained in good working order in accordance with the operations and maintenance plan, if applicable, referenced in the Stormwater Structure Credit Application Form approved by the City.
- If applicable, the following additional maintenance requirements (reference manual, manufacturer's recommendations, additional City instructions, etc.) will apply to the practice:
- The Maintenance Verification Form in the most recent version of the Stormwater Fee Credit Program Manual must be submitted to the City at least once every five years after initial credit approval.
- If applicable, the following additional maintenance verification requirements (documentation, reporting frequency, sampling, etc.) will apply to the practice:

- The City may, during normal business hours (9:00 a.m. to 5:00 p.m. Monday through Friday), enter the property for the sole purpose of assessing whether the practice is being maintained in good working order and that the practice has not been altered from the approved site plan, engineering drawings, or stormwater structure details.

- The City may require a new or updated maintenance commitment as a condition for continued credit based on alterations to the practice, changes in maintenance best practices, or the result of an inspection by the City.

- If the practice fails a City inspection, the owner fails to provide access to the practice for inspection, or the owner fails to submit documents as required in this commitment, the City will revoke the credit if corrective actions are not taken within the time specified by the City.

Name/Title:

Signature_____ Date _____

Return this form to:

City of Windsor
Attn: ROW Programs
350 City Hall Square West, Suite 210
Windsor, ON
N9A 6S1

APPENDIX F

MAINTENANCE VERIFICATION FORM

MAINTENANCE VERIFICATION FORM

This form may be used to verify that a stormwater management practice has been properly maintained and is operating in accordance with original design specifications. Verification is required at least once every five years after initial certification or more frequently at the discretion of the City. Alternative forms specific to the practice may be utilized provided that the form is stamped by a professional engineer.

Property Address:

Property ID:

Structure Type :

General Condition:	Yes	No	N/A
Is the primary outfall pipe/ ditch clear and functioning?	☐	☐	☐
Are the inflow pipes/ ditches clear and functioning?	☐	☐	☐
Is the water quality pool at the correct height (if present)?	☐	☐	☐
Are structure components such as control weirs, pipes, etc. working properly?	☐	☐	☐
Are emergency overflow devices clear and functional (if present)?	☐	☐	☐
Is the structure clear of sediment?	☐	☐	☐
Is the structure clear of trash?	☐	☐	☐
Are embankments free of erosion, woody vegetation (unless called for in the design), animal burrows, or signs of deterioration?	☐	☐	☐
Is vegetation being managed in a manner appropriate to the facility?	☐	☐	☐
If the structure is a bioretention facility, is the water quality control filter media and/or water quantity soakaway pit in good working condition and clear of debris?	☐	☐	☐
Specific requirements as specified by City:	☐	☐	☐
Specific requirements as specified by manufacturer:	☐	☐	☐

Certification

This certification must be made by a Professional Engineer licensed in the Province of Ontario or other licensed professional recognized by the City, at its sole discretion, to make this certification.

☐ Based on an inspection of the above structure conducted on _____ ,
I certify that the practice is currently operational and functioning as designed.

Attach documentation of the practice inspection, including photographs.

Name: _____

Qualification _____

Address of Inspector: _____

Email: _____

Phone: _____

Signature_____ Date _____

Professional Stamp or
Certification Number

Return this form and supporting documentation to:

City of Windsor
Attn: ROW Programs
350 City Hall Square West, Suite 210
Windsor, ON
N9A 6S1

APPENDIX G

CREDIT CALCULATION EXAMPLES

CREDIT CALCULATION EXAMPLES

Example 1 – Installation of Bioretention Facility to Control Existing Impervious Surface

An existing commercial property has a total site area of 10,000 m^2 with 80% impervious coverage (8,000 m^2). The existing site has two outlets draining to a Municipal Drain. The property owner proposes a new bioretention facility that will treat runoff from a 5,000 m^2 sub-catchment with an 85% impervious coverage (4,250 m^2 of impervious area).

Through pre-consultation with the City, an existing approved drainage study and design was found for the receiving Municipal Drain system. Based on this information, the allowable design storm event is the 1:2 year return period and a Rational Method C value of 0.50 was assigned to the property. This results in the allowable peak from the bioretention facility's sub-catchment of 50 L/s. The proposed voluntary peak flow will be 35 L/s.

