City of Hamilton

GENERAL ISSUES COMMITTEE (SPECIAL)

AGENDA

Meeting #:	23-021
Date:	June 28, 2023
Time:	9:30 a.m.
Location:	Council Chambers (GIC) Hamilton City Hall 71 Main Street West

Angela McRae, Legislative Coordinator (905) 546-2424 ext. 5987

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1. CEREMONIAL ACTIVITIES

2. APPROVAL OF AGENDA

   (Added Items, if applicable, will be noted with *)

3. DECLARATIONS OF INTEREST

4. COMMUNICATIONS

   4.1 Correspondence Respecting Item 7.2, Stormwater Funding Review (FCS22043(b)), from the following individuals:

   Recommendation: Be received and referred to consideration of Item 7.2.

   a. Connie Barry

5. DELEGATION REQUESTS

   5.1 Delegation Requests respecting Item 7.1 City of Hamilton Watershed Action Plan Update (PW19008(u)), from the following individuals:

   a. Kristin O'Connor, Hamilton Harbour Remedial Action Plan (In-Person)

6. PUBLIC HEARINGS / DELEGATIONS

7. STAFF PRESENTATIONS

7.1 City of Hamilton Watershed Action Plan Update (PW19008(u)) (City Wide)

7.2 Stormwater Funding Review (FCS22043(b)) (City Wide) (Outstanding Business List Item)

8. ADJOURNMENT

From: Connie Barry
Sent: June 14, 2023 10:07 PM
To: clerk@hamilton.ca
Subject: Comments on Stormwater Funding Structure

Dear Legislative Coordinator June 13, 2023
General Issues Committee

RE: Stormwater Funding Structure Review

I wish to express my support for the City initiating a dedicated Stormwater Funding system. This will provide a reliable and fair source of funding for municipal studies, projects and maintenance to better manage stormwater in the City's urban limits. This will also ensure that the City of Hamilton aligns its stormwater funding alongside other progressive municipalities across Ontario, Canada and the US.

A couple of key comments as you move to implementation for your consideration:
1. Stormwater Rates will need to be set so that they best reflect the stormwater services being provided now and in the future. Given that virtually 100% of the stormwater management needs are within the urban limits, it is strongly suggested that rural properties be exempted from the charge. This perspective is based on the fact that rural properties do not contribute added drainage to waterways nor do they require major conveyance systems (only roadside ditches which are not actively maintained and are part of roadway maintenance).
2. The implementation of a stormwater rate should come with a corresponding reduction in property taxes akin to the amount currently being dedicated to stormwater projects.

Thank you for this opportunity and good luck with the process to establishing a stormwater funding structure.

Connie Barry

Submitted on Fri, 05/26/2023 - 09:59

Submitted by: Anonymous

Submitted values are:

Committee Requested

Committee
General Issues Committee

Will you be delegating in-person or virtually?
In-person

Will you be delegating via a pre-recorded video?
No

Requestor Information

Requestor Information
Kristin O'Connor
Hamilton Harbour Remedial Action Plan
2596 Britannia Rd W
Burlington, Ontario. L7P0G3
koconnor@hrca.on.ca
289-776-9094

Preferred Pronoun
she/her

Reason(s) for delegation request
Wednesday, June 28 - General Issues Committee (Special)
I would like to request to be a delegate to give an introduction and update on the Hamilton Harbour Remedial Action Plan (RAP) in support of the Watershed Action Plan item that City of Hamilton staff (Tim Crowley/Cari Vanderperk) will be presenting to GIC members on June 28.

Will you be requesting funds from the City?
No

Will you be submitting a formal presentation?
Yes

Hamilton Harbour Remedial Action Plan

Kristin O'Connor, HHRAP Coordinator

City of Hamilton, General Issues Committee

June 28, 2023

HAMILTON HARBOUR
REMEDIAL ACTION PLAN

A vibrant centrepiece in our community's life

Areas of Concern and Remedial Action Plans

HAMILTON HARBOUR REMEDIAL ACTION PLAN

Photo Collage: HHRAP Files

Beneficial Use Impairments

BUI 1 Fish & Wildlife Consumption
BUI 3a: Fish Populations
BUI 3b Wildlife Populations
BUI 4 Fish Tumours
BUI 5 Bird or Animal Deformities
BUI 6 Benthos
BUI 7 Dredging
BUI 8 Eutrophication
BUI 10 Beaches
BUI 11 Aesthetics
BUI 13 Phytoplankton/Zooplankton
BUI 14 Fish & Wildlife Habitat

Celebrate Success

First status change for Hamilton Harbour RAP!

www.hamiltonharbour.ca/feedback

Full report

Story map

Feedback Survey

Celebrate Success

Photo Credit: Riggs Engineering

Randle Reef Stage 2 Completion

Photo Credit: City of Hamilton

Woodward WWTP Tertiary Treatment

Acknowledge Challenges

Photo Credit: N Finney

Watershed Impact

Photo Credit: M Charlton

Algal Blooms

Photo Credit: DFO

Struggling Fish Populations

Seize Opportunities

Photo Credit: T Long

Photo Credit: Spirit of Nature

City of Hamilton

Watershed Action Plan

Stormwater Rate

Questions?

HAMILTON HARBOUR
REMEDIAL ACTION PLAN

Photo Credit: G Barrett

Canadian Context

HAMILTON HARBOUR REMEDIAL ACTION PLAN

Status of Beneficial Use Impairments in the Canadian Great Lakes Areas of Concern

AOC	Restrictions on fish & wildlife consumption	Tainting of fish & wildlife flavour	Degradation of fish & wildlife populations	Fish tumours or other deformities	Bird/animal deformities or reproduction problems	Degradation of benthos	Restrictions on dredging activities	Eutrophication or undesirable algae	Restrictions - drinking water consumption, taste/odour problems	Beach Closings	Degradation of aesthetics	Added costs to agriculture or industry	Degradation of phyto- and zooplankton populations	Loss of fish & wildlife habitat	**Original Total (Impaired + RFA)**	**Total Removed**	**Remaining Total (Impaired + RFA)**
Thunder Bay	**RFA**			2019*	2019*		2012			2023	2019	2004	2020*		11	7	4
Nipigon Bay **Delisting Pending****		1995	2016**	1995*		2016**	1995	2016**			2016**			2016**	8	8	0
Jackfish Bay **In Recovery**	**RFA**			2010	2010*		1998				**RFA**				8	3	5
Peninsula Harbour			2021*	2012*		2022	2012							2021*	6	5	1
St. Marys River					2016*			2018		2018	2018				10	4	6
Spanish Harbour **In Recovery**			1999		1999*		2020			1999		1999	1999*	1999*	9	7	2
Severn Sound **Delisted**	2002		2002				2002	2002			2002*			2002	6	6	0
Collingwood Harbour **Delisted**	1994		1994		1994	1994	1994	1994		1994	1994		1994	1994*	10	10	0
St. Clair River		2011*	**RFA**	2021*	2018*		2018			2018	2016	2012			12	7	5
Detroit River		2014		2020		2020	2019		2010	2016	2016	2010	2021*		13	9	4
Wheatley Harbour **Delisted**	2010		2010			2010*	2010	2010						2010	6	6	0
Niagara River				2009*	2009		2009	2019		2023			2019*		10	6	4
Hamilton Harbour				**RFA**	**RFA**								**RFA**		11	0	11
Toronto and Region				2011*	2011*	2016	2016				2020		**RFA**		11	5	6
Port Hope Harbour															1	0	1
Bay of Quinte			2018	2017*		2018	2017		2020	2019	2022			2018	11	8	3
St. Lawrence River		1997*		**RFA**	2007*	2007	2007		1997		1997	1997	**RFA**		14	7	7
Original Total	15	4	16	12	11	15	17	10	4	11	12	5	9	16	157		
Total Removed	3	4	7	9	9	8	14	6	3	6	10	5	5	7		98	
Remaining Total	12	0	9	3	2	7	3	4	1	5	2	0	4	9			59

BUI Removed

BUI Impaired

RFA = Requires Further Assessment

***** = Originally RFA

Last Updated: March 2, 2023

INFORMATION REPORT

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	June 28, 2023
SUBJECT/REPORT NO:	City of Hamilton Watershed Action Plan Update (PW19008(u)) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Tim Crowley (905) 546-2424 Ext. 5063
SUBMITTED BY: **SIGNATURE:**	Cari Vanderperk Director, Watershed Management Public Works Department

COUNCIL DIRECTION

On November 27, 2019, and December 11, 2019 Council amended Item 8 of the November 20, 2019, General Issues Committee (Report 19-024) which outlined items related to the contamination of Chedoke Creek as a result of the discharge from the Main/King Combined Sewer Overflow tank. Motion item (m) states “That the City recommit to the water quality objectives in the Remedial Action Plan process”.

INFORMATION

The City of Hamilton (City) has been a participant in the Hamilton Harbour Remedial Action Plan since its inception in 1985 and has contributed to many projects that address point source contamination to Hamilton Harbour, which are typically from a single identifiable site such as a wastewater treatment plant. Projects that have been or will be implemented to address point source contamination include:

- Sewer lateral cross connection investigations and repairs,
- Decommissioning the Waterdown Wastewater Treatment Plant,
- Real-time control of key wastewater collection system regulators,
- Construction of nine (9) Combined Sewer Overflow tanks over 30 years,
- Implementation of tertiary treatment at the Dundas Wastewater Treatment Plant,
- Construction of tertiary treatment at the Woodward Wastewater Treatment Plant,
- Woodward Wastewater Treatment Plant Primary treatment expansion; and,
- Financial contribution to the Randle Reef Engineered Containment Facility.

In Ontario, the responsibilities for the Hamilton Harbour Remedial Action Plan progress and Area of Concern remediations are shared by the federal and provincial governments through the Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem. The Hamilton Harbour Remedial Action Plan office tracks environmental conditions, activities and outcomes, and reports on the status of each of the 14 Beneficial Use Impairments within the Hamilton Harbour Area of Concern.

The goal is to shift the status of each Beneficial Use Impairments from “Impaired” to “Not Impaired” moving Hamilton Harbour from an “Area of Concern” to an “Area of Concern in Recovery”. Once this happens, Hamilton Harbour will continue to be monitored for many years while “in Recovery” before formal delisting can occur. The status of each Canadian Area of Concern was last published in October 2021 by Environment and Climate Change Canada, titled “Restoring the Great Lakes Areas of Concern”, and is attached as Appendix “A” to Report PW19008(u).

Local departments at all levels of government as well as non-governmental organizations, academia, businesses, industry, and the public continue to monitor the environmental health of Hamilton Harbour. Each agency has oversight and hands-on implementation of various actions identified within the Hamilton Harbour Remedial Action Plan. All data related to action planning is gathered and presented within the Hamilton Harbour Remedial Action Plan community on an annual basis, through various committees and workshops, to understand the actions taken and to identify and target gaps accordingly.

Most of the City’s effort to reduce point source contamination into Hamilton Harbour will be implemented by mid-2023, such as the Woodward Wastewater Treatment Plant upgrades. This shifts the primary harbour impact to non-point source contamination inputs, which generally originate from rural and urban stormwater runoff. Water quality in receiving environments can be adversely impacted by pollutants carried in runoff, such as sediment, hydrocarbons, micro-plastics, heavy metals, litter, and biological pollutants.

The amount of impervious area in a city has a significant impact on the volume of stormwater runoff, the number of pollutants that are carried to receiving waters, flooding risk and increases the risk of wastewater treatment plant bypasses. In the rural settlement area, stormwater runoff and irrigation drain fertilizers and pesticides into adjacent bodies of water.

To continue to meet the expectations for an improved aquatic environment within our watersheds and Hamilton Harbour, and prioritize environmental stewardship, in 2021 the City assembled a Stakeholder Liaison Committee, to develop the City of Hamilton Watershed Action Plan. Working together under the guidance outlined in the Terms of Reference, this group helps to advance City specific non-point watershed actions

having the greatest influence on improving watershed and harbour conditions to support the eventual delisting of Hamilton Harbour as an Area of Concern.

In 2016, a set of recommendations was developed through a collaborative Hamilton Harbour Remedial Action Plan process to identify contributions of contamination into Hamilton Harbour. The recommendations assigned to the City were used as a starting point for the recently assembled Stakeholder Liaison Committee. As such, the Stakeholder Liaison Committee continues to act as a technical working group of the already established Hamilton Harbour Remedial Action Plan Watershed Advisory Group. A graphic representing the reporting structure and how this Stakeholder Liaison Committee fits into the greater Hamilton Harbour Remedial Action Plan Secretariat is attached as Appendix "B" to Report PW19008(u).

Stakeholder Liaison Committee membership is structured to provide a balance of perspectives, knowledge and expertise and includes representation from the following groups:

- City of Hamilton
  - Public Works
    - Hamilton Water
    - Environmental Services
    - Engineering Services
    - Waste Management
    - Transportation
  - Planning & Economic Development
    - Sustainable Communities
    - Heritage and Urban Design
    - Growth Management
    - Climate Change Initiatives
  - Healthy & Safe Communities
    - Recreation
    - Food & Water Safety
- Indigenous Relations
- Conservation Halton
- Royal Botanical Gardens
- Hamilton Conservation Authority
- Grand River Conservation Authority
- Niagara Peninsula Conservation Authority

The Stakeholder Liaison Committee updates the Watershed Advisory Group regarding the development of the City of Hamilton Watershed Action Plan during each Watershed Advisory Group meeting. As a result, member agencies from the Watershed Advisory Group, listed below, provide additional insight, recommendations, guidance, and support to the Stakeholder Liaison Committee.

Watershed Advisory Group:

- Bay Area Restoration Council
- City of Burlington
- Hamilton Harbour Remedial Action Plan

- Conservation Halton
- Environment and Climate Change Canada
- Environment Hamilton
- Hamilton Conservation Authority
- Ministry of the Environment, Conservation and Parks
- Royal Botanical Gardens
- The Regional Municipality of Halton

Additional consultation partners were also identified, as they are not currently members of Watershed Advisory Group. The Stakeholder Liaison Committee has and will continue to engage with these partners throughout the development and implementation of the City of Hamilton Watershed Action Plan:

- Indigenous Nations and First Peoples
  - City of Hamilton Indigenous Advisory Committee
  - City of Hamilton Urban Indigenous Water Walkers
  - Huron-Wendat Nation
  - Mississaugas of the Credit First Nation
  - Six Nations of the Grand River Elected Council
  - Haudenosaunee Confederacy Chiefs Council, as represented by the Haudenosaunee Development Institute
- McMaster University
- Redeemer College University
- Green Venture
- Ontario Ministry of Transportation
- Fisheries and Oceans Canada

Unique to Ontario, Conservation Authorities serve as local watershed management agencies that deliver services and programs to protect and manage impacts on water and other natural resources in partnership with all levels of government, landowners, and many other organizations. Their core mandate is to undertake integrated watershed-based programs to protect people and property from flooding and other natural hazards, and to conserve natural resources for economic, social, and environmental benefit.

The City of Hamilton Watershed Action Plan is not meant to duplicate those efforts, instead it is intended to identify City specific actions to support the Conservation Authorities mandate, while also addressing water quality objectives in the Remedial Action Plan process. The intention of City of Hamilton Watershed Action Plan is to:

- Reduce the pollution of waterways due to rural and urban runoff
- Increase the retention and infiltration of stormwater into the ground
- Increase the connectivity of naturalized areas and green infrastructure
- Minimize system capacity risk due to growth, development, and climate change

- Maximize the adaptability of investments to manage future uncertainties

Under of the umbrella of the Clean Harbour Program, the Stakeholder Liaison Committee sits quarterly for meetings with the current focus on evaluating existing assessments, reports and programs that contain unique recommendations for improving the health of our watersheds.

To-date, a scoring matrix has been developed and over fifty recommendations have been evaluated for inclusion and implementation as part of the City of Hamilton Watershed Action Plan and are categorized as either a capital project, policy/program, or an operational and maintenance modification. An example of a capital project may include sewer separation activities, while policy or programs include actions such as community stormwater outreach campaigns or a stormwater user rate. Lastly, operational and maintenance may include modifications to the catch basin cleaning or street sweeping programs.

The evaluation framework also involves estimating the implementation timing of each action into three relative time scales:

- Short-term (1-2 years)
- Mid-term (2-5 years)
- Long-term (5+ years)

Short-term projects may involve an educational program that can be implemented quickly, assuming that resources are available. Mid-term projects may involve restoration projects with partner support. Lastly, long-term projects may involve recommendations that include construction, retrofits, or acquisition / easements, as these can require a much longer timeframe to implement and require a larger commitment of upfront staff time and funding.

In addition to implementation timing, the evaluation framework also identifies the appropriate City lead for each action and scores the actions against environmental, economic, and social criteria, developed using stakeholder input. Supporting data, such as the City of Hamilton Surface Water Quality Program, and Conservation Authority Watershed Report Cards are used to validate the inclusion of each action into the City of Hamilton Watershed Action Plan. Workshops with each external stakeholder and City lead are taking place to confirm each action with regards to the scoring, timing, and whether more resources are needed.

The final deliverable of the City of Hamilton Watershed Action Plan is an implementation strategy developed in accordance with City and Provincial guidelines, policies and regulations that outline a 5-10-year capital budget plan and financing strategy targeted for the 2025 Rates Budget Report. At that time discussions will take place in order to

determine if there are future works being planned that would be suitable for the continuation of the Stakeholder Liaison Committee or another committee similar in nature.

The City's Communications and Strategic Initiatives team is continuing to support this initiative with a communications strategy to ensure the community is kept informed. The Engage Hamilton platform will be used to solicit public feedback. Before launching on Engage Hamilton, the list of actions will need to be authenticated by Stakeholder Liaison Committee members and external partners, with all comments addressed. A tentative launch date is planned for September 2023.

A webpage, under the Clean Harbour Program, has also been created to support ongoing communications. The webpage includes an ArcGIS story map to visually describe the current state of each watershed and how the actions from the City of Hamilton Watershed Action Plan will address issues identified within those watersheds. To learn more please visit: www.hamilton.ca/watershedactionplan.

Hamilton Harbour represents one of the largest natural features in the community that should be safe and accessible to all residents. Addressing non-point watershed issues of contamination will further change the status of health, safety, and image within the City of Hamilton. Population growth, greenfield development and urbanization, agricultural production, and a changing climate will continue to exert pressure on the quality and supply of water resources. Addressing existing and emerging water management issues is critical for all who live, work, and recreate in the City of Hamilton.

