INFORMATION REPORT

TO:	Chair and Members Agriculture and Rural Affairs Advisory Committee
COMMITTEE DATE:	November 24, 2020
SUBJECT/REPORT NO:	Stormwater Rate Program (PW20081) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Ryan Doyle (905) 546-2424 Ext. 7455
SUBMITTED BY: **SIGNATURE:**	Andrew Grice Director, Hamilton Water Public Works Department

COUNCIL DIRECTION

N/A

INFORMATION

Stormwater management is a core business provided by the City of Hamilton (City) to manage water that is routed into drainage systems and discharges to natural areas such as creeks, lakes and wetlands. The absence of a functional stormwater management system will lead to stream erosion, water quality concerns, flooding impacts to public and private property and the disruption of aquatic habitat. Stormwater management is a shared responsibility between the City and private landowners.

Historical Stormwater Rate Discussions

Since 2009 there have been a number of discussions focused on the sustainability of the stormwater program. In 2009, an initial feasibility study to evaluate an alternative stormwater funding program was approved by Council and direction was provided to proceed with public consultation.

In October 2010 Council approved the creation of the Stormwater Rate Sub-Review Committee that was composed of four members of council and representation from various land owner groups and citizens-at-large. However, in 2011 the Stormwater

Rate Sub-Review Committee was dissolved as concerns were raised about the potential burden to various customer classes across the City.

In October 2015 a staff report focused on developing a stormwater rate program that provided transparency and equity amongst all contributing properties was presented to Council. The proposed strategy relied on a consulting assignment and Council was not supportive of the significant expenditure. Since then, several municipalities have implemented stormwater rate models and leveraging their work an internal review can be completed with existing resources.

Furthermore, on July 8, 2019 Council passed a motion that directed staff to review a Stormwater Rate Program for the City of Hamilton and report back to the General Issues Committee with a framework and options for implementation. This report was presented to Council on December 4, 2019 and outlined other municipal stormwater rate programs as well as a preliminary fee structure developed from the guiding principles identified within this document.

Municipal Scan – Ontario Stormwater Rate Programs

Hamilton is not alone in this sustainability and climate adaptation challenge. Over the past decade, a growing number of municipalities have shifted to a more equitable and robust stormwater structure to allow for better management of funding associated with maintenance and system enhancement. Staff completed a detailed review of existing stormwater rate models and a summary is presented below. There is no single funding mechanism that is a “best-fit” in every jurisdiction but many municipalities have implemented a financial strategy to shift funding from property tax to a dedicated rate-based structure.

City of Ottawa

Stormwater fees are based on property type, urban / rural service area and whether or not the property is connected to the sewer system. Stormwater fees are charged to all properties recognizing that everyone benefits from stormwater services. The Industrial, Commercial and Institutional (ICI) stormwater rate is calculated based on property assessment value as this is considered a reasonable proxy for property size. The program also provides a 30% discount for ICI properties that are not connected to the City wastewater system. Residential properties pay an annual fixed rate ($32 to $130) that recognizes the differences in urban and rural settings. The Ottawa stormwater rate structure displays fairness and flexibility to reflect the many different types of properties within the City.

City of Mississauga

The stormwater rate was introduced in 2016 and is calculated for each individual property utilizing a base fee ($106.10 in 2019) and site-specific billing units. A single billing unit of 267 m^2 represents the average hard surface area on a single detached residential property in Mississauga. The rate is subject to approval by Council and is reviewed each year as part of the City's annual business planning and budget process.

Properties in Mississauga fall into one of the following categories: residential, multi-residential or non-residential. For multi-residential and non-residential properties, the total hard surface area of each property is assessed. For residential properties, each house is assigned to one of five tiers based on the rooftop area which is used as a predictor of the total hard surface area on the property. For a residential property the annual stormwater rate charge ranges from approximately $50 to $180.

City of Guelph

The City of Guelph implemented a stormwater charge in 2017. The rate structure utilizes an Equivalent Residential Unit (ERU) of 188 m^2 representing the average area of hard surface on a residential property. All residential properties are assessed as 1 ERU with an associated 2019 stormwater rate of $5.20 per month. For multi-residential and ICI properties the fees are adjusted to reflect the number of ERU's for the individual property.