The bioretention facility achieves a runoff volume (water balance control) reduction of 20.0 mm but only achieves a TSS reduction of 70% (below enhanced). Any volume runoff reduction is contingent of infiltration testing of the underlying soils and type of plant species.

The following shows the credit for each category, the total credit, and the percent reduction on the total stormwater fee for the property.

Peak Flow Reduction – Control of Existing Impervious Surface (Up to 40% Credit)

Existing Allowable Flow (L/s)	Proposed Voluntary (L/s)
50	35

$$\left(1 - \frac{proposed\ voluntary}{allowable}\right) \times 100\% = \%\ credit\ (\max 40, \min 10)$$

$$\left(1 - \frac{35}{50}\right) \times 100\% = 30.0\%\ credit$$

Runoff Volume Reduction (Water Balance Control) – Existing Impervious Surface (Up to 40% Credit)

Bioretention Facility Sub-catchment Area (m^2)	5,000
Bioretention Facility Impervious Area (m^2)	4,250
Existing Water Balance Control Volume (mm)	0.0
Proposed Water Balance Control Volume (mm)	20.0
Min volume reduction (mm)	15.0
Max volume reduction (mm)	30.0

$$\frac{(existing\ mm + proposed\ voluntary\ mm) - \text{min volume reduction mm}}{\text{max volume reduction}\ mm - \text{min volume reduction}\ mm} * 40\% = \%\ credit$$

$$\frac{(0\ + 20\ ) - 15}{30 - 15} * 40\% = 13.3\%\ credit$$

Water Quality Treatment

The property is not eligible for this credit as the proposed bioretention facility does not meet (or exceed) **enhanced water quality treatment criteria** (80% TSS removal). No water quality credit.

Total Credit Calculation

The following calculation is used to determine the total credit given for this property.

(A)	Sum of Credit Amounts (Maximum of 50%)	%
(B)	Impervious Area Controlled on the Property	ha
(C)	Total Impervious Area on the Property	ha
(D)	Proportion of Impervious Area Eligible for Credit = (B)/(C)	%
(E)	Percent Reduction on Total Fee = (A)*(D)	%

Based on the stormwater management design and calculations, this property is eligible for 23.0% total credit.

(A)	Credit Amounts	Max of 50%
(i)	Peak Flow Reduction	30.0%
(ii)	Runoff Volume Reduction (Water Balance Control)	13.3%
(iii)	Water Quality Treatment	0.0%
(A)	Sum of Credit Amounts (Maximum of 50%)	43.3%
(B)	Impervious Area Controlled on the Property	0.425 ha
(C)	Total Impervious Area on the Property	0.800 ha
(D)	Proportion of Impervious Area Eligible for Credit = (B)/(C)	53.1%
(E)	Percent Reduction on Total Fee = (A)*(D)	23.0%

Credit Calculation Examples

Example 2 – Enhancement of Structures Installed for New Development

A vacant property is being developed for commercial purposes. The total impervious area will be 12,000 m^2 with a total property area of 15,000 m^2. The property owner proposes to design and install multiple structures that will treat all runoff from the site. The proposed outlet is a storm sewer connection, within a separated sewer system area.

Through pre-consultation with the City, an existing approved drainage study and design was found for the receiving storm sewer system. Based on this information, the allowable design storm event is the 1:5 year return period and a 70% impervious value was assigned to the property. This results in the allowable peak flow from properties outlet of 230 L/s. The proposed voluntary peak flow under the 100-year storm event and the Urban Stress Test Event is 150 L/s and 170 L/s, respectively. The average peak flow from those two event is 160 L/s.

The structures achieve a runoff volume reduction of 38.0 mm and a TSS reduction of 80% (enhanced water quality level).

The following shows the credit for each category, the total credit, and the percent reduction on the total stormwater fee for the property.

