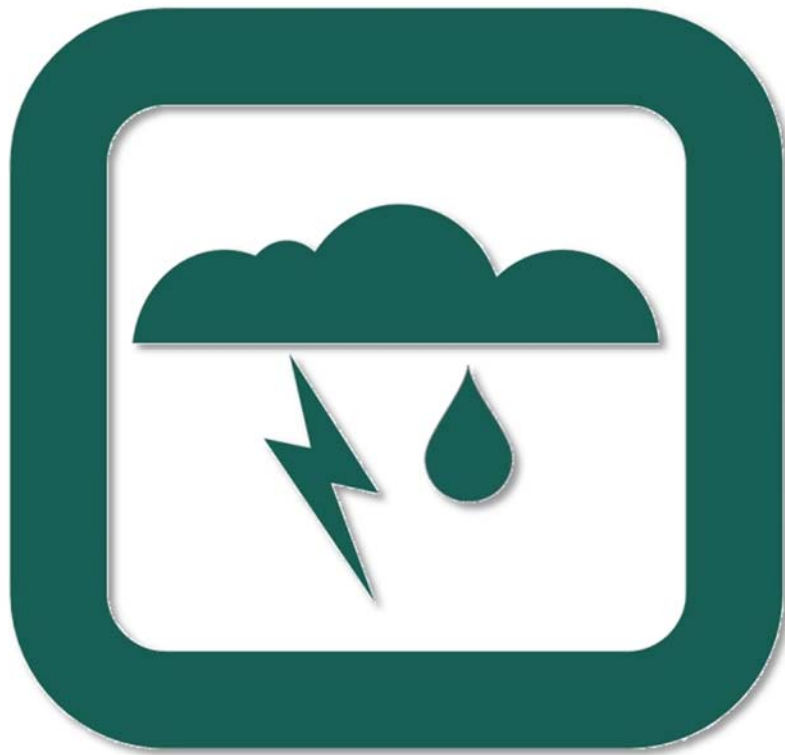


Municipal Storm Water Utility Credit Programs Summary

Storm Water Management



Saskatoon Water
Transportation & Utilities Department



EXECUTIVE SUMMARY

The purpose of this report is to compare other cities' Storm Water Management Credit and rebate programs to identify options for implementation in Saskatoon. Cities offer credits for non-residential properties that implement best management practices for peak flow reduction, runoff volume reduction, water quality improvement, education, and pollution prevention. The maximum total credit possible ranges between 45% and 50%, and each city varies on how they allocate credit percentages. Some cities also offer residential properties with credits or rebates for the installation of rain barrels, raingardens, bio-swales, permeable paving, and cisterns.



Introduction

This document outlines incentive programs that Canadian cities have implemented to reward investments in green infrastructure and storm water management practices on private property. Several cities have implemented storm water incentives for industrial, commercial, institutional, and multi-residential properties that contribute less water to the storm water system, and a fewer number have credits and rebates for single family residential properties.

Storm Water Incentive Overview

Table 1 provides an overview of the storm water incentives in seven different Canadian cities. Residential credits are generally based on volume of water stored or impervious areas treated whereas non-residential and multi-residential credits are often based on best management practices. Some cities have only implemented programs for non-residential and multi-residential properties to target larger contributors with more significant impact.

Table 1: Overview of Storm Water Credits for Seven Canadian Cities

City	Site Type	Basis For Credit	Details
Victoria, BC	Residential	-Rebates based on area of water stored or impervious area treated -Credits based on roof area treated	-Rain Gardens → \$375-\$1000 rebate -Rain Barrels → \$35-\$100 rebate -Cistern → \$180-\$600 rebate -Permeable Paving → \$200-\$750 rebate → \$750-\$1,500 rebate if accompanied by rock reservoir -10% credit if at least 25 sq. m of roof area is treated by any method
	Multi-residential and Non-residential	-Credits based on impervious area treated	-up to 40% credit depending on type of green infrastructure and area treated on a tired system.
Kitchener, ON	Residential	-Credits based on volume of water captured	-200-800L captured maximum credit 20% -801-3200L captured maximum credit 30% -3201L or more captured maximum credit 45%