APPENDICES AND SCHEDULES ATTACHED

Appendix "A" to Report PW19008(u) – Restoring the Great Lakes Areas of Concern - AOC Status

Appendix "B" to Report PW19008(u) – Hamilton Harbour Remedial Action Plan Secretariat

Environment and Climate Change Canada
Environnement et Changement climatique Canada

RESTORING THE GREAT LAKES AREAS OF CONCERN

CANADIAN ENVIRONMENTAL SUSTAINABILITY INDICATORS

Canada

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Aussi disponible en français

CANADIAN ENVIRONMENTAL SUSTAINABILITY INDICATORS

RESTORING THE GREAT LAKES AREAS OF CONCERN

October 2021

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Restoring the Great Lakes Areas of Concern

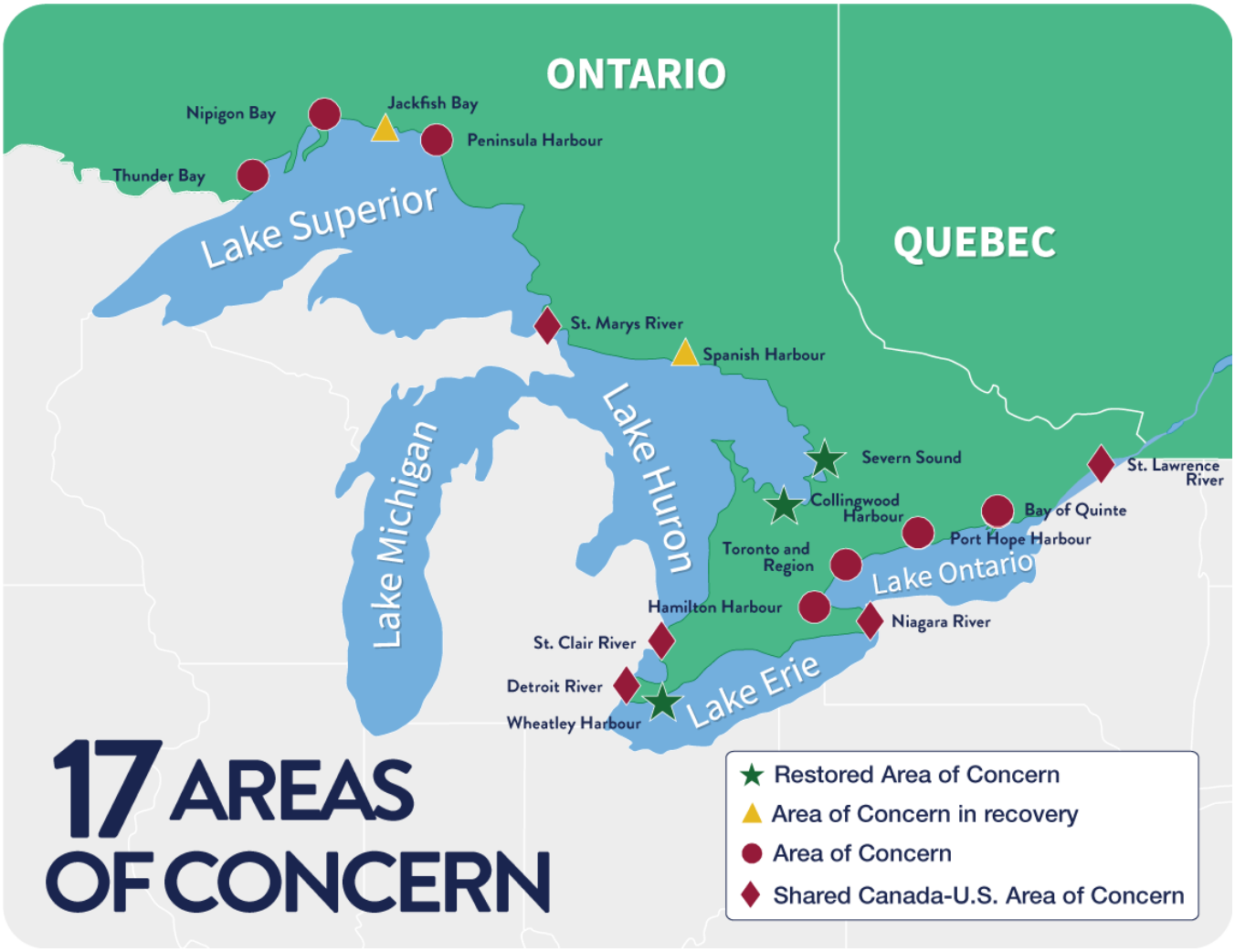
The Great Lakes basin is Canada's most populated region. Its large population and extensive development places a strain on ecosystem health. Locations having experienced a high level of environmental damage from human activity are called Areas of Concern. This indicator assesses progress on restoring Areas of Concern around the Great Lakes within Canadian waters and those shared with the United States.

Status of the Great Lakes Areas of Concern

Key results

- Environmental quality in Canada's 17 Great Lakes Areas of Concern has improved since the restoration program began in 1987
- As of 2021, 3 Areas of Concern have been fully restored and delisted

Figure 1. Status of Canada's 17 Great Lakes Areas of Concern, 2021



Data for Figure 1

Note: As of 2016, the Nipigon Bay Area of Concern had all of its impaired beneficial uses restored; however, it cannot be formally designated as a Restored Area of Concern until the final approval of its completion report following public consultations on its delisting. Area of Concern

status is based on progress reported as of March 31, 2021.
Source: Environment and Climate Change Canada (2021) Great Lakes Areas of Concern Office.

In 1987, the Canada-United States Great Lakes Water Quality Agreement identified 43 Areas of Concern around the Great Lakes. Of these Areas of Concern:

- 26 were entirely in American waters and 5 have been restored: Oswego River (2006), Presque Isle Bay (2013), Deer Lake (2014) and White Lake (2014), Lower Menominee (2020)
- 12 were entirely in Canadian waters
- 5 are shared with the United States

To date, considerable progress has been made towards the restoration of Canada's 17 Areas of Concern (including the 5 shared with the United States):

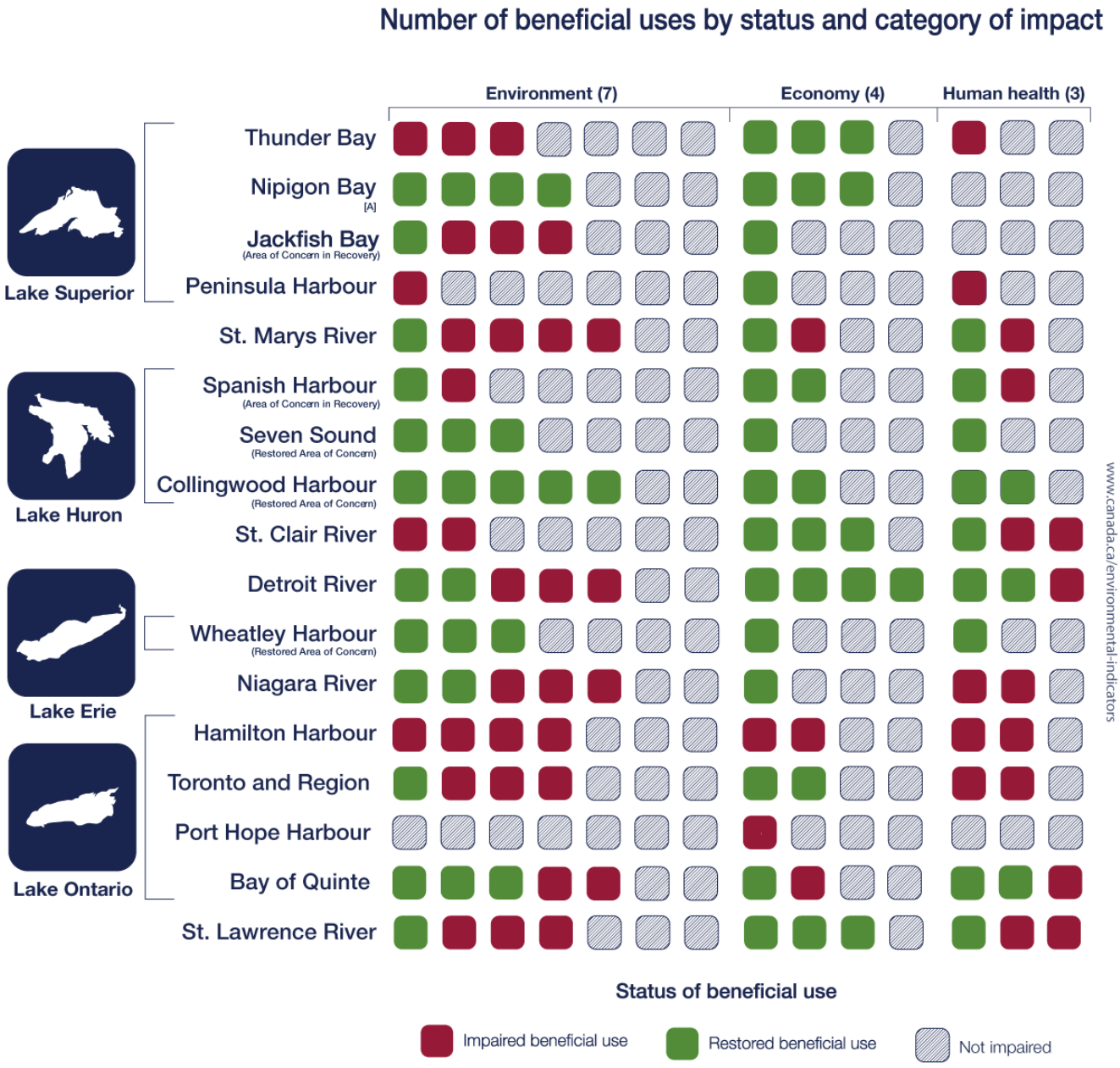
- 3 have been fully restored and delisted: Collingwood Harbour (1994), Severn Sound (2002) and Wheatley Harbour (2010)
- 1 more has had all impaired beneficial uses restored and community engagement will continue until it is removed from the list of Areas of Concern: Nipigon Bay (2016)
- 2 have been formally designated as Areas of Concern in Recovery, signifying that all remedial actions have been completed and the natural recovery of the ecosystem will continue to be monitored: Spanish Harbour (1999) and Jackfish Bay (2011)
- efforts continue to restore the remaining 11 Areas of Concern: Peninsula Harbour, Thunder Bay, Bay of Quinte, Port Hope Harbour, Toronto and Region, Hamilton Harbour, St Lawrence River, St. Clair River, St. Marys River, Niagara River and Detroit River

Progress on restoring the Great Lakes Areas of Concern

Key results

- As of March 2021, 68 of the 121 impaired beneficial uses identified in Canada's 17 Areas of Concern have been restored. Efforts continue to restore the 53 remaining impaired beneficial uses
- Between April 2020 and March 2021, 5 beneficial uses were restored (out of the 68 restored) in the Spanish Harbour, Detroit River, Toronto and Region, and Bay of Quinte Areas of Concern

Figure 2. Progress on Canada's 17 Great Lakes Areas of Concern, 1987 to 2021



Data for Figure 2

Note: [A] As of 2016, the Nipigon Bay Area of Concern had all of its impaired beneficial uses restored; however, it cannot be formally designated as a Restored Area of Concern until the final approval of its completion report following public consultations on its delisting. The number of beneficial uses that are Impaired in 2021 is based on progress reported as of March 31, 2021.
Source: Environment and Climate Change Canada (2021) Great Lakes Areas of Concern Office.

At the 17 Areas of Concern, 121 beneficial uses have been considered impaired since the restoration program began in 1987. Beneficial uses describe how an aquatic ecosystem benefits the environment, economy or human health: they are the ecological services that are available to the population and the environment when the ecosystem is healthy (not impaired). An impaired beneficial use has experienced enough changes to the chemical, physical or biological integrity of the area to restrict human use or to restrict the area's ability to support

plants and animals. Before classifying an area as an Area of Concern, 14 beneficial uses are considered. Each of the 14 beneficial uses can be classified based on their impairment under 1 of the following Categories of impact:[1]

Environment (7)

1. Degradation of fish and wildlife populations
2. Fish tumours or other deformities
3. Bird or animal deformities or reproduction problems
4. Degradation of benthos
5. Degradation of phytoplankton and zooplankton populations
6. Eutrophication or undesirable algae
7. Loss of fish and wildlife habitat

Economy (4)

1. Tainting of fish and wildlife flavour
2. Restrictions on dredging activities
3. Degradation of aesthetics
4. Added costs to agriculture or industry

Human health (3)

1. Restrictions on fish and wildlife consumption
2. Restrictions on drinking water consumption, or taste and odour problems
3. Beach closing

[1] For more information on the beneficial use impairments, please see: Environment and Climate Change Canada (2013) 2012 Great Lakes Water Quality Agreement: annex 1. Retrieved on March 22, 2021.

About the indicator

What the indicator measures

This indicator assesses progress towards the restoration of Canada's 12 Areas of Concern and the 5 Areas of Concern shared with the United States.

An Area of Concern is a region in the Great Lakes that has experienced a high level of environmental damage from human activity. There are 14 beneficial uses that are considered in order to decide whether an area should be classified as an Area of Concern. Beneficial uses describe how an aquatic ecosystem benefits the economy, human health and the environment: they are the ecological services that are available to the population and the environment when the ecosystem is healthy (not impaired). An Impaired beneficial use has experienced enough changes to the chemical, physical or biological integrity of the area to restrict human use or to restrict the area's ability to support plants and animals.

The status of a beneficial use is determined by monitoring and conducting scientific studies in the Area of Concern. The study results are compared to the findings for reference sites and targets listed in the site's remedial action plan and other update reports.

Why this indicator is important

This indicator is used to provide information about the state of the Great Lakes and the Canadian environment. It tracks the work done to repair the environment at 17 Areas of Concern in Canada. In these areas, the degraded environment has disrupted fisheries, wildlife, tourism, recreation and/or agriculture.

Pristine lakes and rivers

This indicator supports the measurement of progress towards the following 2019 to 2022 Federal Sustainable Development Strategy long-term goal: Clean and healthy lakes and rivers support economic prosperity and the well-being of Canadians.

It is used to assess progress towards the short-term milestone: By the end of 2019, complete restoration actions that will assist in delisting 5 Canadian Great Lakes Areas of Concern. In the remaining 9 Areas of Concern, increase the number of restored beneficial uses from 18 in 2014 to 30 in 2019.[2]

In addition, the indicator contributes to the Sustainable Development Goals of the 2030 Agenda for Sustainable Development. It is linked to the 2030 Agenda's Goal 6: Clean water and sanitation and Target 6.6: "By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes."

Finally, the indicator assesses progress towards the goals of the Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2021. Specifically, it measures progress towards restoring the remaining impaired beneficial uses in the Canadian Great Lakes Areas of Concern (Thunder Bay, Nipigon Bay, Jackfish Bay, Peninsula Harbour, St. Marys River, Spanish River, St. Clair River, Detroit River, Niagara River, Bay of Quinte, St. Lawrence River, Hamilton Harbour, Toronto and Region, and Port Hope Harbour).

Related indicators

The Phosphorus levels in the offshore waters of the Great Lakes indicator reports total phosphorus levels in the offshore waters of the 4 Canadian Great Lakes.

The Water quality in Canadian rivers indicators provide a measure of the ability of river water across Canada to support plants and animals.

[2] The short-term milestone does not include the 3 Areas of Concern that have been fully restored and delisted: Collingwood Harbour (1994), Severn Sound (2002) and Wheatley Harbour (2010)

Data sources and methods

Data sources

Environment and Climate Change Canada's Great Lakes Areas of Concern program tracks the status of all beneficial uses in Canada's 17 Areas of Concern (including the 5 shared with the United States). This information is developed as Canada exercises its responsibility under the Canada-United States Great Lakes Water Quality Agreement to remove a beneficial use impairment designation when the established criteria have been met. The most recent data available for each Area of Concern are used to calculate this indicator.

More information

The 2021 data were obtained from Environment and Climate Change Canada's Areas of Concern Office. Progress reports summarizing the status of all beneficial uses for all Canadian Areas of Concern have been compiled every 1 to 3 years since 2012. Prior to 2012, beneficial use classifications were taken from remedial action plans and update reports.

Data coverage for this indicator begins with Severn Sound's Stage 1 report published in 1988 and includes data up to March 31, 2021. The other Areas of Concern released their Stage 1 reports between 1989 and 1993, with the majority being released in 1991. Wheatley Harbour released a combined Stage 1 and 2 report in 1998.

The Port Hope Harbour Area of Concern is being restored through the Port Hope Area Initiative, launched in 2001. Canadian Nuclear Laboratories is implementing the Port Hope Project on behalf of Atomic Energy of Canada Limited, a federal Crown corporation because of the nature and scope of the contamination at this site. Only the progress reports compiled since 2003 were considered for Port Hope Harbour.

Description of the Areas of Concern process

The 1987 revision of the Canada-United States Great Lakes Water Quality Agreement identified 43 Areas of Concern in Canadian and American waters of the Great Lakes. All Canadian Areas of Concern, have a remedial action plan to guide restoration and protection efforts targeting specific beneficial uses.[3]

In the former process, under the 1987 Protocol to the Canada-United States Great Lakes Water Quality Agreement, remedial action plans were developed and implemented in 3 stages.

- Stage 1 identified which of 14 beneficial uses were classified as Impaired or Not impaired, as well as the sources and causes of the problem
- Stage 2 established the goals, objectives and actions required to restore the ecosystem to a healthy state
- Stage 3 documented the successful restoration of the Area of Concern as measured against the objectives (delisting criteria) outlined in the Stage 2 Remedial Action Plan report

When the beneficial uses were considered Not Impaired, and Stage 3 was complete, the Area of Concern was declared Restored and officially “delisted”. Typically, Canada waited to change the status of beneficial uses to Not Impaired in bunches (for example, with the release of a stage update report) or en masse (for example, with the completion of Stage 3).

Under the 2012 Canada-United States Great Lakes Water Quality Agreement, the process was modified and remedial action plans are now periodically updated to reflect restoration progress. That is, the Parties will not wait to change the status of beneficial uses en masse. Canada:

- will remove an Impaired beneficial use designation when established criteria have been met

[3] For more information on what the beneficial uses are, please see: Environment and Climate Change Canada (2013) 2012 Great Lakes Water Quality Agreement: annex 1. Retrieved on March 22, 2021.

- may elect to identify an Area of Concern as an Area of Concern in Recovery when all actions identified in a remedial action plan have been implemented and monitoring shows recovery is progressing as anticipated
- will remove the Area of Concern or Area of Concern in Recovery designation when environmental monitoring confirms beneficial use restoration criteria have been met

An Area of Concern in Recovery is an area originally identified as an Area of Concern where, on the basis of community and government consensus, all scientifically-feasible and economically-reasonable actions have been implemented and additional time is required for the environment to recover.

The reports prepared for each Area of Concern and additional information can be found at Great Lakes: Areas of Concern.

Methods

The number of beneficial uses listed as Impaired was counted for all Stage 1 reports and all update reports conducted up to the end of March 2021. The results include the beneficial uses for Canada's 12 Areas of Concern, covering the 4 Canadian Great Lakes, as well as the 5 Areas of Concern shared with the United States in their connecting channels.

An Impaired beneficial use can be classified as Restored if all delisting requirements for that beneficial use impairment have been met. Criteria for a beneficial use impairment are established in consideration of conditions that can be eventually achieved on a lake-wide basis.

Caveats and limitations

This indicator does not show the continuous nature of the rehabilitation process for each Area of Concern because the status for each beneficial use impairment can only change when new reports are published and the party (Canada) has confirmed the status as per the provisions in Annex 1 of the Great Lakes Water Quality Agreement. With progress reports being updated annually, the staggered change is less evident.

Port Hope Harbour follows a separate program, the Port Hope Area Initiative that is being implemented by Canadian Nuclear Laboratories on behalf of Atomic Energy of Canada Limited.

Resources

References

Environment and Climate Change Canada (2013) 2012 Great Lakes Water Quality Agreement: annex 1. Retrieved on March 22, 2021.

Related information

Great Lakes: Areas of Concern

Canada-United States Great Lakes water quality agreement, 2012

Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health, 2021

2019 Progress Report of the Parties

Annex

Annex A. Data tables for the figures presented in this document

Table A.1. Data for Figure 1. Status of Canada's 17 Great Lakes Areas of Concern, 2021

Lake	Area of Concern	Assessment year	Status as of March 31, 2021
Superior	Thunder Bay	1991, 2012	Area of Concern
Superior	Nipigon Bay	1991	Area of Concern
Superior	Jackfish Bay	1991	Area of Concern in Recovery
Superior	Peninsula Harbour	1991, 2012	Area of Concern
	St. Marys River	1992	Area of Concern
Huron	Spanish Harbour	1993	Area of Concern in Recovery
Huron	Severn Sound	1988	Restored Area of Concern
Huron	Collingwood Harbour	1989	Restored Area of Concern
	St. Clair River	1991	Area of Concern
	Detroit River	1991, 1998	Area of Concern
Erie	Wheatley Harbour	1998	Restored Area of Concern
	Niagara River	1993	Area of Concern
Ontario	Hamilton Harbour	1992	Area of Concern
Ontario	Toronto and Region	1989	Area of Concern
Ontario	Port Hope Harbour	2003	Area of Concern
Ontario	Bay of Quinte	1990	Area of Concern
Ontario	St. Lawrence	1992	Area of Concern

Note: Assessment reports were published between 1988 and 1993, in what were titled *Stage 1 Remedial Action Plan reports*), with the exception of Wheatley Harbour and Port Hope Harbour, which were produced in 1998 and 2003, respectively. Many of these included undefined status for certain beneficial uses, and they "required further assessment". Upon further assessment over subsequence years, what had been undefined was clarified in Remedial Action Plan status update reports. In these cases, a second year is noted as assessment year.
Source: Environment and Climate Change Canada (2021) Great Lakes Areas of Concern Office.