Peak Flow Reduction – New Development/Site Expansion (Up to 40% Credit)

Existing Allowable Flow (L/s)	Proposed Voluntary (L/s)
230	160

$$\left(1 - \frac{proposed\ voluntary}{allowable}\right) \times 100\% = \%\ credit\ (\max 40, \min 10)$$

$$\left(1 - \frac{160}{230}\right) \times 100\% = 30.4\%\ credit$$

Runoff Volume Reduction (Water Balance Control) – New Development/Site Expansion (Up to 40% Credit)

Property's Catchment Area (m^2)	15,000
Bioretention Facility Impervious Area (m^2)	12,000
Proposed Water Balance Control Volume (mm)	38.0
Min volume reduction (mm)	30.0
Max volume reduction (mm)	50.0

$$\frac{(proposed\ voluntary\ mm) - \min \text{ volume reduction mm}}{\max \text{ volume reduction } mm - \min \text{ volume reduction } mm} * 40\% = \%\ credit$$

$$\frac{(38\ ) - 30}{50 - 30} * 40\% = 16.0\%\ credit$$

Credit Calculation Examples

Water Quality Treatment

The property is eligible for this credit as the proposed structures meet **enhanced water quality treatment criteria** (80% TSS removal). 10% water quality credit.

Total Credit Calculation

The following calculation is used to determine the total credit given for this property.

(A)	Sum of Credit Amounts (Maximum of 50%)	%
(B)	Impervious Area Controlled on the Property	ha
(C)	Total Impervious Area on the Property	ha
(D)	Proportion of Impervious Area Eligible for Credit = (B)/(C)	%
(E)	Percent Reduction on Total Fee = (A)*(D)	%

Based on the stormwater management design and calculations, this property is eligible for the maximum allowable total credit of 50.0%. In this example, the sum of all applicable credit types was calculated to be 56.4%; however, the maximum credit that can be applied to any property is capped at 50.0%, which sets the final credit value.

(A)	Credit Amounts	Max of 50%
(i)	Peak Flow Reduction	30.4%
(ii)	Runoff Volume Reduction (Water Balance Control)	16.0%
(iii)	Water Quality Treatment	10.0%
(A)	Sum of Credit Amounts (Maximum of 50%)	56.4%
(B)	Impervious Area Controlled on the Property	1.200 ha
(C)	Total Impervious Area on the Property	1.200 ha
(D)	Proportion of Impervious Area Eligible for Credit = (B)/(C)	100.0%
(E)	Percent Reduction on Total Fee = (A)*(D)	56.4%

Example 3 – Aesthetic Pond with Existing Peak Flow Reduction

An existing commercial property has a total area of 9,000 m^2 with an impervious area of 8,000 m^2. The property's existing outlet is a combined sewer fronting the site. Drainage is provided via a service connection to the sewer and overland flow to the right-of-way. An existing aesthetic pond, not built for regulatory purposes, services 7,000 m^2 of impervious area.

Through pre-consultation with the City, it was determined the allowable design storm event is the 1:2 year return period and a Rational Method C value of 0.50 was assigned to the property. This results in the allowable peak of 95 L/s for the property.

After analysis of the pond, the property owner can demonstrate that 100-year peak flow leaving the entire property would be 75 L/s. As a result, the property owner may take credit for the reduction.

The aesthetic pond does not achieve a runoff volume reduction and does not achieve enhanced water quality for TSS.

The following shows the credit for each category, the total credit, and the percent reduction on the total stormwater fee for the property.

Peak Flow Reduction – Control of Existing Impervious Surface (Up to 40% Credit)

Existing Allowable Flow (L/s)	Proposed Voluntary (L/s)
95	75

$$\left(1 - \frac{proposed\ voluntary}{allowable}\right) \times 100\% = \%\ credit\ (\max 40, \min 10)$$

$$\left(1 - \frac{75}{95}\right) \times 100\% = 21.1\%\ credit$$

Runoff Volume Reduction (Water Balance Control) – Existing Impervious Surface (Up to 40% Credit)

The property is not eligible for this type of credit as no water balance control was demonstrated. No water balance credit.

Water Quality Treatment

The property is not eligible for this credit as the stormwater management systems do not meet **enhanced water quality treatment criteria** (80% TSS removal). No water quality credit.

Total Credit Calculation

The following calculation is used to determine the total credit given for this property.