Town of Newmarket

The Town of Newmarket implemented a stormwater charge in 2017. Prior to implementation, stormwater was funded by property taxes and water / wastewater charges. The stormwater charge is calculated by multiplying the size of the property by a set runoff level rate. Properties categorized as low runoff (natural areas, vacant properties, golf courses, etc.) contribute $0.016698 per m^2, medium runoff (residential and institutional properties) contribute $0.081633 per m^2, and high runoff (commercial, industrial and mixed-use buildings) contribute $0.163325 per m^2.

City of London

The City of London's stormwater rate was introduced in 1996 and is based on property size and land use type. Properties 0.4 hectare or less are charged $195.60 per year, residential land no larger than 0.4 hectare without storm servicing (but within 90m of service area) are charged $147 per year. Properties above 0.4 hectares are assessed on an individual basis with the current monthly stormwater rate set at $135.71 per hectare.

City of Kitchener

The City of Kitchener transferred stormwater management funding from property tax to a rate-based system in 2011. The Kitchener program utilizes a tiered flat fee based on property size and the impervious area of the property. Kitchener established the average impervious areas for small, medium and large residential properties and developed a stormwater rate for each size. Properties with greater than 344 m^2 of impervious area are considered non-residential and the associated stormwater charge is contingent upon the area of impervious surfaces. Stormwater fees are charged to urban and rural properties recognizing that everyone benefits from stormwater services. Estimated fees per year for residential properties range between $105.84 to $353.52 per year. Estimated fees per year for ICI properties range between $337.92 to $35,960.40 per year.

Existing City of Hamilton Stormwater Funding Strategy

Hamilton's stormwater program is currently funded through the Wastewater rates and to a much lesser extent by property taxes.

The 2019 Approved Wastewater Budget (stormwater sub-component only) reflects a total net budget of $26.2M. The operating component of the 2019 rate budget represents $12M ($4.8M expenditures and $7.2M net capital financing costs) while the capital component of the 2019 rate budget reflects planned expenditures of $10M for capital rehabilitation and system enhancements. Additionally, there continues to be a portion of the stormwater program funded by property taxes and the 2019 Tax Supported Budget reflects approximately $4.2 million to support stormwater services.

The estimated replacement value of the City's stormwater assets is $1.5B and the inventory continues to grow in response to the development of the City as shown in Table 1.

Stormwater Asset Component	2005 Inventory	2009 Inventory	2016 Inventory	2019 Inventory
Storm Sewers	965 km	1,010 km	1,149 km	1,216 km
Manholes	13,779	14,105	19,551	~21,000
Storm Pumping Stations	-	-	-	2
Watercourses	-	-	-	191 km
Major Swales	15 km	-	190 km	-
Ditches	20 km	-	2,164 km	-
Municipal Drains	-	-	-	57 km
Assumed Storm Ponds	50	76	119	120
Un-assumed Storm Ponds	-	N/A	36	39
Engineered Wetlands	-	-	-	7

Low Impact Development Features within ROW	-	-	-	4
Inlet/Outlet Structures	1,000	845	977	~1,000

Existing Funding Structure Evaluation and Areas for Improvement

Fairness and Equity – The City's current stormwater funding structure is a combination of Wastewater rates, development charges, direct developer contributions and property taxes. Most of the funding comes from the rate revenues which are based on the metered drinking water consumption of those connected users. Approximately 3,300 accounts within the City, such as parking lots, do not have a wastewater connection and therefore do not contribute to the stormwater program through their rates. Furthermore, there are properties such as large commercial plazas where the volume of water consumption is not proportional to the stormwater services they receive.

Financial Sustainability – As overall drinking water consumption has steadily declined over the past decade; wastewater and stormwater services are competing for limited funds. The frequency and duration of storms has increased in recent years and the pressures generated by drinking water conservation have resulted in additional financial pressures that cannot match program needs.