Table A. 2. Data for Figure 2. Progress on Canada's 17 Great Lakes Areas of Concern, 1987 to 2021

Lake	Area of Concern	Initial assessment (number of beneficial use impaired)	2021 assessment year: total impaired (number of beneficial use impaired by category of impact)	2021 impaired beneficial use	2021 assessment year: total restored (number of beneficial use restored by category of impact)	2021 restored beneficial use	Year and number of restored beneficial use	Beneficial use not impaired
Superior	Thunder Bay	7	Environment: 3 Human health: 1	• Degradation of fish and wildlife populations • Degradation of benthos • Loss of fish and wildlife habitat • Beach closing	Economy: 3	• Restrictions on dredging activities • Degradation of aesthetics • Added costs to agriculture or industry	2004: 1 2012: 1 2019: 1	7
Superior	Nipigon Bay[A]	7	No impaired beneficial use	n/a	Environment: 4 Economy: 3	• Degradation of fish and wildlife populations • Degradation of benthos • Eutrophication or undesirable algae • Loss of fish and wildlife habitat • Tainting of fish and wildlife flavor • Restrictions on dredging activities • Degradation of aesthetics	1995: 2 2016: 5	7
Superior	Jackfish Bay[B]	5	Environment: 3	• Degradation of fish and wildlife populations • Degradation of benthos	Environment: 1 Economy: 1	• Fish tumours or other deformities • Restrictions on dredging activities	1998: 1 2010: 1	9

Lake	Area of Concern	Initial assessment (number of beneficial use impaired)	2021 assessment year: total impaired (number of beneficial use impaired by category of impact)	2021 impaired beneficial use	2021 assessment year: total restored (number of beneficial use restored by category of impact)	2021 restored beneficial use	Year and number of restored beneficial use	Beneficial use not impaired
				• Loss of fish and wildlife habitat				
Superior	Peninsula Harbour	3	Environment: 1 Human health: 1	• Degradation of benthos • Restrictions on fish and wildlife consumption	Economy: 1	• Restrictions on dredging activities	2012: 1	11
	St. Marys River	9	Environment: 4 Human health: 1 Economy: 1	• Degradation of fish and wildlife populations • Fish tumours or other deformities • Degradation of benthos • Loss of fish and wildlife habitat • Restrictions on fish and wildlife consumption • Restrictions on dredging activities	Environment: 1 Human health: 1 Economy: 1	• Eutrophication or undesirable algae • Beach closing • Degradation of aesthetics	2018: 3	5
Huron	Spanish Harbour[B]	6	Environment: 1 Human health: 1	• Degradation of benthos • Restrictions on fish and wildlife consumption	Environment: 1 Human health: 1 Economy: 2	• Degradation of fish and wildlife populations • Beach closing • Restrictions on dredging activities • Added costs to agriculture or industry	1999: 3 2020: 1	8

Lake	Area of Concern	Initial assessment (number of beneficial use impaired)	2021 assessment year: total impaired (number of beneficial use impaired by category of impact)	2021 impaired beneficial use	2021 assessment year: total restored (number of beneficial use restored by category of impact)	2021 restored beneficial use	Year and number of restored beneficial use	Beneficial use not impaired
Huron	Severn Sound[C]	5	No impaired beneficial use	n/a	Environment: 3 Human health: 1 Economy: 1	• Degradation of fish and wildlife populations • Eutrophication or undesirable algae • Loss of fish and wildlife habitat • Restrictions on fish and wildlife consumption • Restrictions on dredging activities	2002: 5	9
Huron	Collingwood Harbour[C]	9	No impaired beneficial use	n/a	Environment: 5 Human health: 2 Economy: 2	• Degradation of fish and wildlife populations • Bird or animal deformities or reproduction problem • Degradation of benthos • Eutrophication or undesirable algae • Degradation of phytoplankton and zooplankton populations • Restrictions on fish and wildlife consumption • Degradation of aesthetics • Beach closing	1994: 9	5

Lake	Area of Concern	Initial assessment (number of beneficial use impaired)	2021 assessment year: total impaired (number of beneficial use impaired by category of impact)	2021 impaired beneficial use	2021 assessment year: total restored (number of beneficial use restored by category of impact)	2021 restored beneficial use	Year and number of restored beneficial use	Beneficial use not impaired
						• Restrictions on dredging activities		
	St. Clair River	8	Environment: 2 Human health: 2	• Degradation of benthos • Loss of fish and wildlife habitat • Restrictions on fish and wildlife consumption • Restrictions on drinking water consumption, or taste and odour problems	Human health: 1 Economy: 3	• Beach closing • Restrictions on dredging activities • Degradation of aesthetics • Added costs to agriculture or industry	2012: 1 2016: 1 2018: 2	6
	Detroit River	12	Environment: 3 Human health: 1	• Degradation of fish and wildlife populations • Bird or animal deformities or reproduction problems • Loss of fish and wildlife habitat • Restrictions on fish and wildlife consumption	Environment: 2 Human health: 2 Economy: 4	• Fish tumours or other deformities • Degradation of benthos • Restrictions on drinking water consumption, or taste and odour problems • Beach closing • Tainting of fish and wildlife flavor • Restrictions on dredging activities • Degradation of aesthetics	2010: 2 2014: 1 2016: 2 2019: 1 2020: 2	2

Lake	Area of Concern	Initial assessment (number of beneficial use impaired)	2021 assessment year: total impaired (number of beneficial use impaired by category of impact)	2021 impaired beneficial use	2021 assessment year: total restored (number of beneficial use restored by category of impact)	2021 restored beneficial use	Year and number of restored beneficial use	Beneficial use not impaired
						• Added costs to agriculture or industry		
Erie	Wheatley Harbour[C]	5	No impaired beneficial use	n/a	Environment: 3 Human health: 1 Economy: 1	• Degradation of fish and wildlife populations • Eutrophication or undesirable algae • Loss of fish and wildlife habitat • Restrictions on fish and wildlife consumption • Restrictions on dredging activities	2010: 5	9
	Niagara River	8	Environment: 3 Human health: 2	• Degradation of fish and wildlife populations • Degradation of benthos • Loss of fish and wildlife habitat • Restrictions on fish and wildlife consumption • Beach closing	Environment: 2 Economy: 1	• Bird or animal deformities or reproduction problems • Eutrophication or undesirable algae • Restrictions on dredging activities	2009: 2 2019: 1	6
Ontario	Hamilton Harbour	8	Environment: 4 Human health: 2 Economy: 2	• Degradation of fish and wildlife populations • Degradation of benthos	No restored beneficial use	n/a	No restored beneficial use	6

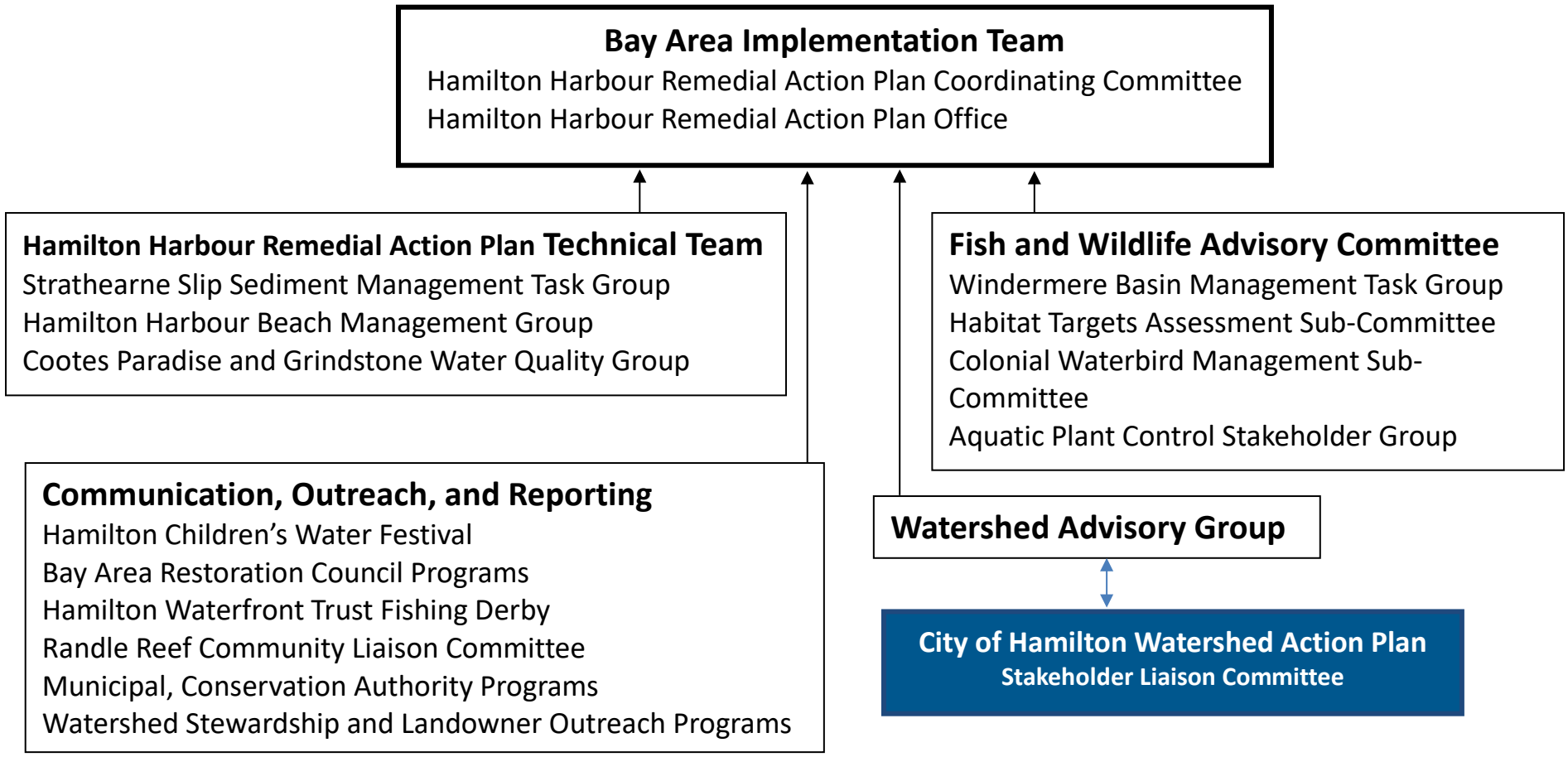
Lake	Area of Concern	Initial assessment (number of beneficial use impaired)	2021 assessment year: total impaired (number of beneficial use impaired by category of impact)	2021 impaired beneficial use	2021 assessment year: total restored (number of beneficial use restored by category of impact)	2021 restored beneficial use	Year and number of restored beneficial use	Beneficial use not impaired
				• Eutrophication or undesirable algae • Loss of fish and wildlife habitat • Restrictions on fish and wildlife consumption • Beach closing • Restrictions on dredging activities • Degradation of aesthetics				
Ontario	Toronto and Region	8	Environment: 3 Human health: 2	• Degradation of fish and wildlife populations • Eutrophication or undesirable algae • Loss of fish and wildlife habitat • Restrictions on fish and wildlife consumption • Beach closing	Environment: 1 Economy: 2	• Degradation of benthos • Restrictions on dredging activities • Degradation of aesthetics	2016: 2 2020: 1	6
Ontario	Port Hope Harbour	1	Economy: 1	• Restrictions on dredging activities	No restored beneficial use	n/a	No restored beneficial use	13
Ontario	Bay of Quinte	10	Environment: 2 Human health: 1 Economy: 1	• Eutrophication or undesirable algae • Degradation of phytoplankton and zooplankton populations	Environment: 3 Human health: 2 Economy: 1	• Degradation of fish and wildlife populations • Loss of fish and wildlife habitat	2017: 1 2018: 3 2019: 1 2020: 1	4

Lake	Area of Concern	Initial assessment (number of beneficial use impaired)	2021 assessment year: total impaired (number of beneficial use impaired by category of impact)	2021 impaired beneficial use	2021 assessment year: total restored (number of beneficial use restored by category of impact)	2021 restored beneficial use	Year and number of restored beneficial use	Beneficial use not impaired
				• Restrictions on fish and wildlife consumption • Degradation of aesthetics		• Degradation of benthos • Restrictions on drinking water consumption, or taste and odour problems • Beach closing • Restrictions on dredging activities		
Ontario	St. Lawrence	10	Environment: 3 Human health: 2	• Degradation of fish and wildlife populations • Eutrophication or undesirable algae • Loss of fish and wildlife habitat • Restrictions on fish and wildlife consumption • Beach closing	Environment: 1 Human health: 1 Economy: 3	• Degradation of benthos • Restrictions on drinking water consumption, or taste and odour problems • Restrictions on dredging activities • Degradation of aesthetics • Added costs to agriculture or industry	1997: 3 2007: 2	4
Total	n/a	121	53	n/a	68	n/a	68	117

Note: n/a = not applicable. Empty cells indicate a Great Lake tributary river. The number of beneficial uses that are Impaired for 2021 is based on progress reported as of March 31, 2021. [A] All impaired beneficial uses have been restored in the Area of Concern; however, it cannot be formally designated as a Restored Area of Concern until the final approval of the completion report. [B] Area of Concern in Recovery. [C] Restored Area of Concern.
Source: Environment and Climate Change Canada (2021) Great Lakes Areas of Concern Office.

Additional information can be obtained at:

Environment and Climate Change Canada
Public Inquiries Centre
12th Floor Fontaine Building
200 Sacré-Coeur Blvd
Gatineau QC K1A 0H3
Telephone: 1-800-668-6767 (in Canada only) or 819-938-3860
Fax: 819-938-3318
Email: enviroinfo@ec.gc.ca


Bay Area Implementation Team
Hamilton Harbour Remedial Action Plan Coordinating Committee
Hamilton Harbour Remedial Action Plan Office
Hamilton Harbour Remedial Action Plan Technical Team
Strathearne Slip Sediment Management Task Group
Hamilton Harbour Beach Management Group
Cootes Paradise and Grindstone Water Quality Group
Fish and Wildlife Advisory Committee
Windermere Basin Management Task Group
Habitat Targets Assessment Sub-Committee
Colonial Waterbird Management Sub-Committee
Aquatic Plant Control Stakeholder Group
Communication, Outreach, and Reporting
Hamilton Children's Water Festival
Bay Area Restoration Council Programs
Hamilton Waterfront Trust Fishing Derby
Randle Reef Community Liaison Committee
Municipal, Conservation Authority Programs
Watershed Stewardship and Landowner Outreach Programs
Watershed Advisory Group
City of Hamilton Watershed Action Plan
Stakeholder Liaison Committee

Hamilton

CITY OF HAMILTON
WATERSHED ACTION PLAN UPDATE

June 28, 2023

OBJECTIVE

To plan, develop and execute a Watershed Action Plan for all activities within the care and control of the City of Hamilton

The resulting implementation strategy will be developed in accordance with City and Provincial guidelines, policies, and regulations.

DRIVERS

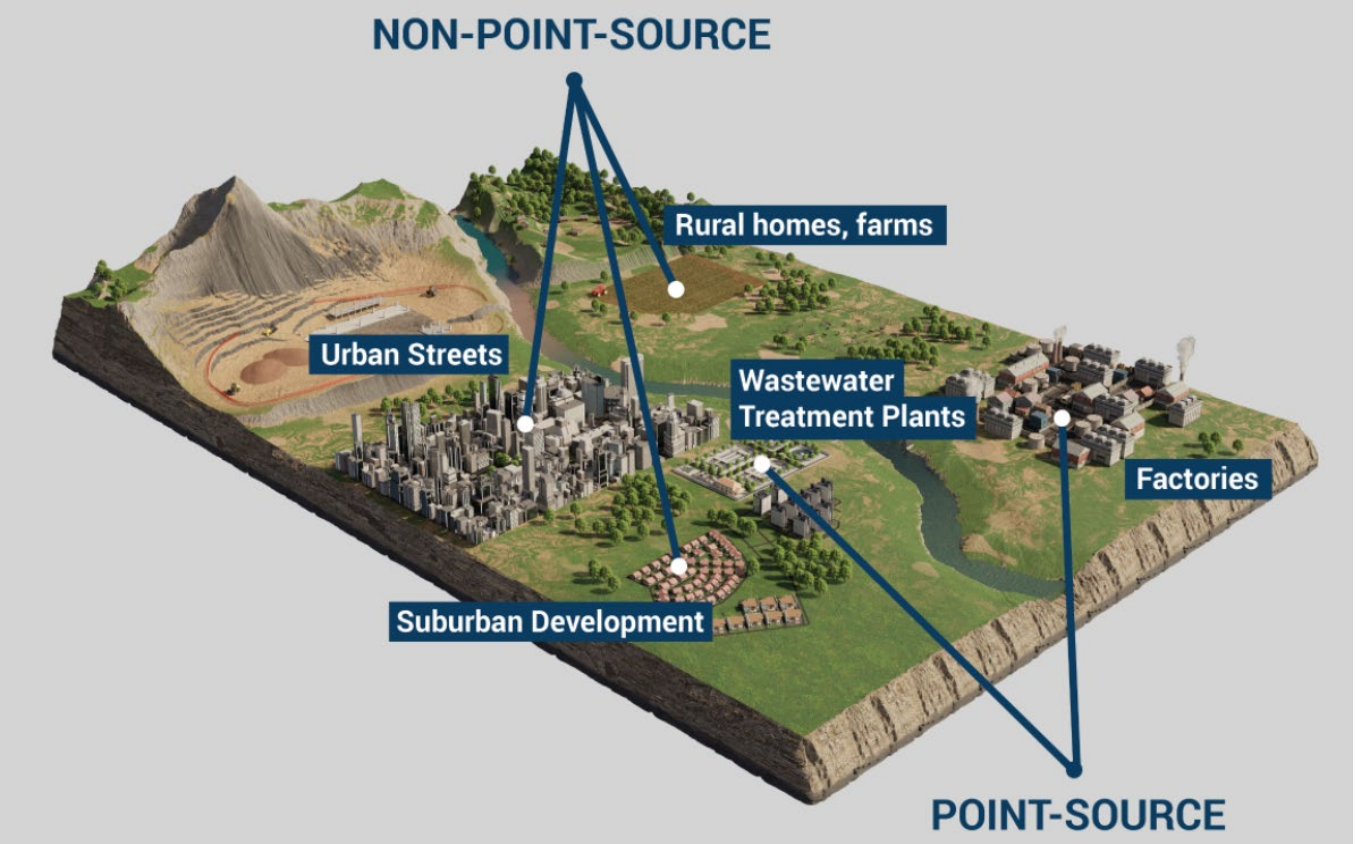
1. Council Motion - Item 8 (m) of the November 20, 2019, General Issues Committee (Report 19-024) “That the City recommit to the water quality objectives in the Remedial Action Plan process”.

2. Chedoke Water Quality Improvement Framework Study – Report recommended the creation of an advisory committee.

3. Senior Leadership Team Direction – to create a touchpoint for the Hamilton Harbour Remedial Action Plan and conduit to the Senior Leadership Team and City Council.