(A)	Sum of Credit Amounts (Maximum of 50%)	%
(B)	Impervious Area Controlled on the Property	ha
(C)	Total Impervious Area on the Property	ha
(D)	Proportion of Impervious Area Eligible for Credit = (B)/(C)	%
(E)	Percent Reduction on Total Fee = (A)*(D)	%

Based on the stormwater management design and calculations, this property is eligible for 18.4% total credit.

(A)	Credit Amounts	Max of 50%
(i)	Peak Flow Reduction	21.1%
(ii)	Runoff Volume Reduction (Water Balance Control)	0.0%
(iii)	Water Quality Treatment	0.0%
(A)	Sum of Credit Amounts (Maximum of 50%)	21.1%
(B)	Impervious Area Controlled on the Property	0.700 ha
(C)	Total Impervious Area on the Property	0.800 ha
(D)	Proportion of Impervious Area Eligible for Credit = (B)/(C)	N/A
(E)	Percent Reduction on Total Fee = (A)*(D)	N/A

In the above example, although the pond only treats a portion of the impervious area, the application demonstrates a peak flow reduction for the entire site. This assessment considers the site's overall hydrology including both impervious and pervious surfaces; as well as the site’s hydraulic via a service connection to the sewer and any overland flow directed to the right-of-way. In this instance, Factor (D) in the above table “Proportion of Impervious Area Eligible for Credit = (B)/(C)” did not apply.

Example 4 – Direct Discharge – Partial Credit

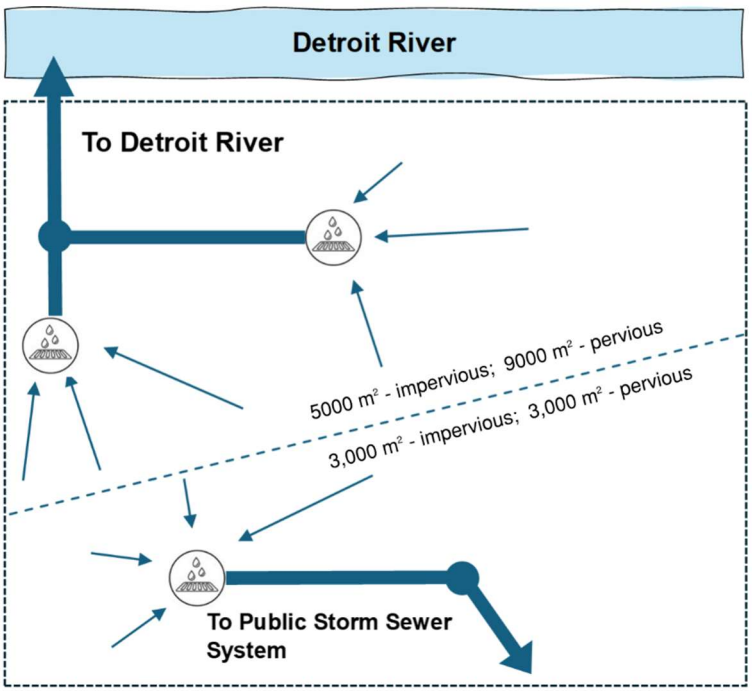
An existing industrial property is directly adjacent to Detroit River. The total impervious area is 8,000 m^2 and the total property area is 20,000 m^2. However, 5,000 m^2 of the impervious area and 9,000 m^2 of pervious area drains directly to Detroit River through Stormwater Conveyance Infrastructure that is owned, operated, and maintained by the property owner. The remainder of the property drains to the City's municipal stormwater management system.

The Stormwater Conveyance Infrastructure was constructed prior to January 1, 2025. No specific design standard is required; however, the infrastructure (inlets, pipes, outfalls, etc.) is in good working condition. The City has confirmed this through a site visit.

The property owner has provided all required submission materials, including a Stormwater Management Report certified by a Professional Engineer.

No water quality control is provided or proposed.