City of Hamilton Potential Stormwater Rate Model

A sustainable stormwater program should address the following components:

- Flooding and Erosion
- Regulatory Requirements
- Asset life cycle costs (planning, construction, operations, etc)
- Water Quality
- Climate Change Adaptation
- Public Education and Enforcement
- Administration and Financial Management

To develop the potential stormwater rate framework the following guiding principles were utilized:

- Residential stormwater fee must reflect an equitable distribution that considers the average level of stormwater service provided
- Multi-residential / Industrial / Commercial / Institutional stormwater fees should reflect site specific stormwater contribution that is calculated utilizing land use, property size and estimated impervious area
- Stormwater rate should be a reallocation of the existing Wastewater rate and reflect net zero increases where applicable
- Simplify policy and billing mechanisms

The volume of stormwater runoff produced is directly proportional to the amount of impervious area. This concept is often referred to as the run-off coefficient, which reflects the permeability of a property's surface area. Impervious area includes hard surfaces that block the infiltration of rainwater into the ground. Examples include rooftops, driveways, parking areas, patios, and garages. The amount of impervious area on a property has a direct correlation to its contribution of runoff volume and pollutant loading into the stormwater management system and is used as the basis of cost allocation for the stormwater fixed rate charge. Runoff from pervious and impervious surfaces must also be managed by the City's stormwater management system.

As a first step, the distribution of properties within rural and urban boundaries based on land use / size was calculated. Utilizing this information, the estimated impervious area coverage per land use type was calculated using run-off coefficients found within City of Hamilton's Comprehensive Development Guidelines. Additional consideration was given to rural properties recognizing the differences in development practices. Statistical analysis based on land size was used to separate the ICI properties into smaller groupings. Table 1 contains the distribution of impervious areas within the City by land type.

Table 1 – Impervious Area Distribution

Property Type	Percentage
Parking Lots	1%
Commercial Large (11%) Medium (1%) Small (<1%)	12%
Industrial Large (22%) Medium (4%) Small (1%)	27%
Institutional Large (8%) Medium (2%) Small (<1%)	10%
Residential – Town / Row	6%
Residential – Apartment Building	2%
Residential – Detached / Semi / Mobile	43%
Agricultural	1%

Utilizing a distributive approach based on impervious area ensures a consistent and equitable approach for all property classification while minimizing the administrative burden to run the program. Simply put, properties that have more impervious area put a

larger demand on the stormwater system compared to naturalized space and the stormwater rate fee acknowledges this.

In addition, it is understood that different areas of the City (urban, rural, and settlement) receive different levels of stormwater service. In order to recognize the differences in service levels within the community, the developed model considers that rural settlement properties receive a 20% discount on fixed rate charge and rural properties receive a 40% discount on the fixed rate charge.

The potential stormwater rate framework was simulated against the 2019 approved Wastewater Budget (stormwater sub-component only) to understand the financial implications to several property types and service levels within the City. The results of the exercise are highlighted in Table 2.

Table 2 – Potential Stormwater Rate Structure Utilizing 2019 Approved Stormwater Budget

		20% Discount	40% Discount
MONTHLY CHARGE	Urban	Rural Settlement	Rural
Parking Lot	$60.00	$48.00	$36.00
Commercial Large (> 0.22ha)	$200.00	$160.00	$120.00
Commercial Medium	$20.00	$16.00	$12.00
Commercial Small (< 0.03ha)	$10.00	$8.00	$6.00
Industrial Large (> 1.56ha)	$1400.00	$1120.00	$840.00
Industrial Medium	$150.00	$120.00	$90.00
Industrial Small (< 0.25ha)	$50.00	$40.00	$30.00
Institutional Large (> 1.12ha)	$430.00	$344.00	$258.00
Institutional Medium	$50.00	$40.00	$30.00
Institutional Small (< 0.06ha)	$20.00	$16.00	$12.00
Residential - Town / Row	$5.00	$4.00	$3.00
Residential – Apt Building	$60.00	$48.00	$36.00
Residential Detach / Semi / Multiplex / Mobile	$7.50	$6.00	$4.50
Agricultural Lands	$1.25	$1.00	$0.75

Stormwater Rate Incentives

Incentive programs associated with a stormwater rate have been implemented by some Ontario municipalities. The basic principle is that incentives should be given for approved private investments or actions that reduce public costs and the burden on the stormwater system. Depending on the type of detention, retention or direct discharge structure, the contribution to the municipal stormwater system may be reduced or eliminated.

Since the last report was presented to Council at General Issues Committee on December 4, 2019, investigations have been underway evaluating the feasibility and types of residential, industrial, commercial, and institutional incentives programs. Additionally, as per Council's request, Hamilton Water is continuing to explore what a stormwater rate would look like for residential properties based on a defined rate for small, medium, and large residential property sizes.

APPENDICES AND SCHEDULES ATTACHED

N/A