STAKEHOLDER LIAISON COMMITTEE

Working together, this group will help to advance City specific watershed actions with the common goal of improving our watersheds and Hamilton Harbour conditions



CONSULTATION & ENGAGEMENT PARTNERS

Stakeholder Liaison Committee

- City of Hamilton
  - Public Works
  - Healthy & Safe Communities
  - Planning & Economic Development
- Conservation Halton
- Royal Botanical Gardens
- Hamilton Conservation Authority
- Grand River Conservation Authority
- Niagara Peninsula Conservation Authority

Hamilton Harbour Remedial Action Plan Watershed Advisory Group

- Bay Area Restoration Council
- Harbour Remedial Action Plan Office
- Environment Hamilton
- City of Burlington
- City of Hamilton
- Conservation Halton
- The Regional Municipality of Halton
- Hamilton Conservation Authority
- Royal Botanical Gardens
- Environment and Climate Change Canada
- Ministry of the Environment, Conservation and Parks

CONSULTATION & ENGAGEMENT PARTNERS

Academic Community

- McMaster University
- Redeemer College University

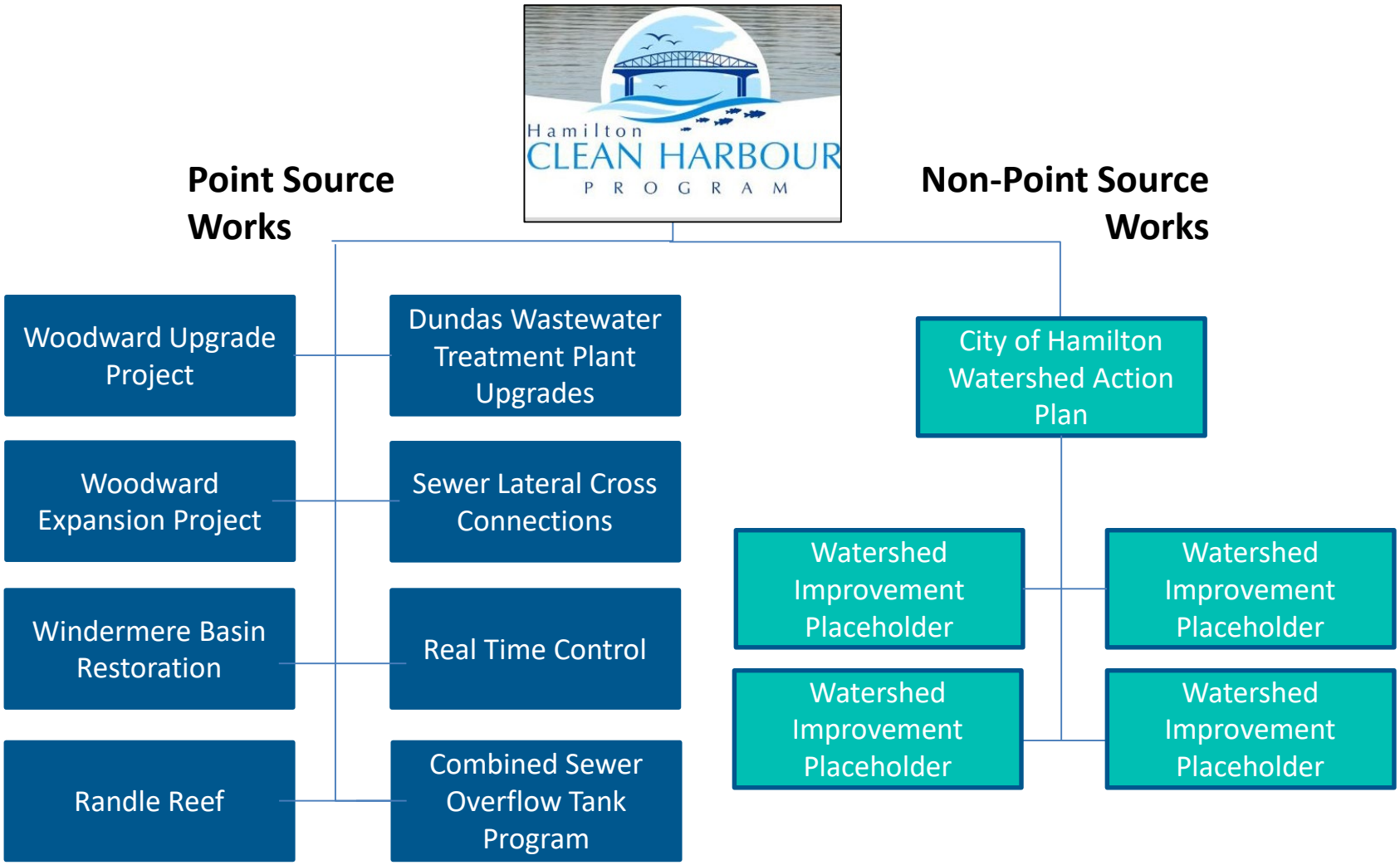
Non-Government Organization

- Green Venture

Area Stakeholders

- Indigenous Nations and First Peoples
- Ontario Ministry of Transportation
- Fisheries and Oceans Canada

WHERE IT FITS WITHIN THE CITY



WHERE IT FITS WITHIN THE HAMILTON HARBOUR REMEDIAL ACTION PLAN

Bay Area Implementation Team
Hamilton Harbour Remedial Action Plan Coordinating Committee
Hamilton Harbour Remedial Action Plan Office

Technical Team
Strathearne Slip Sediment Management Task Group
Hamilton Harbour Beach Management Group
Cootes Paradise and Grindstone Water Quality Group

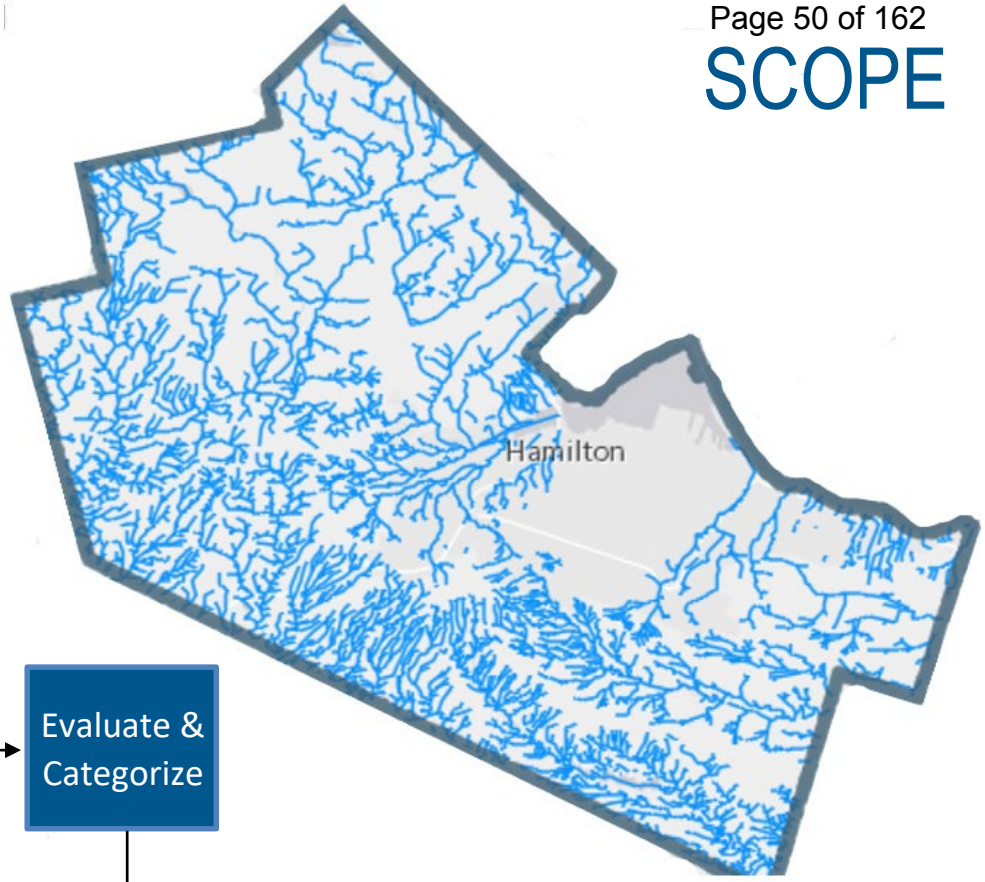
Fish and Wildlife Advisory Committee
Windermere Basin Management Task Group
Habitat Targets Assessment Sub-Committee
Colonial Waterbird Management Sub-Committee
Aquatic Plant Control Stakeholder Group

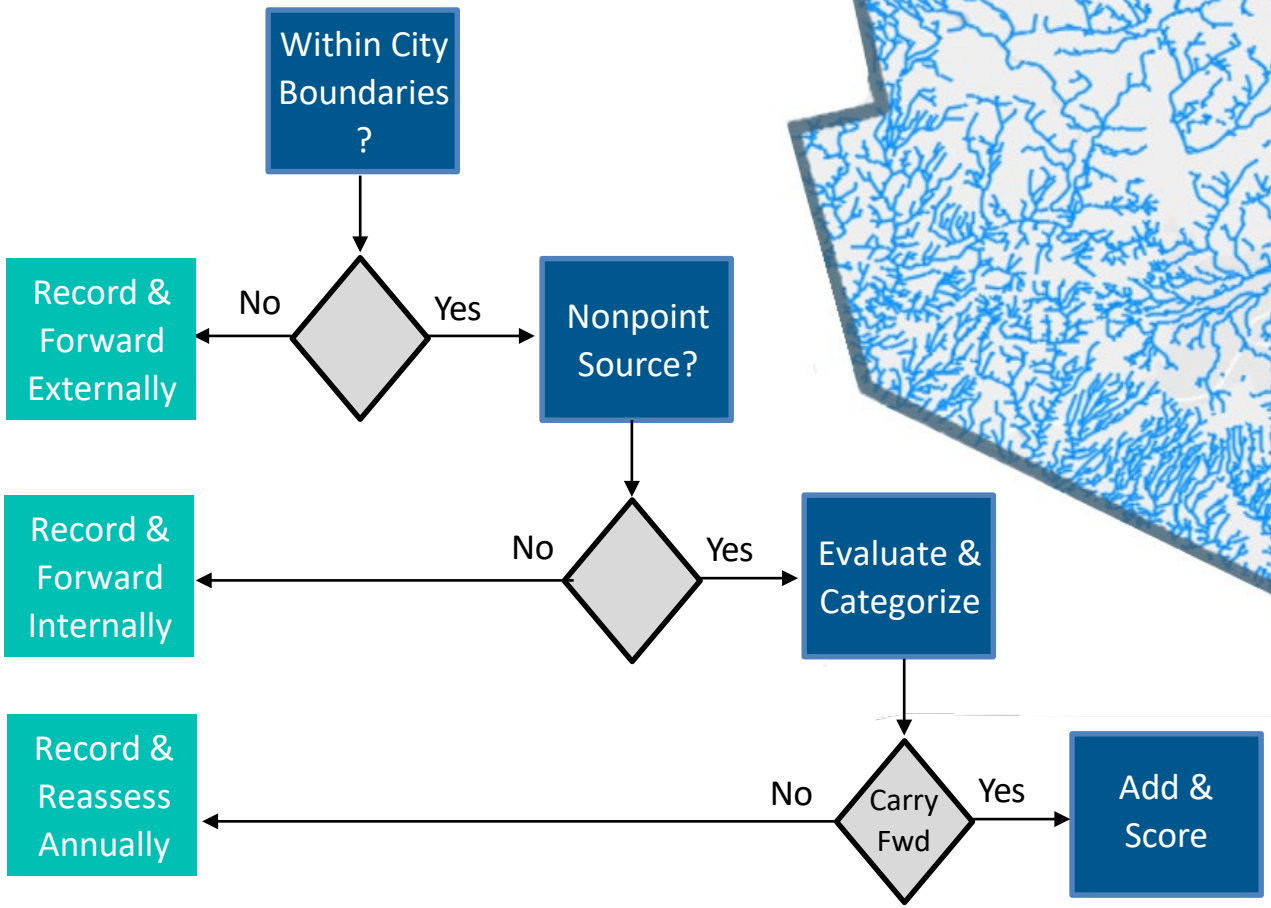
Communication, Outreach, and Reporting
Hamilton Children's Water Festival
Bay Area Restoration Council Programs
Hamilton Waterfront Trust Fishing Derby
Randle Reef Community Liaison Committee
Municipal, Conservation Authority Programs
Watershed Stewardship and Landowner Outreach Programs

Watershed Advisory Group

City of Hamilton Watershed Action Plan

SCOPE


Hamilton


Within City Boundaries ?
No
Yes
Record & Forward Externally
Nonpoint Source?
No
Yes
Record & Forward Internally
Evaluate & Categorize
No
Carry Fwd
Yes
Record & Reassess Annually
Add & Score

DELIVERABLES

Studies / Reports

- Natural Assets Initiative (Grindstone Creek)
- Chedoke Creek Water Quality Study
- Hamilton Harbour Remedial Action Plan Reports

Supporting Data

- Surface Water Quality Program
- Conservation Authority Report Cards

Capital Projects	Policy/Program	Operations & Maintenance
Dredging Works	Community Outreach	Catch Basin Cleaning
Floating Treatment Wetlands	Low Impact Development Policies	Salt/Snow Mgmt
Golf Course Run-off Mgmt	Stormwater User Rate	Enhanced Street Sweeping
Sewer Separation	Stormwater Mgmt Policies	Facility Inspection & Repair

Watershed Improvement Examples

Review policies to protect existing natural assets

EXAMPLE

Ensure that future land use change considers the value of existing natural assets and their role in service delivery.

✓ Within City Boundaries
- Yes, City wide action

✓ Nonpoint Source
- Yes, Natural assets mitigate stormwater run-off

✓ Evaluate & Categorize
- Policy
- Planning & Economic Development
- No resources needed
- Mid-term (2-5 years)

✓ Add & Score
- Added to action list and scored

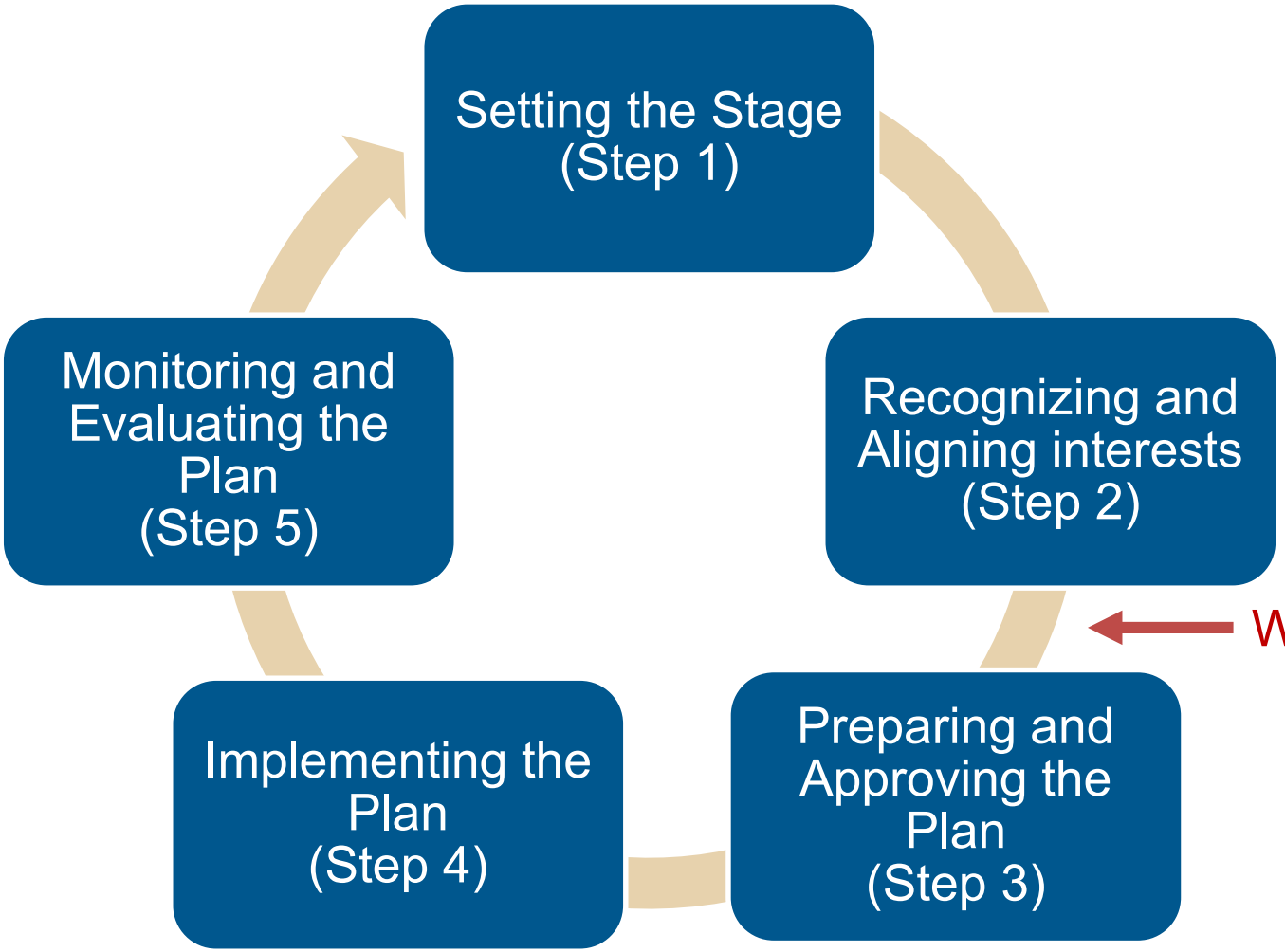
Review policies to protect existing natural assets

EXAMPLE

Ensure that future land use change considers the value of existing natural assets and their role in service delivery.

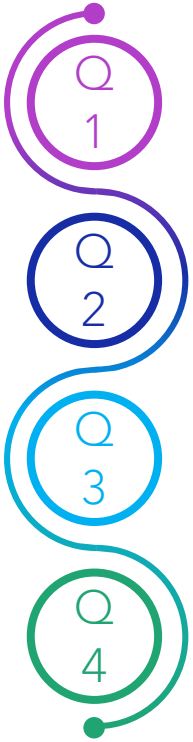
Scoring Sheet						NA-1	
Evaluation Criteria	**Poor = 1**	**Low = 4**	**Moderate = 7**	**High = 10**	**% Weight**	**Score**	**Final Score**
			Environmental				
Pollutant Removal	Negligible effect on pollutant removal / water quality	Some pollutant / water quality improvement, difficult to quantify	Moderate but measurable pollutant / water quality improvement expected	High, measurable pollutant / water quality improvement expected	1.5	7	10.5
Climate Action Strategy	Does not support Climate Change Mitigation / Adaptation	Somewhat supports Climate Change Mitigation / Adaptation	Mostly supports Climate Change Mitigation / Adaptation	Able to support Climate Change Mitigation / Adaptation	1.3	10	13
			Economic				
Implementation Costs	Capital costs are very high relative to anticipated project benefits	Capital costs are moderately high vs. anticipated project benefits	Capital costs are moderately low vs. anticipated project benefits	Capital costs are low relative to benefits (i.e., excellent cost/benefit ratio)	1.1	9	9.9
Ongoing Costs	Operating & Maintenance costs are very high relative to benefits	Operating & Maintenance costs are moderately high vs. benefits	Operating & Maintenance costs are moderately low vs. benefits	Operating & Maintenance costs are low relative to anticipated project benefits	1.1	9	9.9
			Social				
Stakeholder Beneficiary	No multi stakeholder beneficiary	Minor multi stakeholder beneficiary benefits (helps 1-2 partners)	Moderate multi stakeholder beneficiary benefits (helps 3-4 partners)	Significant multi stakeholder beneficiary benefits (helps >5 partners)	1	8	8
Ease of Implementation	Likely obtrusive; noise, odor, dust, traffic disruptions and/or complaints are likely	Moderate expectations for noise, odor, dust, traffic disruptions and/or complaints	Some/few disruptions and/or complaints are expected	Low-profile; low/no odors, noise, dust, traffic disruptions and/or complaints expected	1	10	10
						Total	61.3

NEXT STEPS


Setting the Stage (Step 1)
Recognizing and Aligning interests (Step 2)
We Are Here
Preparing and Approving the Plan (Step 3)
Implementing the Plan (Step 4)
Monitoring and Evaluating the Plan (Step 5)

ROADMAP

2022



MILESTONE

- First Committee Meeting
- 1st Information Report to Council

MILESTONE

- Second Committee Meeting
- Inventory of Actions Development

MILESTONE

- Third Committee Meeting

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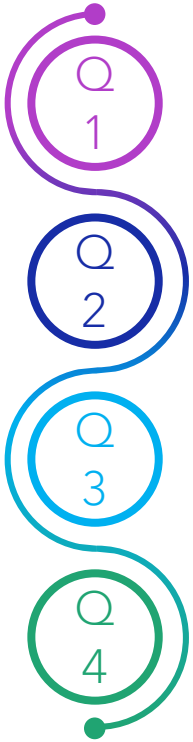
- Fourth Committee Meeting
- Scoring Assessment & Gap Analysis

2023



MILESTONE

- Fifth Committee Meeting
- Workshops

MILESTONE

- Sixth Committee Meeting
- 2nd Information Report to Council

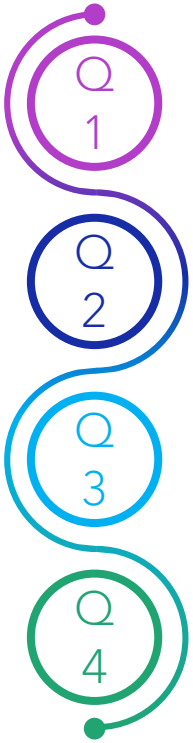
MILESTONE

- Seventh Committee Meeting
- Stakeholder Comments Addressed

MILESTONE

- Eighth Committee Meeting
- Engage Hamilton

2024



MILESTONE

- Ninth Committee Meeting
- Consultant review

MILESTONE

- Tenth Committee Meeting
- Finalize Action Plan

MILESTONE

- Eleventh Committee Meeting
- Recommendation Report to Council

MILESTONE

- Financing Strategy Outlined in the 2025 Rates Budget Report

Hamilton

THANK YOU

CITY OF HAMILTON
CORPORATE SERVICES DEPARTMENT
Financial Planning, Administration and Policy Division

TO:	Mayor and Members General Issues Committee
COMMITTEE DATE:	June 28, 2023
SUBJECT/REPORT NO:	Stormwater Funding Review (FCS22043(b)) (City Wide) (Outstanding Business List Item)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Katie Black (905) 546-2424 Ext. 6415 John Savoia (905) 546-2424 Ext. 7298
SUBMITTED BY: **SIGNATURE:**	Mike Zegarac General Manager, Finance and Corporate Services Corporate Services Department

RECOMMENDATION(S)

(a) That the Stormwater Rate Structure as outlined in Appendix “A” to Report FCS22043(b) be approved effective September 1, 2025;

(b) That staff develop the 2025-2034 Rate Supported Budget incorporating the Stormwater Rate Structure;

(c) That property tax levy funding related to stormwater expenditures to be funded by the new stormwater rate structure, be transferred to the Climate Change Reserve and applied to climate change / environmental initiatives in conjunction with the introduction of the Stormwater Rate Structure;

(d) That staffing requirements for the Stormwater Rate Structure once implemented be referred to the 2025 Rate Supported Budget;

(e) That the City Solicitor be authorized and directed to prepare all necessary by-laws, for Council approval, in order to implement Recommendations (a) through (d) of Report FCS22043(b);

(f) That staff develop and report back regarding the implementation of a Stormwater Incentives Program;

(g) That staff develop and implement a communication strategy to advise property owners of the Stormwater Rate Structure to be implemented;

(h) That the single source procurement of AECOM Canada Ltd as external consultants for the Stormwater Funding implementation, pursuant to Procurement Policy #11 – Non-competitive Procurements be approved;

(i) That the General Manager, Finance and Corporate Services, be authorized to negotiate, enter into and execute a contract and any ancillary documents required to procure AECOM Canada Ltd as the consultant to support the implementation of the Stormwater Rate Structure in a form satisfactory to the City Solicitor;

(j) That the implementation of the Stormwater Rate Structure with an upset limit of $500,000, be funded from the Stormwater Reserve (108010);

(k) That the subject matter respecting an assessment of steps and resources required to implement a dedicated user fee for stormwater, be identified as complete and removed from the General Issues Committee Outstanding Business List.