Table 1 Continued: Overview of Storm Water Credits for Seven Canadian Cities

City	Site Type	Basis For Credit	Details
Kitchener, ON	Non-Residential	- Credits based on best management practices	-up to 25% credit for quantity control -up to 15% credit for quality control -up to 5% credit for educational programs implemented
Waterloo, ON	Residential	-Credits based on volume of water captured	-200-400L captured for credit of 9% -401-800L captured for credit of 18% -801-2000L captured for credit of 27% -2001-3200L captured for credit of 36% -≥3201L captured for credit of 45%
	Non-Residential	- Credits based on best management practices	-up to 25% credit for quantity control -up to 15% credit for quality control -up to 5% credit for educational programs implemented
Mississauga, ON	Residential	N/A	N/A
	Multi-residential and Non-residential	- Credits based on best management practices	-up to 40% credit for peak flow reduction -up to 10% credit for water quality treatment -up to 15% credit for runoff volume reduction -up to 5% credit for pollution prevention -Overall maximum credit of 50%
Edmonton, AB	Residential	N/A	N/A
	Non-residential	-Sites that demonstrate they contribute less to the storm water system than similar properties	-largely undeveloped sites -Sites with on-site storm water management -sites that drain directly to the North Saskatchewan river
London, ON	Large Properties	-Low and medium density residential properties receive a reduction	-low and medium density properties above 0.40 acres are assessed at 50% and 65% of their property size respectively
	Other	-Sites that demonstrate they contribute less to the storm water system than similar properties	-Properties can apply for reduced charges up to 50% based on a drainage report stamped by a qualified engineer that supports reason for reduction.
Guelph, ON	Residential	N/A	N/A
	Non-residential and Multi-residential properties of six units or more	-Credits based on best management practices	(Up to 50% maximum credit available) -15% for peak flow reduction -40% runoff volume reduction -15% water quality treatment -15% operations and activities



Table 2 compares some rebates and credits that are offered in a sample of Canadian cities. Edmonton, AB and London, ON were not compared as they do not apply their rewards based on the same criteria as the cities compared in the table. The only storm water incentive currently available in Saskatoon is a \$20.00 rebate for rain barrels.

Table 2: Rebates and Credits in Canadian Municipalities

Action	Victoria, BC	Kitchener, Waterloo, ON	Mississauga, ON	Guelph, ON
Residential Rain Garden 40 m ²	\$600 rebate 10% credit			
Residential Rain Barrel 500L	\$50 rebate	18% to 20% credit		
Residential Cistern 3500L	\$525 rebate 10% credit	45% credit		
Large Non-Residential Cistern Plumed for Indoors Treating 50% of Impervious Area	22% credit	Up to 25% credit for storage	Up to 15% credit for storage	Up to 40% credit for storage
Oil and Grit Separator		5-15% credit for quality	Up to 10% credit for quality	Up to 15% credit for quality
Education Program (Employee/ Student)		Up to 5% credit		Up to 5% credit

Five cities give credits to non-residential properties based on peak flow reduction, run off volume reduction, water quality improvement, education, and/or pollution prevention. Although Saskatoon does not currently have any type of credit program, the percentages stated in **Table 3** are the credit amounts that are proposed for implementation. All of the cities offer a 45% - 50% total credit maximum with variance in which items are considered for credit and how much each aspect is worth.

Table 3: Non-Residential Credit Percent Allocations

Municipality	Peak Flow Reduction	Run Off Reduction	Water Quality Improvement	Education	Pollution Prevention	Maximum Total
Victoria, BC	-	50	-	-	-	50
Kitchener, ON	-	25	15	5	-	45
Guelph, ON	15	40	15	5	10	50
Mississauga,	40	15	10	-	5	50
Waterloo, ON	-	25	15	5	-	45
Saskatoon, SK (proposed credits)	30	50	20	-	-	50



Incentive Programs by Municipality

The storm water incentive programs for seven Canadian cities are summarized in more detail below.