The credit application submission materials included the calculations below.



$$Fraction\ (A) = \frac{Total\ Area\ of\ the\ Property\ with\ Direct\ Discharge\ Outlet\ (ha)}{Total\ Property\ Area\ (ha)}$$

$$Fraction\ (A) = \frac{(0.900 + 0.500)\ ha}{2.000\ ha} = \frac{1.400\ ha}{2.000\ ha} = 0.700$$

$$Fraction\ (B) = \frac{Total\ Impervious\ Area\ of\ the\ Property\ with\ Direct\ Discharge\ Outlet\ (ha)}{Property\ Total\ Impervious\ Area\ (ha)}$$

$$Fraction\ (B) = \frac{0.500\ ha}{0.800\ ha} = 0.625$$

The fraction of the property eligible for credit is the lesser of the two values. In this case 0.625, and using Table 2B – Direct Discharge Credit Scale, **it was demonstrated the property is eligible for a 30% Direct Discharge Credit**. This credit value was determined using linear interpolation.

Example 5 – Direct Discharge – Full Credit

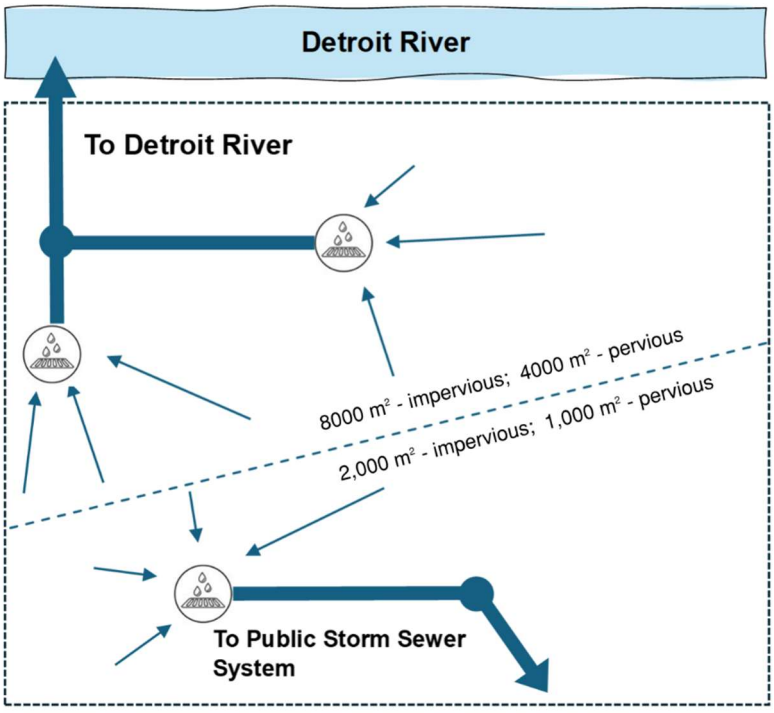
An existing condominium multi-unit residential property with a mid-rise building is directly adjacent to Detroit River. The total impervious area is 10,000 m^2 and the total property area is 15,000 m^2. Further, 8,000 m^2 of the impervious area and 4,000 m^2 of pervious area drains directly to Detroit River through Stormwater Conveyance Infrastructure that is owned, operated, and maintained by the property owner. The remainder of the property drains to the City's municipal stormwater management system.

The Stormwater Conveyance Infrastructure was constructed prior to January 1, 2025. No specific design standard is required; however, the infrastructure (inlets, pipes, outfalls, etc.) is in good working condition. The City has confirmed this through a site visit.

The property owner has provided all required submission materials, including a Stormwater Management Report certified by a Professional Engineer.

No water quality control is provided or proposed.

The credit application submission materials included the calculations below.



$$Fraction\ (A) = \frac{Total\ Area\ of\ the\ Property\ with\ Direct\ Discharge\ Outlet\ (ha)}{Total\ Property\ Area\ (ha)}$$

$$Fraction\ (A) = \frac{(0.800 + 0.400)\ ha}{1.500\ ha} = \frac{1.200\ ha}{1.500\ ha} = 0.800$$

$$Fraction\ (B) = \frac{Total\ Impervious\ Area\ of\ the\ Property\ with\ Direct\ Discharge\ Outlet\ (ha)}{Property\ Total\ Impervious\ Area\ (ha)}$$

$$Fraction\ (B) = \frac{0.800\ ha}{1.000\ ha} = 0.800$$

The fraction of the property eligible for credit is the lesser of the two values. In this case 0.800, and using Table 2B – Direct Discharge Credit Scale, **it was demonstrated the property is eligible for the maximum Direct Discharge Credit of 50%**.

Credit Calculation Examples