EXECUTIVE SUMMARY

At its meeting January 25, 2023, Council approved the following direction with respect to the Stormwater Funding Review (Review):

(a) That staff be directed to report back to the General Issues Committee (GIC) in the second quarter of 2023 on the steps and resources required to implement a dedicated user fee for stormwater services, with an implementation date no later than January 2025; and

(b) That, in addition to the guiding principles that may be adopted by Council through Report FCS22043(a), staff be directed to include all aspects of the City's stormwater services to be funded from the revenues associated with this dedicated user fee.

The purpose of Report FCS22043(b) is to provide the findings of the Review and to present a recommended stormwater rate structure to be implemented as of September 1, 2025.

The City of Hamilton's stormwater management program helps protect the public, private property, infrastructure and the environment from flooding, erosion and poor surface water quality. Currently, the City primarily funds its stormwater management program through its water and wastewater utility revenues. That means that properties contribute to stormwater services based on the amount of municipal potable water that is used.

The City is investigating the viability of implementing a more equitable stormwater funding model. This will ensure the City adheres to Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure, which requires municipalities to have sustainable funding mechanisms for key assets.

Guiding Principles, approved by GIC in November 2022, have formed the foundation of the Review. Table 3 of Report FCS22043(b) found in the Historical Background section provides a brief description of what the principles are intended to achieve. A successful stormwater rate structure will result when an appropriate balance is achieved between the various principles being considered. Under a roster assignment, AECOM Canada Ltd (AECOM) has been engaged to conduct the Review.

The Review entailed an assessment of Hamilton's current stormwater funding model and a variety of stormwater funding structures utilized by different municipalities in Ontario. The various funding models have been assessed for alignment against the Guiding Principles (refer to AECOM's Review report attached as Appendix "C" to Report FCS22043(b)).

Table 1 of Report FCS22043(b) provides the timeline for the Review that, based on staff recommendations, would culminate with the implementation of a stormwater rate structure in September 2025.

Table 1: Review Process Steps Timeline

Phase	Timeline	Process Step
Phase One	September 2022	Retained AECOM Canada Ltd (AECOM) through the use of the Roster and City Policy # 9 – Consulting and Professional Services to support Review
	October 2022	Developed Guiding Principles for Council's consideration
	November 30, 2022	Report to GIC obtained approval of Guiding Principles to be used to evaluate stormwater funding models and develop alternative stormwater rate structures for Council's consideration
	Dec 2022 - Jan 2023	AECOM conducted Stormwater Funding Review
	February 2023	Council Education Sessions – provided information related to how the City's stormwater funding structure compares with other municipalities and best practices
	May 2023	Provided information presentations to Environment Hamilton and the Hamilton Industrial Environmental Association
	Feb – May 2023	Incorporated feedback from Council sessions to develop a recommended rate structure
	June 28, 2023	Report to GIC with recommended stormwater rate structure for Council's consideration
Phase Two	July 2023 to Q1 2025	Assuming Council approval of a stormwater rate structure, coordinate with new water billing solution to integrate required stormwater billing and implement a plan for customer communications
	July – December 2023	Community Engagement with Stakeholders and the creation of a Financial Incentive program for property owners
	Spring 2024	Development of a Review / Appeal process
	Winter 2024	2025 Rate and Tax supported budgets incorporating revised stormwater rate structure
	September 1, 2025	Revised Stormwater Rate Structure implemented

Hamilton's stormwater program is currently funded mostly through combined water / wastewater / stormwater rates and to a much lesser extent by property taxes, with development charges contributing to stormwater infrastructure related to new development.

As the City has experienced financial challenges under the present funding system, the intent of the Review has been to identify and evaluate alternative stormwater funding structures to recover stormwater related costs reflected in the annual rate and tax supported budgets (i.e. revenue neutral). The Review has not evaluated alternative stormwater funding structures with an objective of increasing total revenues. Alternative stormwater funding structures may impact various customer sectors differently with the associated impacts to be identified for Council by the Review. Additional information can be found under the Analysis and Rationale for Recommendations section of Report FCS22043(b).

The target revenue is comprised of the 2025 forecasted stormwater related expenditures in both the rate and tax operating budgets. As directed by Council on January 25, 2023, all aspects of the City's stormwater services are to be funded from the revenues associated with the dedicated stormwater fee. As such, those stormwater related expenditures funded by the general tax levy (principally, funding for local Conservation Authorities and road maintenance associated with culverts, ditches and catch basins), as well as, associated costs required to administer the new user fee have been included in the 2025 target revenue amount.

Staff is recommending that property tax levy funding related to stormwater expenditures to be funded by the new stormwater rate structure, be transferred to the Climate Change Reserve and applied to climate change / environmental initiatives in conjunction with the introduction of the Stormwater Rate Structure.

Stormwater Rate Structure

As per AECOM's review (refer to Appendix "C" to Report FCS22043(b)), an evaluation of seven stormwater fee models has resulted in a recommendation for the City to adopt the Single Family Unit (SFU) stormwater fee structure. The recommendation reflects that the SFU model most closely aligns with the Guiding Principles.

The recommended rate structure would divide properties into two categories:

(i) Residential (low to medium density)
(ii) Industrial, Commercial and Institutional (ICI), Mixed Use properties and high-rise Residential buildings

For additional information on the proposed Stormwater Rate structure refer to Appendix "A" to Report FCS22043(b).

Residential (Low to Medium Density)

Low to medium density Residential properties will be further divided into three categories according to their property type. The stormwater charge per dwelling unit for a given category is calculated based on the average amount of impervious area for properties within that category. All single family detached dwellings (Dwellings) would fall into the

same category and would, therefore, pay the same amount regardless of size or location. The total Residential impervious area (single family residential plus multi-residential) represents 45% of the total City's impervious area and, therefore, will contribute 45% of the total stormwater funding revenue. The remaining 55% would come from all other properties (ICI and mixed use properties).

Appendix "A" to Report FCS22043(b) outlines various residential categories and corresponding assigned SFU fee factors. Recommendation (a) of Report FCS22043(b) seeks Council's approval of the recommended stormwater rate structure. The 2025 stormwater rate charges will be presented for Council's consideration during the 2025 Rate Supported Budget process.

Residential (low to medium density) property types have been grouped into three SFU categories with a corresponding assigned fee factor with a single family detached home representing a base SFU factor of one unit. Similarly, semi-detached and town homes would have an assigned SFU factor of 0.50 or 50% of the applicable fee of a single family home. The representative property categories are derived from classes provided by the Municipal Property Assessment Corporation (Corporation) that is responsible to accurately assess and classify all properties in Ontario.

Of particular note is the residential SFU outside the urban boundary where the average impervious area is more than double that of the residential impervious area in the urban boundary. This analysis would suggest that rural residential SFU should effectively pay double that of a residential SFU within the urban boundary. However, staff supports a universal fee structure for residential single family dwellings regardless of location within the City. For further details, refer to AECOM's analysis, Appendix "C" to Report FCS22043(b).

Industrial, Commercial and Institutional, Mixed Use properties and High-Rise Residential Buildings

ICI, mixed use properties and high-rise residential buildings will be charged based off their impervious surfaces as measured using the most recent aerial imagery available to the City. Impervious areas on properties represent the amount of stormwater runoff they contribute to the City's stormwater management system. Impervious surfaces are defined as those surface areas that generally contribute a higher amount of runoff compared to soft surfaces. Impervious surfaces include buildings, paved areas, driveways, walkways, compacted gravel laneways, pavers, etc. Soft areas include grassed surfaces, soil, treed areas, etc. Properties classified as undeveloped land would be excluded from a stormwater fee, because they do not contain any impervious or hard surface and, therefore, do not contribute to runoff. Within the ICI sector, there are clear differences in the permeability of some properties, which also affects stormwater runoff.

For non-residential and high-rise residential buildings, the proposed fee structure will be based on the concept of billing units. A billing unit represents the average impervious area on a single family detached residential property (approximately 291.00 square

metres) being designated as one billing unit. To calculate the total stormwater charge, the total impervious area for a property is divided by the 291.00 square metres to give the total number of billing units. The number of billing units of the property is then multiplied by the monthly charge per billing unit.

If implemented, the proposed dedicated stormwater fee would apply to virtually all developed properties within the City and, therefore, would include several thousand properties currently not contributing to the program by virtue of not being connected to the City's water and wastewater system (examples include parking lots, storage facilities and properties outside the urban boundary without access to the municipal water and / or wastewater systems). These properties will require "stormwater only" accounts to be set up as they lack a water / wastewater invoice to add the stormwater fee.

While the Review has not evaluated alternative stormwater funding structures with an objective of increasing total revenues, the direction from Council was that all aspects of the City's stormwater services is to be funded from the revenues associated with the dedicated stormwater user fee. As previously noted, the current 2025 rate supported stormwater program (approved in principle) is approximately $40.6 M, whereas all aspects of the stormwater program funded by both rate and general tax levy is estimated to be approximately $54 M in 2025. Table 2 of Report FCS22043(b) provides an array of different residential water user profiles in the City with the estimated annual water and wastewater / stormwater bill under both the current rate structure and the potential dedicated stormwater user fee. Profiles in Table 2 incorporate the combined water and wastewater rate increases that have been approved in principle for 2024 and 2025.

Table 2: Residential Profile Impact Analysis

Residential Type	**Single Family Dwelling**			**Townhome**	**Detached Home not on City System**
Water User Profile	Average Residential User	Low Water User (Single Occupant)	Large Water User (Multi Generational Home)	Average Townhome User	N/A
Meter Size	meters < 25mm				N/A
Annual Consumption	200m3	100m3	300m3	170m3	N/A
Forecast Monthly SW Fee	$ 14.20	$ 14.20	$ 14.20	$ 7.10	$ 14.20
Current Annual WWW Bill	$ 1,061.50	$ 684.70	$ 1,532.50	$ 920.20	N/A
Restated WWW Bill, 2025	$ 937.55	$ 599.95	$ 1,359.55	$ 810.95	N/A
WWW Bill, Net Change	**$ (123.95)**	**$ (84.75)**	**$ (172.95)**	**$ (109.25)**	**N/A**
Annual Storm Bill	$ 170.40	$ 170.40	$ 170.40	$ 85.20	$ 170.40
Annual Net Change	**$ 46.45**	**$ 85.65**	**$ (2.55)**	**$ (24.05)**	**$ 170.40**
Annual Net Change %	**4.4%**	**12.5%**	**(0.2%)**	**(2.6%)**	**N/A**

AECOM has been retained under a Roster assignment to conduct the Stormwater Funding Review with their findings presented within Appendix "C" to Report FCS22043(b). In order for the recommended stormwater rate structure to be implemented efficiently, staff is recommending continuing to utilize AECOM as the primary consultant through the implementation phase. AECOM has an experienced team who have completed stormwater funding studies and / or stormwater rate implementations for several Ontario municipalities including: Kitchener, Guelph, Mississauga, Markham, Ottawa, Waterloo, Stratford, Sault Ste Marie, Thunder Bay, Barrie, Brantford, Ajax and Sudbury.

Alternatives for Consideration – See Page 22-23

FINANCIAL – STAFFING – LEGAL IMPLICATIONS

Financial: The total cost of the dedicated stormwater fee implementation with an upset limit of $500 K will be funded from the Stormwater Reserve (108010). The cost of the Stormwater Fee Implementation phase includes continued support for consulting services by AECOM and for staff to manage and implement the dedicated fee. The Stormwater Reserve (108010) has sufficient funds to support the Review and related staffing costs with a 2022 year-end balance exceeding $6.0 M.

Staffing: If Council approves the implementation of a stormwater rate structure for September 2025, temporary staff will be required at various times throughout the implementation phase to work with the consultant resource.

Legal: Under the authority of Sections 9, 10, 11 and 391 of the *Municipal Act, 2001*, the City has the authority to charge a user fee to cover the cost of a service, including stormwater management services. A key consideration is to ensure that there is a connection between the amount of the user fee and the cost of the service being provided, such that it is not categorized as a tax. Another key consideration is that the by-law to be drafted will include provisions allowing review/appeal of proposed stormwater assessments on the basis that the property is assessed too high as well as the existence of possible legal exemptions from assessment. This method is used in a number of other municipalities and was revealed during the review of best practices among the by-laws of similar municipalities identified by the consultant. Advantages of this approach are that it is unnecessary to determine all possible exceptions and possible exemptions at the time of by-law passage, with the associated benefit that the by-law will automatically adopt and comply with legislative amendments and legal rulings as and when they occur

Legal Services will be engaged during the stormwater fee implementation.

As Report FCS22043(b) deals with the approval of a policy framework for imposing stormwater fees, public notice has been given under the City's Public Notice Policy By-law 07-351.

HISTORICAL BACKGROUND

Hamilton's stormwater program is currently funded mostly through combined water / wastewater / stormwater rates and, to a much lesser extent by property taxes, with development charges contributing to stormwater infrastructure related to new development. Prior to 2004, the stormwater program was funded primarily by property taxes.

In June 2022, Council directed staff to report back with proposed Guiding Principles for Council's consideration that would direct the evaluation of alternative stormwater rate funding structures as part of a Stormwater Funding Review (refer to Report FCS22043 for details).

As such, AECOM was retained under a Roster assignment to conduct the Stormwater Funding Review. AECOM has an experienced team who have completed stormwater funding studies and/or stormwater rate implementations for several Ontario municipalities including: Kitchener, Guelph, Mississauga, Markham, Ottawa, Waterloo, Stratford, Sault Ste Marie, Thunder Bay, Barrie, Brantford, Ajax and Sudbury.

Guiding Principles approved by GIC in November 2022 have formed the foundation of the Review. Table 3 of Report FCS22043(b) provides a brief description of what the Principles are intended to achieve. A successful stormwater rate structure will result when an appropriate balance is achieved between the various principles being considered.

The Review entailed an assessment of Hamilton's current stormwater funding model and a variety of stormwater funding structures utilized by different municipalities in Ontario. The various funding models have been assessed for alignment against the Guiding Principles (refer to AECOM's Review report attached as Appendix "C" to Report FCS22043(b)).

Table 3: Guiding Principles

Guiding Principle	Description of Intent
Fairness and Equity	Customer contributions are proportional to their impact on the system and the cost to run the system (i.e., user-pay). User fees are non-discriminatory amongst customers and sectors.
Climate Resilient and Environmentally Sustainable	Encourages customers to become more resilient to climate change through adoption of on-site controls to reduce run-off, while providing the City with funding needed to increase system-level stormwater resiliency and protect

	natural resources and waterbodies from the impacts of stormwater and the harmful pollutants it carries.
Affordable and Financially Sustainable	Provides sustainable, predictable and dedicated funding. Uses full cost pricing to meet entire stormwater revenue needs at the City's desired level of service. Allows for regular fee reviews to keep pace with changes in the cost-of-service delivery or desired service levels. Allows the City to address infrastructure deficiencies and unfunded liabilities. Considers the financial impact on various customer sectors and is comparable with other municipalities.
Justifiable	Residents and businesses understand how much they contribute to stormwater management and for what the money is being used. Customers have been consulted and involved in the decision-making process, particularly those that will be most affected. Consistent with best practices and applicable laws in order to guarantee that the funding structure is justifiable and transparent if challenged.
Simple to Understand and Manage	Should be readily understood by staff, Council and customers. System is efficiently maintained by City's staff.

The City of Hamilton's stormwater management program helps protect the public, private property, infrastructure and the environment from flooding, erosion and poor surface water quality. Currently, the City primarily funds its stormwater management program through its water and wastewater utility revenues. That means that properties contribute to stormwater services based on the amount of municipal potable water that is used. The City is investigating the viability of implementing a more equitable stormwater funding model. This will ensure the City adheres to Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure, which requires municipalities to have sustainable funding mechanisms for key assets.

Stormwater is water that comes from rain and melted snow that flows over land and into storm drains, ditches, creeks and lakes. In natural landscapes, stormwater is soaked up like a sponge, which then nourishes plants and slowly replenishes creeks, lakes, wetlands and aquifers. In more urban areas, impervious surfaces such as asphalt, concrete and rooftops prevent stormwater from naturally soaking into the ground replenishing aquifers and contributing to creek base flows during dry periods. Instead, the water runs quickly into storm drains and sewer systems and then to our creeks and lakes. These hard surface areas create more stormwater runoff and carry more pollutants, such as oil, grit, nutrients and litter into creeks and lakes.

Since a lot of the City's land is covered in hard surfaces, water cannot soak into the ground in the same way as natural areas. If stormwater cannot soak into the ground, it runs off into the stormwater system. The stormwater system costs money to build, operate and maintain.

The City's stormwater management system protects the health and safety of the public, property (private and public) and the environment by managing the quality and quantity of stormwater. Stormwater management also helps reduce the potential for flooding and erosion. The City is responsible for managing stormwater within its jurisdiction, a program that includes planning, constructing, operating and maintaining natural and engineered infrastructure. The City's stormwater management system includes drains (catch basins), sewers, ditches, ponds, watercourses, culverts etc. These assets all require a funding source for maintenance, repairs and replacement (at the end of their service life).

The City has been an active participant in the Hamilton Harbour Remedial Action Plan since its inception in the 1980's and has invested over $500 M to build or improve point-source water / wastewater / stormwater infrastructure to assist in delisting Hamilton Harbour as an Area of Concern. With these investments completed or progressing as planned, this shifts the primary harbour impact to non-point watershed sources of pollution. The City's Watershed Action Plan will endeavour to minimize the impacts of the City's non-point source pollution such as road run-off, road salt, sediment from construction sites, golf course operations, etc.

There are many different pressures on the stormwater system: urbanization, aging infrastructure, greater understanding of environmental impacts and the increasing impacts of climate change. Without proper financing and preventative maintenance, there is potential for disruptive failures and costly repairs.

POLICY IMPLICATIONS AND LEGISLATED REQUIREMENTS

Report FCS22043(b) proposes a stormwater fee structure for the consideration of Council that supports the principle of a sustainable user-pay stormwater program.

The adoption of a dedicated Stormwater Fee will help to ensure that the City adheres to Ontario Regulation 588/17: Asset Management Planning for Municipal Infrastructure, which requires municipalities to have sustainable funding mechanisms for key assets.

RELEVANT CONSULTATION

Staff in the City Manager's Office (Communications), Corporate Services (Legal Services), Public Works (Hamilton Water) and Planning and Economic Development departments have been consulted and support the recommendations of Report FCS22043(b).

In May 2023, presentations from staff and AECOM were provided to Environment Hamilton and the Hamilton Industrial Environmental Association, along with their associated members / networks.

ANALYSIS AND RATIONALE FOR RECOMMENDATIONS

Stormwater Charge Overview

The recommended stormwater management funding model that has been developed is based on the establishment of a dedicated stormwater charge intended to recover the full costs of the City's stormwater management program. The stormwater charge is premised on the impact properties have on the City's stormwater management system. As such, the model is based on properties' impervious (hard surface) areas as a representation of the amount of stormwater runoff they contribute to the City's stormwater management system. If approved, the model will remove the amount currently paid by rate payers for stormwater management from the water and wastewater rate, and the amounts paid by taxpayers for catch basin / culvert maintenance and conservation authority levies. The proposed stormwater charge will be a separate dedicated charge on the utility bill. With the establishment of a dedicated stormwater charge the water and wastewater rates charged to consumers would be restated and for the average residential consumer their 2025 water / wastewater costs would decrease by approximately 12%.