Victoria, BC

Victoria's Rainwater Rewards program provides both rebates and credits to citizens. The rebates and credits are based on the volume of rainwater trapped or the permeable area created. Rebates are one time incentives for implementing storm infrastructure and are summarized in **Table 4**. Credits are ongoing percentages off of storm water bills. Examples of low density residential credits are shown in **Table 5**. Similar credits up to 40% are available for non-residential properties; Rainwater Rewards Credits for Businesses, Institutions, Condos, and Apartments are in **Table 6**.

Table 4: Low Density Residential Rebates Victoria, BC

Rainwater Management Method	Min. Size	\$/L	\$/sq. m	Min. Rebate	Max Rebate
Rain Barrel (2x175L size)	350 L	\$0.10		\$35	\$100
Cistern	1200 L	\$0.15		\$180	\$600
Rain Garden/ Bioswale/ Infiltration chamber	25 sq. m		\$15	\$375	\$1,000
Permeable Pavement	10 sq. m		\$20	\$200	\$750
Permeable Pavement with Rock Reservoir	25 sq. m		\$30	\$750	\$1,500

Source: http://www.victoria.ca/EN/main/residents/water-sewer-stormwater/stormwater/credit_rebate_amounts.html

Table 5: Low Density Residential Credits Victoria, BC

Rainwater Management Method	Min. Size	Min. Roof area Treated (sq. m)	Ongoing Credit
Cistern	1200L	25	10%
Infiltration Chamber		25	10%
Rain Garden		25	10%
Bioswale		25	10%
Permeable Paving	10 sq. m		10%
Permeable Paving with Rock Reservoir		25	10%

Source: http://www.victoria.ca/EN/main/residents/water-sewer-stormwater/stormwater/credit_rebate_amounts.html



Table 6: Rainwater Rewards Credits for Businesses, Institutions, Condos, and Apartments

Impervious Area Treated (%)	Credit (%) Infiltration Chamber/ Rain Garden/ Bioswale/ Permeable Pavement/ Cisterns Plumbed for Indoors/ Intensive Green roofs	Credit (%) Cisterns – Hand Use	Credit (%) Cisterns – Irrigation System Extensive Green Roofs
10	4	2	3
15	7	3	5
20	9	4	7
25	11	6	8
30	13	7	10
35	16	8	12
40	18	9	13
45	20	10	15
50	22	11	17
55	24	12	18
60	27	13	20
65	29	14	22
70	31	16	23
75	33	17	25
80	36	18	27
85	38	19	38
90	40	20	30

Source:

<http://www.victoria.ca/assets/Departments/Engineering~Public~Works/Documents/SWURainwaterRewardsCredits.pdf>

Kitchener, ON

Storm water credits are available to residential and non-residential property owners and can reduce the storm water utility bill by up to 45%. For residential properties the credit is based on the volume of storm water diverted as shown in **Table 7**. For non-residential properties the credit is based on best management practices (BMP) with credits for flood prevention (quantity), pollution reduction (quality), and education as shown in **Table 8**. For the quality credit type, the credit levels are based on the long term average removal of total dissolved solids and the percentage of impervious area directed towards quality control.



Table 7: Residential Storm Water Utility Credit Types and Ranges in Kitchener, ON

Credit Type	Volume Captured	BMP Examples	Maximum Credit
Basic	200 - 800 L	1-4 rain barrels, small cistern	20%
Normal	801 - 3200 L	Large cistern, combination of cisterns and rain barrels	30%
Enhanced	3201 L or more	Large cistern, infiltration gallery	45%

Source: http://www.kitchener.ca/en/livinginkitchener/Stormwater_Credit_Application_Residential.asp

Table 8: Non-Residential Storm Water Utility Credit Types and Ranges in Kitchener, ON

Credit Type	BMP Examples	Maximum Credit
Quantity	Quantity control pad, parking lot storage, rooftop storage	25%
Quality	Filter strip, paved area sweeping program, salt management program	15%-Enhanced 10%-Normal 5%-Basic
Education	Employee, customer, student education program	5%