The stormwater charge model has been developed as a direct way to pay for stormwater management. The stormwater charge would be shown as a separate line item on existing utility bills and rate payers would clearly see how much they are paying for the City's stormwater management services. The stormwater management program's continued funding through the stormwater charge will be determined by Council annually during each budget process.

The basic calculation for a stormwater rate is simply the municipal stormwater management program expense divided by the number of billing units within the municipality. The City's consultant is recommending the number of billing units to each property be allocated based on their portion of Hamilton's total impervious area.

Staff is recommending the SFU fee structure for a dedicated stormwater fee. Residential properties (low to medium density) are charged based on averages of different residential types. Non-residential properties, mixed use, as well as, high-rise residential buildings will be charged based on actual measured impervious area using aerial photography. A statistical sampling of measured impervious area for single family detached homes has been performed to determine the average SFU size (i.e., square meters of impervious area for the average single family detached home). The average SFU size becomes the base billing unit with one stormwater billing unit assigned to each single family detached home.

Fractional billing units are assigned to other residential property types based on statistical sampling of their measured impervious area. Multi-family residential properties, such as townhouses, have a smaller footprint than single family detached homes and would, therefore, be charged less than single family detached homes. Given the wide variability in impervious area statistics for non-residential, mixed-use properties and high-rise

residential buildings, the impervious area for these types of properties is measured individually. The charge for these properties is determined by dividing the measured impervious area by the average SFU size.

The intent is for Hamilton's stormwater charge to be administered through the existing utility bills at the same frequency used to bill for water and wastewater services. Virtually, all developed properties would receive a stormwater charge, including those without water meters and accounts that do not consume water. Where necessary, staff would administer "stormwater charge only" bills (i.e., for properties that do not receive water / wastewater utility bills, such as some parking lots, storage facilities and properties outside of the municipal water and / or wastewater systems).

Hamilton Rate Supported Financial Model

The current rate supported financial model approved by Council is premised upon the objective that capital and operating programs are fully self-funded and financially stable, without excessive year-over-year fluctuations in the charge over the long term.

The introduction of a dedicated stormwater charge would require separating the stormwater management operating and capital programs and their funding from the current water and wastewater / stormwater financial model, with the premise that the total of the two components would remain revenue neutral because funding is premised on cost recovery. Stormwater management capital and operating programs would be funded by the stormwater charge, while all other water and wastewater programs would continue to be funded by the water and wastewater rates. No additional revenue would be generated from the implementation of a stormwater charge than is already provided for in the Rate Supported 10-year operating and capital forecast and the amounts funded by the tax supported budget related to catch basin / culvert maintenance and conservation authority levies.

The analysis presented in Report FCS22043(b) is based on an assumed implementation in 2025 with a projected stormwater charge cost recovery of approximately $54 M for that year to cover the cost of the stormwater management operating and capital program. By removing stormwater management funding from the water and wastewater rate, the water and wastewater rates would correspondingly decrease. The average residential user would see a reduction of 2025 water / wastewater costs of 12%.

Proposed Stormwater Charge Rate Structure

The model developed for Hamilton will divide properties into two categories:
(i) Residential (low to medium density); and (ii) Industrial, Commercial and Institutional, Mixed Use properties and High-Rise Residential buildings. Residential will be further divided into three categories according to their property type with the associated stormwater charges calculated based on the average amount of impervious area for properties within each category as illustrated in Table 4.

Table 4: Stormwater Charge Categories

Category	Number of Categories Based on Property Type
Residential (low to medium density)	3
Apartment and Condominium Buildings	None (individualized calculations)
Industrial, Commercial and Institutional	None (individualized calculations)
Mixed Use Properties	None (individualized calculations)

AECOM has used an analysis method to determine the impervious surface areas across the entire City using aerial photography. Impervious areas on properties represent the amount of stormwater runoff they contribute to the City's stormwater management system. Impervious surfaces are defined as those surface areas that generally contribute a higher amount of runoff compared to soft surfaces. Impervious surfaces include buildings, paved areas, driveways, walkways, compacted gravel laneways, etc. Soft areas include grassed surfaces, soil, treed areas, etc. The analysis did not assess topography, soil types or other property characteristics because doing so would substantially increase the difficulty and cost of analysis. The surface analysis methods employed in Hamilton are similar to those adopted in other municipalities that have implemented stormwater charges.

Table 5 of Report FCS22043(b) illustrates the results of AECOM's analysis for all categories. The impervious surface proportion for each category is equal to the corresponding funding allocation for each category. For example, Residential properties account for 45% of hard surfaces on all properties across Hamilton and, therefore, 45% of stormwater charges are allocated to the Residential property category.

Table 5: Impervious Area by Property Category

Property category	Number of Parcels	Estimated Impervious Area (m2)	Dwelling Units (d.u.)	Impervious surface area proportion
Residential (Includes Apartment and Condominium Buildings)	147,617	47,592,440	213,329	45%
Industrial, Commercial and Institutional	7,719	48,100,000	n/a	55%
Mixed Use	4,244	8,500,000	2,875	
Miscellaneous	738	800,000	3,470	
Undeveloped	5,058		n/a	
Total	**165,376**	**104,992,440**	**219,674**	**100%**

As per Table 6, residential properties will be grouped into one of four residential classes. The first three classes calculate a stormwater fee based on the corresponding assigned SFU factor. For example, if the SFU rate was $14.20/month a single family detached home would be charged $14.20 on their monthly water / wastewater / stormwater utility bill. Whereas each unit in a fourplex would each be billed $3.55/month for their stormwater fee ($14.20 SFU Monthly Fee/4 units). The fourth class is dedicated to residential condo or multi-family high-rise buildings. The fee for these residences is based on their impervious area and calculated identical to how ICI properties are charged.

Table 6: Residential Stormwater Categories

Representative Property	Number of Parcels	Assigned SFU Factor
Residential SFD (in Urban Boundary)	113,597	1.00
Residential SFD (outside Urban Boundary)	9,309	1.00
Residential Link Home	1,239	1.00
Residential Condo - Standard - Detached	31	1.00
Residential Semi Detached	6,838	0.50
Residential Townhouse (Freehold)	11,722	0.50
Residential Multifamily - Towns	143	0.50
Residential Condo - Standard - Towns	402	0.50
Residential Duplex	2,210	0.50
Residential Triplex	801	0.30
Residential Fourplex	272	0.30
Residential Fiveplex	87	0.30
Residential Sixplex	134	0.30
Residential Condo - Standard - Building	149	assessed individually
Residential MultiFamily - Building	683	assessed individually

Proposed Stormwater Charge Program Components

In the development of an implementation plan for a stormwater charge, staff considered several additional stormwater charge program components. This section will outline what these additional components would entail at a high level, although the details of each, if any, would have to be determined as part of the implementation of a stormwater charge in accordance with any decision by Council.

Requests for Review / Appeal

Requests for review / appeal may arise from residential customers who believe they have received an inaccurate stormwater charge. For example, customers assigned a residential property type category and feel as though their property has been assigned an incorrect SFU factor. City staff would process the application, conduct the review / appeal and update the customer with the result.

Similar recourse would exist for ICI, mixed use, or high-rise residential building properties. However, the review / appeal requests would require evidence that the calculation of impervious area on the property (on which the stormwater charge is based) is incorrect. The review / appeal process would also include any instance where a property owner feels they are entitled to a legal exemption.

Incentive Programs

Incentive programs are increasingly a part of a comprehensive stormwater rate structure to improve equity, provide incentives to implement and maintain on-site stormwater measures and advance environmental objectives. The basic principle in developing an incentive program is that credits / rebates could be offered to landowners that help reduce the load on the City's stormwater management system. Property owners who reduce the amount of stormwater runoff or improve the quality of the stormwater runoff that discharges from their property into the municipal stormwater management system and / or surrounding bodies of water may be eligible for a credit / rebate. If credits are to be given, the methodology for calculation of the credit must be determined. Credits are generally based on reduction of impact or reduction of cost of service and evaluated on approved flood prevention (quantity) and pollution reduction (quality) controls.

ICI, Mixed Use properties and High-Rise Residential Building Properties

The purpose of an incentives program will be to account for and encourage on-site stormwater management. Staff intend to use various criteria during the formulation of the incentives program such as: are the works quantifiable; are the results verifiable; and is the program justifiable and easy to implement.

Quantification of on-site stormwater management is typically demonstrated through the preparation of a stormwater management report prepared by a professional engineer and allows staff to understand how stormwater runoff is being retained and managed on a property. These reports, in turn, would allow staff to understand the impact of properties on the municipal stormwater system. Typical on-site stormwater management practices include low impact development / green infrastructure (e.g. permeable pavement, bioswales, green roofs, etc.), stormwater ponds, underground detention tanks and drainage inlet controls, among others. Results of on-site stormwater management would need to be verified to ensure the work has been properly installed and is functioning as designed and in perpetuity.

An incentives program is justifiable if the impact of the on-site stormwater management works has a significant and positive impact on the City's stormwater management system relative to the costs associated with administering the program. As with other components of this stormwater charge model, staff will strive to keep the administrative burden and associated costs of an incentives program to a minimum.

Residential Properties

On-site stormwater management is typically demonstrated through the preparation of a professional engineer's stormwater management report. Requiring such a report for a residential property would be unreasonable given its associated costs relative to a potential incentive. Given the large number of residential properties within the City (approximately 147,000), verification of even a small portion would be extremely expensive for the City. Moreover, further verification in future years would be necessary to ensure that the equipment or constructed works remain in good working order.

If the recommendations in Report FCS22043(b) are approved, staff would work with AECOM and stakeholders on a credit program development for ICI, mixed-use and high-rise residential building properties, as well as, an incentive program for residential (low to medium density) properties and report back to Council with the recommended program.

AECOM has advised that cost recovery implications from incentive programs for ICI, mixed-use and high-rise residential building properties, as well as, residential properties tend to be account for 3% of the overall program cost. For 2025, the estimated cost for incentive programs is approximately $1.6 M per year and has been included in the overall funding structure model.

Proposed Stormwater Charge Impact Analysis

Staff conducted an impact analysis to get a better understanding of the potential impacts of the stormwater charge model on all property types. Generalizing the results of the impact analysis is complicated by the fact that there are several variables that affect the result, namely, impervious area, property category and water consumption and assessed value of the property. Water consumption is a factor in the analysis because the stormwater charge model requires the separation of the portion paid for stormwater management currently embedded in the water / wastewater rate, thereby, resulting in the wastewater / stormwater fees decreasing upon implementation.

At a very general level, the analysis demonstrates that small properties with higher water consumption would generally have a net decrease on their utility bill, while large properties with low water consumption would generally have a net increase.

For analysis purposes, staff utilized water consumption history data from 2022 and assumed 2025 water / wastewater rates that have been approved, in principle. The impact analysis compares 2025 costs with and without the recommended stormwater

charge and incorporates the reduction of water / wastewater rates when the stormwater fee becomes effective. It should be noted Hamilton's unique block water and wastewater rate structure remains applicable to residential accounts with meters less than 25mm in diameter size.

Residential Impact Profile Analysis

Table 7 to Report FCS22043(b) reflects the net impact of implementing the recommended stormwater fee considering various water consumption profiles, connection to the municipal water system and various property types. For example, a property with average water consumption of 200m3 per year with a water meter <25mm would have a net annual increase of $46, whereas, a town home with annual consumption of 170m3 would have a net annual savings of approximately $24.

Profiles in Table 7 incorporate the combined water and wastewater rate increases that have been approved, in principle, for 2024 and 2025.

Table 7: Residential Impact Profile Analysis

Residential Type	**Single Family Dwelling**			**Townhome**	**Detached Home not on City System**
Water User Profile	Average Residential User	Low Water User (Single Occupant)	Large Water User (Multi Generational Home)	Average Townhome User	N/A
Meter Size	meters < 25mm				N/A
Annual Consumption	200m3	100m3	300m3	170m3	N/A
Forecast Monthly SW Fee	$ 14.20	$ 14.20	$ 14.20	$ 7.10	$ 14.20
Current Annual WWW Bill	$ 1,061.50	$ 684.70	$ 1,532.50	$ 920.20	N/A
Restated WWW Bill, 2025	$ 937.55	$ 599.95	$ 1,359.55	$ 810.95	N/A
WWW Bill, Net Change	**$ (123.95)**	**$ (84.75)**	**$ (172.95)**	**$ (109.25)**	**N/A**
Annual Storm Bill	$ 170.40	$ 170.40	$ 170.40	$ 85.20	$ 170.40
Annual Net Change	**$ 46.45**	**$ 85.65**	**$ (2.55)**	**$ (24.05)**	**$ 170.40**
Annual Net Change %	**4.4%**	**12.5%**	**(0.2%)**	**(2.6%)**	**N/A**

ICI and High-Rise Residential Building Properties Impact Analysis

Tables 8 and 9 to Report FCS22043(b) reflect the net impact of implementing the recommended stormwater fee on various ICI profiles with various meter sizes and water consumption patterns. As with residential, this sector currently pays for water, wastewater and stormwater services based on water consumption. Small businesses with proportionately higher water consumption will see the greatest decrease in their annual water / wastewater / stormwater utility billings. Businesses that don't rely on high water consumption and, therefore, currently pay very little for water will see the greatest

impact from the shift to a stormwater fee based on impervious area. Businesses that are large water users will likely see a decrease due to the fact that the current structure is calculated based on water / wastewater consumption. Those property owners that have large meters and, in turn, larger daily fixed charges but small consumption, will likely see a net increase in their annual water / wastewater / stormwater utility billings.

A property's net increase or decrease on their utility bill will depend on the size of their meter, their annual water consumption, as well as, their impervious area (billing units). For example, a property with average annual water usage of 18,000m3, an impervious area of 55,200 square meters (189.7 billing units) and a 100mm sized meter, would have an annual net increase of approximately $22 K or 23% on their bill under the stormwater charge scenario compared to the same amount of water use under the status quo scenario. Conversely, a property with average annual water use of 505,000m3, an impervious area of 93,200 square meters (319.6 billing units) and a 250mm sized meter, would have an annual net decrease of approximately $199 K or 8.2% on their bill under the stormwater charge scenario compared to the same amount of water use under the status quo scenario.

Profiles in Tables 8 and 9 incorporate the combined water and wastewater rate increases that have been approved in principle for 2024 and 2025.

Table 8: ICI Profile Impact Analysis

Property Type	Institutional (Secondary School)	Commercial (Big Box Retailer)	Commercial (Car Wash)	Commercial (Fast Food Chain)
Meter Size	150mm	100mm	50mm	38mm
Annual Consumption	4,159m3	18,064m3	4,430m3	3,170m3
Impervious Area	27,696m2	55,200m2	1,800m2	3,300m2
Forecast Monthly SW Fee	$ 1,352	$ 2,694	$ 88	$ 160
Annual WWW Bill, Current Structure	$ 39,664	$ 95,119	$ 24,077	$ 16,938
Restated WWW Bill, 2025	$ 34,888	$ 84,899	$ 21,639	$ 15,282
WWW Bill, Net Change	**$ (4,776)**	**$ (10,220)**	**$ (2,438)**	**$ (1,657)**
Annual Storm Bill	$ 16,222	$ 32,325	$ 1,056	$ 1,926
Annual Net Change	**$ 11,446**	**$ 22,105**	**$ (1,382)**	**$ 269**
Annual Net Change %	**28.9%**	**23.2%**	**(5.7%)**	**1.6%**

Table 9: ICI Profile Impact Analysis

Property Type	Industrial (Food Processing)	Institutional (Hospital)	Industrial (Large Industrial Water User)	Commercial (York Blvd Parkade)
Meter Size	250mm	Various Meters	Various Meters	N/A
Annual Consumption	505,000m3	301,940m3	947,144m3	N/A
Impervious Area	93,200m2	41,300m2	32,600m2	4,100m2
Forecast Monthly SW Fee	$ 4,538	$ 2,015	$ 1,590	$ 200
Annual WWW Bill, Current Structure	$ 2,424,723	$ 1,512,494	$ 4,501,198	N/A
Restated WWW Bill, 2025	$ 2,170,976	$ 1,352,222	$ 4,031,623	N/A
WWW Bill, Net Change	**$ (253,746)**	**$ (160,271)**	**$ (469,576)**	**N/A**
Annual Storm Bill	$ 54,460	$ 24,180	$ 19,085	$ 2,403
Annual Net Change	**$ (199,286)**	**$ (136,092)**	**$ (450,491)**	**$ 2,403**
Annual Net Change %	**(8.2%)**	**(9.0%)**	**(10.0%)**	**N/A**

Shifts Between Property Categories

If implemented, the stormwater charge would result in a shift in the contributions paid into the stormwater management program by each of the property categories. Table 10 illustrates these shifts. The "status quo scenario" column shows the current breakdown based on program funding from the water rate. The "stormwater charge scenario" column shows the breakdown under the stormwater charge scenario and is equal to the proportion of impervious surface from each property category. The sum of the shifts in percentage points is zero.

Table 10: Shifts Between Property Categories Related to Paying into the Stormwater Management Program as a Result of Implementing a Stormwater Charge

Property Category	Stormwater Management Funding % (status quo scenario)	Stormwater Management Funding % (stormwater charge scenario)	Funding contribution shift (%)	Funding Contribution (stormwater charge scenario)
Residential	49%	45%*	(4%)	$23 M*
ICI	51%*	55%	4%	$31 M

*****Includes multi-residential

Stormwater Rate Effective Date

Alectra Utilities Corporation ("Alectra") has been providing water and wastewater / stormwater account management and billing services to the City of Hamilton ("City") since December 2001. On August 6, 2021, the City was advised that Alectra's Board of Directors, at its May 21st meeting, approved an Alectra staff recommendation to discontinue water billing services as of December 31, 2024 (for details refer to Report FCS21082). It should be noted that Alectra similarly provided notice of termination to the municipalities of Guelph, Markham and Vaughan.

It was planned that at the commencement of Phase 2, the Customer Information System (CIS) Request for Proposal (RFP) would be issued in early January 2023 with the procurement completed by June 30, 2023. Assuming an aggressive 14 to 16-month implementation phase, the City's new utility billing solution was planned for a November 2024 "go-live" launch. However, the CIS RFP development experienced a number of delays that resulted in the RFP release not occurring until the end of March 2023 (for further details refer to Report FCS21082(e)). The revised completion timing of the billing transition program is Q2 2025. Alectra has confirmed that it will continue providing utility billing services into 2025 when the City is able to assume billing responsibility.

While it is certainly an advantage to incorporate a new stormwater rate structure during the development of the CIS, the implementation of a new stormwater rate structure cannot precede the launch of the new utility billing solution. Hence, January 1, 2025 identified as the effective date per the Council motion passed at its meeting held on January 25, 2023 (refer to the Executive Summary of Report FCS22043(b)) is no longer feasible.

As previously mentioned, there are approximately 158,000 active water and wastewater accounts. However, it is estimated there will be approximately an additional 10,000 stormwater only accounts. Most of the new stormwater only accounts are a result of the fact that stormwater fees will be applicable to all developed properties and not necessarily to every existing metered water account. There are several thousand developed properties currently not connected to the municipal water and / or wastewater systems that will be subject to a future stormwater fee. The stormwater only accounts will take some time to set up and a targeted communication strategy will have to be employed with this customer segment as these customers have not previously received a utility invoice from Alectra.

Transitioning the existing customer base of approximately 158,000 accounts from Alectra to the City will require considerable communications to advise and assist customers. There will be changes with all new account numbers, impacts to pre-authorized payments, e-billing and customer service once the new billing solution is implemented. Given the complexity of the billing transition and to manage the associated customer service risks, implementation of a new stormwater rate should not be planned to occur simultaneously with the implementation of the new billing solution. A concurrent launch of the new billing solution and stormwater fee billing would increase the risk that

customer inquiries will overwhelm the City's Customer Contact Centre and Councillors' offices.

It is recommended that the stormwater fee (if approved) be effective September 1, 2025 assuming the Q2 2025 implementation of the new billing solution. Staff will report back if issues arise that affect the billing solution implementation timeframe.

Consultant Resources for Implementation Phase

Per City of Hamilton By-law 21-215, Procurement Policy #11 - "Non-competitive Procurements", staff must obtain Council approval for single source requests greater than $250 K. As previously noted, AECOM completed the Stormwater Funding Review for the City under a roster assignment. As per recommendation (g) to Report FCS22043(b) staff is requesting the single source procurement of AECOM as external consultants for the Stormwater Funding implementation. Having completed the initial discovery / feasibility phase for the City, AECOM's team is familiar with the City's technical, management and financial requirements and can produce the required deliverables in a timely and cost-effective manner. They have completed over 20 stormwater funding studies and user implementations across Canada and over 50 stormwater funding studies / implementations in the United States.

AECOM's experienced team has completed stormwater funding studies and / or stormwater rate implementations for a number of Ontario municipalities including: Kitchener, Guelph, Mississauga, Markham, Ottawa, Waterloo, Stratford, Sault Ste Marie, Thunder Bay, Barrie, Brantford, Ajax and Sudbury.

ALTERNATIVES FOR CONSIDERATION

The Review of stormwater funding models confirmed that there are three stormwater funding models (all based on impervious area) that most closely aligned with the Guiding Principles:

1. Equivalent Residential Unit (ERU)
    - All residential types pay the same, regardless of home type.
    - Not recommended as ERU model does not fully align with the "Fair and Equitable" Guiding Principle as multi-residential property types would not be treated as fairly as a single family home, e.g. home with a secondary dwelling unit would be charged a stormwater fee double that of a single family home.

2. Tiered SFU Model
    - Different types of residential properties pay different amounts, based on their average impervious area.
    - Single family homes are further divided into two or more tiers, e.g. small, medium and large homes.

- Requires further residential property impervious analysis to determine potential tiers and inherently, requires more staff effort on an ongoing basis to administer a tiered SFU model.
- Not recommended as Tiered SFU model does not align with the "Simple to Understand and Manage" Guiding Principle in comparison with the SFU model.

3. Single Family Unit (SFU) (Recommended Model)
   - Different types of residential properties pay different amounts, based on their average impervious area.
   - All single family dwellings pay the same.
   - Most residential rates are based on defined MPAC property type codes allowing efficient fee administration.

It should be noted that staff considered how multi-family and condo buildings would be charged under an SFU model. As in Appendix "A" to Report FCS22043(b), there are 683 multi-family buildings (with 33,162 dwelling units) and 149 condo buildings (with 10,288 units) in Hamilton. One option that was reviewed was simply to include multi-family and condo buildings in the same residential category as multi-residential units with three to six units that have an assigned SFU factor of 0.3. However, by doing so, higher density multi-residential properties would be negatively affected, as for example, a 10-storey building with 100 units would pay much less than a 20-storey building with 200 units despite having a nearly identical footprint. The result would be counter to the "Fair and Equitable" Guiding Principle and to the City's intensification efforts. Hence, within the recommended SFU model, multi-family and condo buildings' stormwater charges will be based on measuring their impervious area rather than the number of residential units within a building.

ALIGNMENT TO THE 2016 – 2025 STRATEGIC PLAN

Community Engagement and Participation
Hamilton has an open, transparent and accessible approach to City government that engages with and empowers all citizens to be involved in their community.

Economic Prosperity and Growth
Hamilton has a prosperous and diverse local economy where people have opportunities to grow and develop.

Healthy and Safe Communities
Hamilton is a safe and supportive city where people are active, healthy, and have a high quality of life.

Clean and Green
Hamilton is environmentally sustainable with a healthy balance of natural and urban spaces.

Built Environment and Infrastructure
Hamilton is supported by state-of-the-art infrastructure, transportation options, buildings and public spaces that create a dynamic City.

Our People and Performance
Hamiltonians have a high level of trust and confidence in their City government.

APPENDICES AND SCHEDULES ATTACHED

Appendix “A” to Report FCS22043(b) – Recommended Stormwater Fee Structure

Appendix “B” to Report FCS22043(b) – Assessment of Recommended Stormwater Fee Structure with Guiding Principles

Appendix “C” to Report FCS22043(b) – AECOM Stormwater Funding Review: Funding Option Evaluation Report, June 2023

Recommended Stormwater Fee Structure

The following table summarizes the recommended stormwater fee structure.

Representative Property (Residential Only)	Number of Parcels	Dwelling Units (d.u.)	Est'd Impervious Area Square Metres (m2)		Calculated SFU Factor	Assigned SFU Factor	Units by Bill (Avg)	Billing Units
			Total	Avg/d.u.				
Residential SFD (in Urban Boundary)	113,597	113,597	33,110,498	291.47	1.00	1.00	1.00	122,232
Residential SFD (outside Urban Boundary)	9,309	9,309	5,551,322	596.34	2.05	1.00	1.00	10,017
Residential Link Home	1,239	1,239	276,441	223.12	0.77	1.00	1.00	1,333
Residential Condo - Standard - Detached	31	408	118,921	291.47	1.00	1.00	1.00	408
Residential Semi Detached	6,838	6,838	1,167,538	170.74	0.59	0.50	0.50	3,454
Residential Townhouse (Freehold)	11,722	11,722	1,645,414	140.37	0.48	0.50	0.50	5,921
Residential Multifamily - Towns	143	5,266	685,413	130.16	0.45	0.50	18.41	2,633
Residential Condo - Standard - Towns	402	12,350	1,968,400	159.38	0.55	0.50	15.36	6,238
Residential Duplex	2,210	4,420	503,381	113.89	0.39	0.50	1.00	2,233
Residential Triplex	801	2,403	202,466	84.26	0.29	0.30	0.90	668
Residential Fourplex	272	1,088	87,603	80.52	0.28	0.30	1.20	302
Residential Fiveplex	87	435	34,109	78.41	0.27	0.30	1.50	121
Residential Sixplex	134	804	58,864	73.21	0.25	0.30	1.80	223
*Residential Condo - Standard - Building	149	10,288	619,420	60.21		assessed individually		
*Residential Multi-Family - Building	683	33,162	1,562,650	47.12		assessed individually		

*Calculated the same as non-residential

Non-Residential Properties

Non-Residential Properties are calculated based on billing units. A billing unit represents the average impervious service area on a single family detached residential property (approximately 291.00 square metres) being designated as one billing unit. To calculate the total stormwater charge, the total impervious area for a property is divided by the 291.00 square metres to give the total number of billing units. The number of billing units on the property is then multiplied by the monthly charge per billing unit.

Non-Residential Properties Include:

- Industrial, Commercial and Institutional properties
- Mixed Use (i.e. condos over a commercial property)
- Miscellaneous (i.e. campgrounds)

Properties that are not seen to contribute to the City's stormwater system would be properties still in their natural state (e.g. undeveloped properties, forested areas, parks with no infrastructure) would not be subject to the user fee. Roadways and bridges of the City of Hamilton are a piece of the stormwater management system and will therefore be exempt from the user fee.

Assessment of Recommended Stormwater Fee Structure with Guiding Principles

The following table summarizes the assessment of the current and recommended stormwater fee structure on how it aligns to the guiding principles that have guided the stormwater funding fee review as approved in Report FCS22043(a).

Guiding Principle	Current Assessment	Revised Assessment	Recommended Changes & Observations
Fairness and Equity	Fair - Requires Improvement	Very Good	Customers' contributions are proportional to their impact on the system and the cost to run the system (i.e. user-pay). User fees are non-discriminatory amongst customers and sectors.
Climate Resilient and Environmentally Sustainable	Good	Excellent	Encourages customers to become more resilient to climate change through adoption of on-site controls to reduce run-off, while providing the City with funding needed to increase system-level stormwater resiliency and protect natural resources and waterbodies from the impacts of stormwater and the harmful pollutants it carries.
Affordable and Financially Sustainable	Good	Excellent	Provides sustainable, predictable and dedicated funding. Uses full cost pricing to meet entire stormwater revenue needs at the City's desired level of service. Allows for regular fee reviews to keep pace with changes in the cost-of service delivery or desired service levels. Allows the City to address infrastructure deficiencies and unfunded liabilities. Considers the financial impact on various customer sectors and is comparable with other municipalities.
Justifiable	Fair - Requires Improvement	Very Good	Residents and businesses understand how much they contribute to stormwater management and for what the money is being used. Customers have been consulted and involved in the decision-making process. Consistent with best practices and applicable laws in order to ensure that the funding structure is justifiable and transparent if challenged.
Simple to Understand and Manage	Fair - Requires Improvement	Very Good	Readily understood by staff, Council and customers. Efficiently maintained by staff.

AECOM

Stormwater Funding Review

Funding Option Evaluation

City of Hamilton

June 2023

Delivering a better world

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Executive Summary

Like many municipalities across Canada, the City of Hamilton (the "City") is reviewing its stormwater funding model, which is mainly supported by its water/wastewater utility with contributions from the general tax levy (property tax). The City wishes to investigate a range of funding options that would provide a sustainable and equitable source of funding.

This report summarises municipal stormwater funding options available to the City of Hamilton, describes which options are used by other, similar, municipalities, provides an evaluation of the various options and makes a recommendation for the City to move forward. The evaluation is based on the following Guiding Principles that were endorsed by the City of Hamilton's General Issues Committee on November 30, 2022:

- Fair and Equitable;
- Climate Resilient and Environmentally Sustainable;
- Affordable and Financially Sustainable;
- Justifiable; and
- Simple to Understand and Manage.

Based on our evaluation of stormwater funding models, we recommend that the City consider an imperviousness-based stormwater user fee with a financial incentive program. Due to the range of residential types in Hamilton determined during our parcel analysis, we recommended that the City consider a 'Single Family Unit Stormwater Rate' where different residential types pay different amounts based on their average footprint. This results in residential types with a smaller 'footprint' (e.g., duplex or condo) paying less than a single-family detached home. Industrial, commercial, institutional and the largest residential (e.g., high-rises) properties would pay based on their actual impervious area which would be measured using aerial photography. This type of funding model follows the 'user-pay' principle which forms the basis for the City's water and wastewater rate structure. It encourages development to limit the amount of impervious surface area, resulting in reduced runoff. This will be particularly beneficial in combined sewer areas and also encourages low impact development and the use of green infrastructure.

The following table provides a summary of the qualitative stormwater funding option evaluation. A red 'X' indicates that the funding model does not support the specific Guiding Principle, a yellow hatched circle indicates that the funding model somewhat supports the Guiding Principle, and a green checkmark indicates that the funding model supports the Guiding Principle well.

Within the body of the report, one can also find the quantitative assessment of stormwater funding options, including the parcel and rate analysis.

Table 1: Comparison of Stormwater Funding Options

Stormwater Funding Model	Used By	Stormwater Rate Based On	Fair & Equitable	Climate Resilient	Environmentally Sustainable	Affordable	Financially Sustainable	Justifiable	Simple to Understand & Manage
General Tax Levy	Brantford	Assessed value	✗	✗	✗	◍	✗	✗	✓
Dedicated Tax Levy (Markham)	Markham	Assessed value	✗	✗	✗	◍	◍	✗	✓
Water/Wastewater Rate (Hamilton, Toronto)	Hamilton Toronto	Water consumption	✗	◍	✗	◍	◍	✗	✓
Stormwater Rate – Tiered Flat Fee	Ottawa Vaughan London	Property type, size	✗	◍	◍	◍	✓	◍	◍
Stormwater Rate – Equivalent Residential Unit	Guelph	Impervious area (but all residential types pay the same)	◍	✓	✓	◍	✓	✓	◍
Stormwater Rate – Single Family Unit	Barrie	Impervious area (but all single family dwellings pay the same)	✓	✓	✓	◍	✓	✓	◍
Stormwater Rate – Tiered Single Family Unit	Mississauga Kitchener	Impervious area	✓	✓	✓	◍	✓	✓	✗

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1. Introduction

Like many municipalities across Canada, the City of Hamilton (the "City") is reviewing its current stormwater funding model, which is mainly supported by its water/wastewater rate with contributions from the general tax levy (property tax). As per the Canadian Infrastructure Benchmarking Initiative (nationalbenchmarking.com), the City's water and wastewater rates are currently lower than the national average but annual increases of 10% are projected over the next decade.

The City wishes to investigate a range of funding options that provide a sustainable and equitable source of funding. This study was a recommendation in the City's Flooding and Drainage Improvement Framework (PW22071-Appendix C.pdf).

This report summarises municipal stormwater funding options available to the City of Hamilton, describes which options are used by other, similar, municipalities and provides an overall evaluation of the various options. The evaluation is based on the following Guiding Principles that were endorsed by the City of Hamilton's General Issues Committee on November 30th:

- Fair and Equitable;
- Climate Resilient and Environmentally Sustainable;
- Affordable and Financially Sustainable;
- Justifiable; and
- Simple to Understand and Manage.

2. Funding Options

2.1 Overview of Funding Mechanisms

To support current and future stormwater management needs, there are five general mechanisms for funding the major components of municipal stormwater management programs in North America, including:

1. Taxes, which are mandatory levies authorized through legislation, collected by a public body, and not related to any specific benefit or government service (i.e., these are for general services to support the public good);
2. Fees and special charges, which are payments made to offset the cost of a specific service and payable by those people who benefit from the service (includes stormwater rates);
3. Special levies that have specific designations and limitations for usage;
4. Other means such as public-private partnerships, federal or provincial economic stimulus grants for infrastructure investment, debentures, and long-term debt-financing strategies; and
5. A combination of the above.

Property taxes are the primary source of funding for stormwater management programs in Canada, although stormwater rates are becoming increasingly used. Details of the most common stormwater management funding mechanisms are presented below and described in more detail in the following sections.

1. Property Tax - general tax fund and dedicated levy;
2. Development Related Charges and Fees;
3. Grants;
4. Stormwater Rate; and
5. Water/Wastewater Rate.

Most Ontario municipalities, including the City of Hamilton, manage and fund municipal drains separately, through provisions of the Drainage Act. The proposed new stormwater funding model will not impact how the City manages and funds municipal drains.

2.2 Property Tax

2.2.1 General Tax Fund

Local property taxes are typically the most common revenue source to support municipal stormwater management programs in Canada and is one of the funding sources for the City of Hamilton's stormwater management program. Revenue derived from the municipality's general tax levy goes into a general fund which covers the operating and capital expenditures of most municipal services. Property tax is determined based on the property value assessment multiplied by the applicable tax rate which depends on the classification of the property.

Property tax rates are established on an annual basis by Canadian municipalities to meet their projected funding needs and in consideration of the total current value assessment of all taxable properties within their jurisdiction. Several municipalities have a capping adjustment program that limits tax payments for selected property types (e.g., Commercial, Industrial and Multi-Residential Properties).

Tax-exempt properties generally do not contribute tax funds to the municipality's stormwater management stormwater management program. Tax-exempt properties include governmental parcels (e.g., municipal, regional, provincial, and federal buildings) as well as institutional parcels (e.g., schools, hospitals, and churches) and other charitable organizations that are registered with the Canada Revenue Agency and therefore exempt from taxation under the Income Tax Act.

Some municipalities charge a core service fee or tax-like payment to tax-exempt properties. For example, the federal government administers the Payments in Lieu of Taxes program which distributes funds on behalf of eligible tax-exempt institutions to property taxing authorities to compensate for valuable services such as stormwater management, police protection, fire protection, waste disposal and roads. If the City were to move to a stormwater charge for tax exempt federal properties, then the City would need to review how it distributes Payments in Lieu of Taxes payments.

If a municipality funds their stormwater management program through the General Tax Levy, then any desired increases in stormwater expenditures would require increasing taxes or decreasing spending in other areas that are funded through property taxes (e.g., parks, police, roads etc.).

Example Municipality: Many municipalities including the City of Brantford

2.2.2 Dedicated Tax Levy

A dedicated levy can be administered specifically to raise revenue for stormwater services, such that a fixed property tax rate is applied and itemized on the property owner's annual tax bill. A by-law would be required to dedicate these funds specifically to stormwater management. As with the general tax fund, money to support the stormwater management program comes from the City's overall tax rate and is not dedicated until the annual budget is set each year. Tax exempt properties would not contribute to a dedicated tax levy.

Example Municipality: City of Markham for non-residential properties

2.2.3 Advantages and Disadvantages

Funding a municipal stormwater management program through property taxes offers several advantages, including:

- Property-tax-based revenues are already accepted as the primary existing source of revenue for municipalities;
- Can be used to fund all stormwater management program activities; and
- The billing system already exists and is well established.

Funding a municipal stormwater management program through property taxes presents several disadvantages, including:

- Property taxes are based on a property's assessed value, which does not typically correlate with its runoff contribution, so the fairness and equity of this revenue source is low;
- Unpredictable. Except in the case of a dedicated tax levy, funding is not dedicated to stormwater and can be diverted to other municipal services;
- There is no incentive for property owners to reduce stormwater runoff and pollutant discharge which could potentially reduce City costs in the operation and renewal of the stormwater system;
- Tax-exempt properties, even those that are major producers of stormwater runoff, contribute very little (i.e., through payments in lieu of taxes) or nothing to support the stormwater management program; and
- Council and residents are sensitive to tax increases and the ability to increase funding is constrained.

2.3 Development Related Charges and Fees

2.3.1 Development Cost Charges

Municipalities are authorized to pass by-laws for the recovery of costs incurred to provide services to support growth. Development charges are a one-time cost that can only be utilized to fund eligible growth-related capital costs, and only for the services for which they were collected. The City of Hamilton uses development charges to fund capital costs related to growth but cannot use development charges for other aspects of its stormwater management program.

2.3.2 Cash-in-lieu Charges

In areas where there is the potential for re-development/infill, and on-site stormwater management facilities are required but deemed infeasible (e.g., insufficient land for sedimentation basin) contributions to off-site stormwater management facilities can be allocated in the form of a cash-in-lieu policy. Like development charges, the rates are based on the area of development (or number of dwelling units) and area-specific rates can be determined for different geographic locations within the community. Unlike development charges however, revenue derived from cash-in-lieu charges can be applied to both capital and O&M costs of stormwater management facilities. Cash in lieu charges are not typically the only source of stormwater funding but are used to complement other sources of funding.

2.3.3 Advantages and Disadvantages

Funding a municipal stormwater management program through development related charges offers several advantages, including:

- Accepted by the development community;
- Charges are based on contributing area, which is more equitable than property value; and
- This funding system exists and is well established within Hamilton.

Funding a municipal stormwater management program through development related charges offers several disadvantages, including:

- Charges are limited by the amount of developable land within the municipality and funds can only be used to support growth related projects;
- Directly dependent on growth and growth rates; and

- Development charges are limited to the capital costs associated with future development and cannot be used for O&M or most infrastructure renewal costs (except in the case of cash-in-lieu charges).

Example Municipality: City of Hamilton for some growth-related stormwater management (similar to most municipalities)

2.4 Grants

Funding opportunities for stormwater management projects are possible through grants to municipalities from a variety of governmental sources. Grant programs are often very competitive, based on project merits, and in many cases require matching funds. Grants also tend to be time-limited and not a reliable or predictable ongoing funding source. To be successful, the municipality must be proactive to take advantage of grant programs when available. Communities with an identified revenue stream will be in a better position to compete for and use the grant funds as they become available. Grant funding options include:

- Earmarked money from provincial/federal capital budgets including direct grants or gas tax revenues allocated to municipalities;
- Federal infrastructure funding programs;
- The federal government, through the Federation of Canadian Municipalities, has established grant funding under the Green Municipal Fund that could be used to support municipal governments and their partners in developing communities that are more environmentally, socially and economically sustainable (note: eligible projects may include feasibility studies, field tests, sustainable community plans, and capital projects that demonstrate leadership in sustainable development and serve as examples for other communities); and
- Research grants, typically in conjunction with a local university or other partners.

Grants are a useful mechanism for paying for some stormwater projects, particularly capital projects. City of Hamilton has received some grant funding in the past, including over $12 million from the federal government in 2019 to increase the City's resilience to climate change. However, since grants are generally unpredictable, grant funding is best suited for specific stormwater upgrade projects rather than for ongoing capital renewal.

Example Municipality: City of Hamilton for specific projects

2.5 Stormwater Rate

A stormwater rate is a financing mechanism that allocates costs to individual properties based upon a “user pay” formula, in a similar fashion as a water/wastewater rate. This is known as a stormwater utility in the U.S.

The principal advantage associated with a stormwater rate (except for the flat fee option) is that all parcels can be assessed a user fee that reflects their relative stormwater contribution to the municipal stormwater management system, including tax-exempt properties (e.g., places of worship, provincial and federal agencies, and other tax-exempt buildings and entities). The concept of charging a ‘usage-based fee’ to tax exempt properties is applied by water and sewer utilities.

Applying a user pay approach to water is simple, it is based on the amount of water one consumes, which is commonly measured continually through a meter. Applying a user pay approach to stormwater is slightly more challenging because you cannot continually measure the amount and quality of stormwater runoff from a property. However, you can approximate the amount of stormwater runoff by measuring or estimating the amount of impervious surface within a property. This will be discussed in more detail further on.