Source: http://www.kitchener.ca/en/livinginkitchener/Stormwater_Credit_Application_Non_residential.asp

Waterloo, ON

Waterloo has a similar storm water credit program as the City of Kitchener. Credits are available to both residential and non-residential property owners and can reduce the storm water utility bill by up to 45%. For residential properties the credit is based on the volume of storm water diverted as shown in **Table 9**. For non-residential properties the credit is the same as Kitchener's, which can be seen in previous **Table 8**. The non-residential credit is based on best management practices with credits for flood prevention (quantity), pollution reduction (quality), and education.

Table 9: Residential Storm Water Utility Credit Ranges in Waterloo, ON

Volume Captured	Credit Granted
200 – 400 L	9%
401 – 800 L	18%
801 – 2000 L	27%
2001 – 3200 L	36%
≥3201 L	45%

Source: <http://www.waterloo.ca/en/living/EligibilityResidential.asp>



Mississauga, ON

Credits are available for multi-residential and non-residential properties up to 50% based on best management practices including peak flow reduction, water quality treatment, runoff volume reduction, and pollution prevention. **Table 10** outlines Mississauga’s storm water reductions. Credit applications must be renewed at a minimum of every five years or anytime the site is modified in a way that might impact its runoff performance. Credit applications must contain supporting documentation by a qualified professional engineer.

Table 10: Storm Water Credit Amounts for Mississauga, ON

Category	Evaluation Criteria	Total Credit
Peak Flow Reduction	Percent reduction of the 100-year post-development flow to pre-development conditions of site	Up to 40%
Water Quality Treatment	Consistent with Provincial criteria for enhanced treatment	Up to 10%
Runoff Volume Reduction	Percent capture of first 15 mm of rainfall during a single rainfall event	Up to 15%
Pollution Prevention	Develop and implement a pollution prevention plan	Up to 5%

*Credits can only be granted up to a max of 50%

Source: <https://www.mississauga.ca/portal/services/credit-program>

Edmonton, AB

Storm water utility credits may apply to properties where owners have demonstrated that they contribute significantly less storm water per square metre than other similarly zoned properties. Reduced factors may also apply to non-residential properties that are:

- largely undeveloped;
- utilizing on-site storm water management; or
- Draining directly into the North Saskatchewan River without utilizing Edmonton’s drainage system.

Applications must be signed and sealed by an independent engineer registered in Alberta and must be renewed on a five-year basis or sooner if there is changes to the sites drainage characteristics.

https://www.edmonton.ca/city_government/documents/SWUPolicyAndProcedure.pdf

London, ON

Reductions are available for large properties (area above 0.40 acres) that are low or medium density residential which are assessed at 50% and 65% of the property size respectively. Other properties may apply to be assessed for a reduction up to 50% based on a drainage report prepared and stamped by a professional engineer that supports the reason for reduction.

<http://www.london.ca/city-hall/by-laws/Documents/wastewater-and-stormwater-WM28.pdf>



Guelph, ON

Guelph has a similar program to that of Mississauga. Credits are available for multi-residential of at least six units or more and non-residential properties up to 50% based on best management practices including peak flow reduction, water quality treatment, runoff volume reduction, and operations and activities (which includes pollution prevention and education).

Table 11 outlines Guelph's storm water reductions. Credit applications must be renewed at a minimum of every four years or anytime the site is modified in a way that might impact its runoff performance. Credit applications must contain supporting documentation certified by a qualified professional engineer.

Table 11: Storm Water Credit Amounts for Guelph, ON

Credit category	Description and basis for charge reduction	Maximum credit
Peak flow reduction	Facilities that control the peak flow of storm water 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 storm water 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 storm water discharged from the property, based on treatment type, pollutant load reduction, or Ministry of the Environment and Climate Change level of protection.	15%
Operations and activities	Non-structural measures including education programs and pollution prevention / risk management practices.	15%

<https://guelph.ca/living/environment/water/stormwater/stormwater-service-fee-credit-program/>