It is important to note that there is a large range of stormwater rates across Canadian municipalities. Some of them are very simple and are not proportional to the amount of stormwater runoff from a property (i.e., Calgary’s flat fee option), some of them are fairly simple and are loosely related to the amount of stormwater runoff from a property (i.e., London’s tiered flat fee option), whereas others are based on actual or estimated imperviousness and are therefore more proportional to the amount stormwater runoff from a property (i.e., Mississauga and Kitchener’s impervious based rate). In other words, some stormwater rates closely resemble a “user-pay” approach, whereas other stormwater rates do not really apply “user-pay” principles. Stormwater rates that apply a “user-pay” approach (i.e., impervious based rate) are considered more equitable but some municipalities prefer a simpler approach (i.e., flat fee option).

The fee for a stormwater rate is typically applied on a monthly, bimonthly, or occasionally annual basis. The revenue generated through a stormwater rate can be used for any stormwater management program related costs.

The basic calculation for a stormwater rate is simply the municipal stormwater management program expense divided by the number of billing units within the municipality. How one allocates the number of billing units to each property depends on the type of stormwater rate selected (e.g., allocate billing units based on land use, property size or impervious area). The following types of stormwater rates (and hence

billing unit methods) have been used throughout North America and are listed in increasing order of equity.

1. Flat Fee (e.g., Markham residential properties, Calgary).
2. Variable Rate Based on Land use, Property Size and/or Value:
    a) Tiered Flat Fee (e.g., Ottawa, London, Vaughan);
    b) Runoff Coefficient (e.g., Newmarket); and
    c) Intensity of Development Factor (e.g., Edmonton).
3. Variable Rate Based on Impervious Area:
    a) Equivalent Residential Unit – all residential properties pay the same fee, but non-residential properties pay based on impervious area (e.g., Guelph);
    b) Single Family Unit – different residential types pay different fees based on average footprint and non-residential properties pay based on impervious area (e.g., Barrie's pending new fee);
    c) Tiered Single Family Unit – in addition to the Single Family Unit funding model, single family detached homes pay different rates based on their size (e.g., Kitchener and Mississauga);
    d) Variable rate with geographical considerations (e.g., Ottawa which has different rates for rural and urban properties); and
    e) Impervious area measured for every property (e.g., Victoria).

These types of rates listed above are described further in the remainder of Section 2.5.

2.5.1 Flat Fee

Under a flat fee funding model, the charge does not vary according to property usage (e.g., a charge of $5 per month per water meter account).

Example: City of Calgary

2.5.2 Variable Rate – Based on Land Use/Property Size and/or Value

Industrial, commercial, institutional, and large multi-residential properties tend to have greater impacts on a municipal stormwater system than residential properties for two reasons:

1. They generally have more imperviousness resulting in higher peak flows and volumes of stormwater runoff; and

2. They generally include uses (such as surface parking) that create runoff with poor water quality.

Larger properties of a given land use also tend to have greater impacts on a municipal stormwater system for two reasons:

1. They generally require a greater length of network (e.g., fronting storm sewer or ditch to service the property); and
2. They generally have greater total imperviousness than other land uses of the same size.

Therefore, some municipalities, such as the cities of Edmonton, Vaughan, London, and Newmarket have decided that land use and/or property size is an appropriate approximation of a property's impact on the stormwater system and should form the basis to determine a stormwater rate for each property.

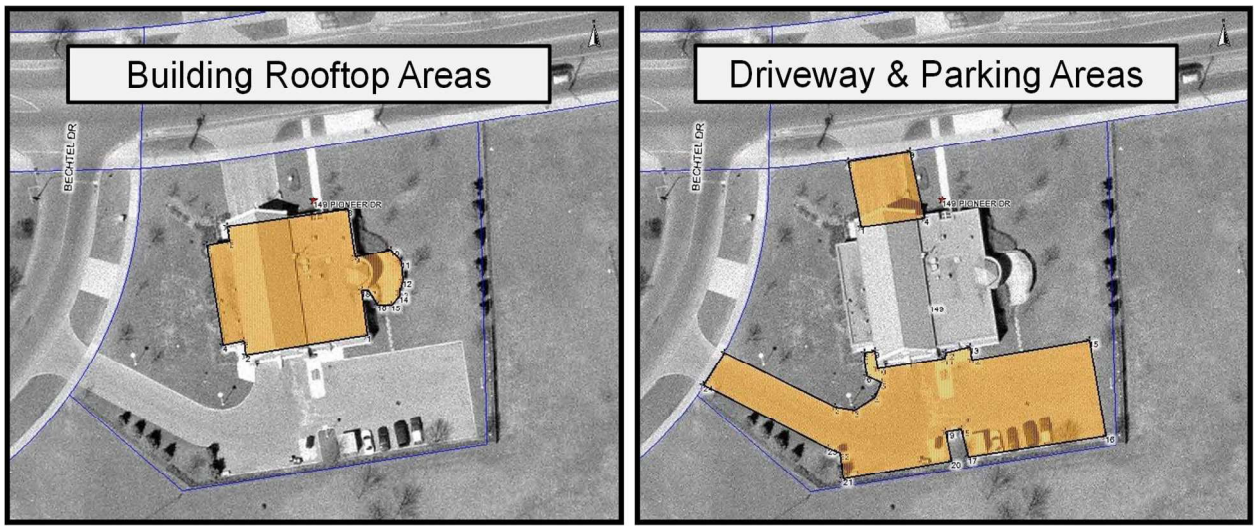
Three examples of a variable stormwater rate based on land use and property size that have been seen in Canada are:

1. **Tiered Flat Fee**: this extends the Flat Fee by offering different ratepayer categories (e.g., $5 per month per residential property, and $1,000 per year per commercial/industrial property). **Example:** City of London. The City of Vaughan has additional tiers that also consider property size and type of development ($51 for low-density residential, $33 for medium density residential, $46 for non-residential properties less than an acre, $1,187 for non-residential properties 1 to 10 acres etc.).
2. **Runoff Coefficient**: the charge varies by property size and an assumed stormwater runoff potential by property type. An example of this approach is the Town of Newmarket where they charge $0.017 per m^2 for natural areas, $0.082 per m^2 for residential/institutional properties and $0.163 per m^2 for commercial, industrial, and mixed-use buildings.
3. **Intensity of Development Factor**: like the Runoff Coefficient billing method however adjustment factors are applied to account for the property's development status (e.g., a factor of 0.0 for undeveloped properties, 1.0 for fully developed properties, and a factor between 0.0 and 1.0 for properties considered to be underdeveloped within their underlying zoning category). **Example:** City of Edmonton

2.5.3 Variable Rate – based on imperviousness

A variable rate based on impervious area accounts for the contribution of stormwater runoff from each property to the local drainage system (e.g., ditches, sewers, and channels) and water quality control facilities. The area of impervious ground cover (e.g., rooftops, driveways, and parking lots) is typically used as the basis for the stormwater rate because impervious area is a common indicator of stormwater flow and pollution discharge potential. **Figure 1** illustrates the impervious area for a non-residential property, highlighting the building footprint in the left panel and the driveway and parking areas in the right panel. The sum of these areas within the lot boundary represents the total impervious area for this property.

Figure 1: Example of Impervious Areas



Canadian cities with variable stormwater rates based on impervious area include Kitchener, Waterloo, Saskatoon, Mississauga, Guelph, and Victoria. A stormwater rate based on impervious area offers a more equitable funding mechanism than other funding sources, because fees assessed to each parcel of land are based on runoff contribution to the municipal stormwater management system rather than property value or size.

There will be certain properties with characteristics such that increased imperviousness does not correlate to increased runoff. Examples include developments that disconnect their impervious areas from the storm sewer/drainage system (e.g., by discharging onto pervious surface areas or into porous media). Likewise, developments that incorporate source controls or private stormwater management facilities prior to discharge to the municipal collection system should be charged less than developments that do not

adopt best management practices. These two examples reflect the characteristics that will allow an effective credit policy to be developed to reflect the differences between developed properties and highlight the ability of users to reduce fees by implementing initiatives that reduce their stormwater impact.

The use of impervious area as the basis for setting a stormwater rate is supported by standard manuals of practice. These manuals confirm the use of impervious area as a technically sound, fair, and equitable basis for allocating stormwater management program costs, and include the Water Environment Federation's *User-Fee-Funded Stormwater Utilities*. There are about one dozen municipalities in Canada with stormwater rates based on impervious area, and over 700 stormwater user fees across the U.S. based on measured impervious area.

The average impervious area per residential property is typically designated as the base 'billing unit' for the user fee structure. The impervious area of non-residential properties is then calculated as a factor of this base 'billing unit'. For example, if a commercial parcel has four times the impervious area of an average residential property, then the commercial parcel is charged '4 billing units' or four times the rate of a residential property.

There are many ways to develop a stormwater rate based on impervious area. Outlined below are five methods that are listed in increasing order of accuracy, complexity, and equity:

a) **Equivalent Residential Unit**:
All residential properties are charged the same fee based on an average impervious area and non-residential properties are charged based on actual measured impervious area. The residential fee is determined by a statistical sampling of measured impervious area for all types of residential dwelling units to determine the average Equivalent Residential Unit size (i.e., square metres of impervious area for the average residential dwelling). The average Equivalent Residential Unit size then becomes the base billing unit. Each residential property (regardless of density) is assigned one stormwater billing unit and charged the same fee. Given the wide variability in impervious area statistics for non-residential properties, the impervious area for each non-residential property is measured. The charge for non-residential properties is determined by dividing the measured impervious area by the average Equivalent Residential Unit size. **Example:** City of Guelph

b) **Single Family Unit**:
Residential properties are charged based on averages of different residential types and non-residential properties are charged based on actual measured impervious area. A statistical sampling of measured

impervious area for single-family detached homes is performed to determine the average Single Family Unit size (i.e., square metres of impervious area for the average single-family detached home). The average Single Family Unit size becomes the base billing unit with one stormwater billing unit assigned to each single-family detached home. Fractional billing units are assigned to other residential property types based on statistical sampling of their measured impervious area. Multi-family residential properties such as apartments, condominiums, and townhouses have a smaller footprint than single-family detached homes and would therefore be charged less than single-family detached homes. Given the wide variability in impervious area statistics for non-residential properties, the impervious area for each non-residential property is measured. The charge for non-residential properties is determined by dividing the measured impervious area by the average Single Family Unit size. One concern with this approach is that all condos pay the same based on the average condo footprint. Given that high rises have a very small footprint per dwelling unit, the City may want to consider treating high rises similar to non-residential properties, where the parcel is measured and assessed individually. This is feasible as the City has less than 1,000 parcels that could be considered as 'high-rise'. **Example:** City of Windsor's pending new stormwater rate

c) **Tiered Single Family Unit**:
The Tiered Single Family Unit billing unit method extends the Single Family Unit method by accounting for the variability in impervious area among single-family detached homes. Single family detached homes are charged different rates depending on which "tier" they fall into (e.g., small, medium, and large). **Example:** Cities of Kitchener and Mississauga

d) **Geography Base**:
the Equivalent Residential Unit and Single Family Unit billing unit methods can be extended to include separate rate structure calculations that vary by geographical boundaries. Some municipalities choose to have a lower rate in rural areas where there is a perceived lower level of service, even when this perception isn't accurate. **Example:** City of Ottawa

e) **Impervious Area Measurement** (Complete Coverage):
the most accurate of all billing unit methods is to measure the impervious area of all properties within a given jurisdiction. Closest example is the *City of Victoria* which uses building footprint for residential and measured imperviousness for non-residential properties. The City of Victoria has approximately 34,000 parcels.

As noted above, the methods listed are in increasing order of accuracy with respect to allocating charges among property types based on relative contribution of stormwater runoff and pollutant loading. However, with increasing accuracy the cost to develop and manage the stormwater rate also increases.

2.5.4 Advantages and Disadvantages

Funding a municipal stormwater management program through a stormwater rate offers several advantages, including:

- Dedicated funding source;
- Fair and equitable fee that is based on runoff contribution rather than property value (this will vary based on the type of stormwater rate selected);
- Costs for municipal stormwater management services are distributed to all privately and publicly owned developed properties within the municipality (i.e., includes tax exempt properties);
- With a credit program, provides an incentive for property owners to reduce stormwater runoff and pollutant discharge. Reducing the rate of stormwater runoff is particularly important in the City's combined sewer areas;
- A stable funding source for all stormwater management program activities to allow for long-range planning, large-scale capital improvements, and leverage for debentures;
- A mechanism to ensure privately owned stormwater management infrastructure is properly maintained; and
- Can take a variety of forms to tailor to a municipality's desire for simplicity or accuracy.

Funding a municipal stormwater management program through a stormwater rate presents several disadvantages, including:

- Additional implementation costs (e.g., rate study, database management, billing, and customer service). These costs would depend on the type of rate structure selected and the City's Geographic Information and billing systems;
- The need to update the billing system as properties redevelop; and
- Pushback from members of the public who do not want to see a "new fee".

Implementation costs for database management are typically less for municipalities like Hamilton that have a high-quality, established Geographic Information Systems and a soon to be newly established billing system.

We are aware of 20 to 30 municipalities across Canada that have either implemented or are in the process of implementing a stormwater rate (e.g., user fee).

2.6 Water/Wastewater Rate Surcharge

Historically, the earliest type of user fee for a public works utility was potable water, a consumption-based service. Not surprisingly, the earliest form of a user fee for a disposal-based service was wastewater. Many Ontario municipalities fund all or a portion of their wastewater programs through a rate surcharge added on the water utility bill. However, some municipalities, including the City of Hamilton, also fund all or a portion of their stormwater programs through a rate surcharge added on the water utility bill. **Example:** City of Hamilton.

2.6.1 Advantages and Disadvantages

Tracking revenue transfers can be complicated for municipalities that use a water rate surcharge to offset stormwater program costs. In addition, the fairness and equity of allocating stormwater costs based on water consumption might be challenged as it bears little relation to the amount of stormwater runoff generated from a property. Furthermore, since the wastewater charge and any related surcharges are based on water metering, there may be properties such as parking lots that would not contribute to stormwater management costs through a water rate even though they may generate significant stormwater runoff and pollutants. In addition, the City of Hamilton has thousands of properties not connected to the municipal water or wastewater system and would therefore not be contributing to stormwater management through their water/wastewater rate.

2.7 Comparison of Funding Options

The main funding options explored in this memo were evaluated using the following Guiding Principles that were endorsed by the City of Hamilton's General Issues Committee on November 30, 2022:

- **Fair and Equitable:**
  - Customer contributions are proportional to their impact on the system and the cost to run the system (i.e., user-pay).
  - User fees are non-discriminatory amongst customers and sectors.

- **Climate Resilient and Environmentally Sustainable:**
  - Encourages customers to become more resilient to climate change through adoption of on-site controls to reduce runoff, while providing the City with funding needed to increase system level stormwater resiliency and protect natural resources and waterbodies from the impacts of stormwater and the harmful pollutants it carries.
- **Affordable and Financial Sustainable:**
  - Provides sustainable, predictable, and dedicated funding.
  - Uses full cost pricing to meet entire stormwater revenue needs at the City's desired level of service.
  - Allows for regular fee reviews to keep pace with changes in the cost-of-service delivery or desired service levels.
  - Allows the City to address infrastructure deficiencies and unfunded liabilities.
  - Considers the financial impact on various customer sectors and is comparable with other municipalities.
- **Justifiable:**
  - Residents and businesses understand how much they contribute to stormwater management and for what the money is being used.
  - Customers have been consulted and involved in the decision-making process, particularly those that will be most affected.
  - Consistent with best practices and applicable laws to guarantee that the funding structure is justifiable and transparent if challenged.
- **Simple to Understand and Manage:**
  - Readily understood by staff, Council, and customers.
  - Efficiently maintained by City's staff.

The following table provides a summary of the stormwater funding option evaluation. A red 'X' indicates that the funding model does not support the specific Guiding Principle, a yellow hatched circle indicates that the funding model somewhat supports the Guiding Principle, and a green checkmark indicates that the funding model supports the Guiding Principle well. It is clear from the table that the stormwater funding models that best align with the Council approved Guiding Principles are the three impervious based stormwater rates (Equivalent Residential Unit, Single Family Unit and Tiered Single Family Unit). It was then decided to proceed with the quantitative assessment (property and rate analysis) to better evaluate those three funding models. The results of the quantitative assessment are provided in the following sections of the report.

Table 2: Comparison of Stormwater Funding Options

Stormwater Funding Model	Used By	Stormwater Rate Based On	Fair & Equitable	Climate Resilient	Environmentally Sustainable	Affordable	Financially Sustainable	Justifiable	Simple to Understand & Manage
General Tax Levy	Brantford	Assessed value	✗	✗	✗	◍	✗	✗	✓
Dedicated Tax Levy (Markham)	Markham	Assessed value	✗	✗	✗	◍	◍	✗	✓
Water/Wastewater Rate (Hamilton, Toronto)	Hamilton Toronto	Water consumption	✗	◍	✗	◍	◍	✗	✓
Stormwater Rate – Tiered Flat Fee	Ottawa Vaughan London	Property type, size	✗	◍	◍	◍	✓	◍	◍
Stormwater Rate – Equivalent Residential Unit	Guelph	Impervious area (but all residential types pay the same)	◍	✓	✓	◍	✓	✓	◍
Stormwater Rate – Single Family Unit	Barrie	Impervious area (but all single family dwellings pay the same)	✓	✓	✓	◍	✓	✓	◍
Stormwater Rate – Tiered Single Family Unit	Mississauga Kitchener	Impervious area	✓	✓	✓	◍	✓	✓	✗

3. Parcel Analysis

3.1 Quantity of Property Types

The number of properties by property type in the City of Hamilton was determined using Municipal Property Assessment Corporation land use codes and is summarized in the following table.

Table 3: Number of Parcels by Property Type

Land Use	Number of Parcels	Total Estimated Impervious Area (Sq. meters)	Number of Dwelling Units	% of Total Parcels	% of Total Dwelling Units
Residential					
Residential SFD (in Urban Boundary)	113,597	33,110,498.42	113,597	69%	53%
Residential SFD (outside Urban Boundary)	9,309	5,551,322.19	9,309	6%	4%
Residential Semi Detached	6,838	1,167,538.69	6,838	4%	3%
Residential Duplex	2,210	503,381.46	4,420	1%	2%
Residential Triplex	801	202,466.34	2,403	0%	1%
Residential Fourplex	272	87,603.62	1088	0%	1%
Residential Fiveplex	87	34,109.69	435	0%	0%
Residential Sixplex	134	58,864.88	804	0%	0%
Residential Link Home	1239	276,441.33	1239	1%	1%
Residential Townhouse (Freehold)	11722	1,645,414.39	11722	7%	5%
Residential MultiFamily - Building	683	1,562,650.15	33162	0%	16%
Residential MultiFamily - Towns	143	685,413.15	5266	0%	2%
Residential Condo - Standard - Building	149	619,420.25	10288	0%	5%
Residential Condo - Standard - Detached	31	118,921.13	408	0%	0%
Residential Condo - Standard - Towns	402	1,968,400.72	12350	0%	6%
Residential Totals	***147,617***	***47,592,446***	***213,329***	***89%***	***100%***
Other					
Nonresidential (and Nonresidential Condo)	7,719	48,100,000	-	5%	
Mixed Use (and Mixed Use Condo)	4,244	8,500,000	2,875	3%	
Miscellaneous	738	800,000	3,470	0%	
Undeveloped	5,058	-	-	3%	
Other Totals	***17,759***	***57,400,000***	***6,345***	***11%***	
GRAND TOTAL	**165,376**	**104,992,446**	**219,674**	**100%**	

Important observations from the property analysis include:

- 89 percent of the parcels are residential. Therefore, a financial model that required individual assessment of all/most residential properties would be labour intensive.
- Only 11 percent of the parcels are not residential. Therefore, a financial model that required individual assessment of all/most non-residential properties would not be too labour intensive or costly to develop and maintain.

- 75 percent of the parcels are single family dwellings. Therefore, a financial model that required individual assessment of all/most single-family dwellings would be labour intensive and costly to develop and maintain.
- There is a large range of residential property types. 57 percent of the dwelling units are single family dwellings, but 43 percent represent other residential types. Therefore, a financial model that treated all residential properties the same would not be equitable.

The photos below show examples of the different residential types that can be found in the City of Hamilton, including a detached home outside the urban boundary.

Photo 1: Small Detached Home

Photo 3: Large Detached Home

Photo 2: Medium Detached Home

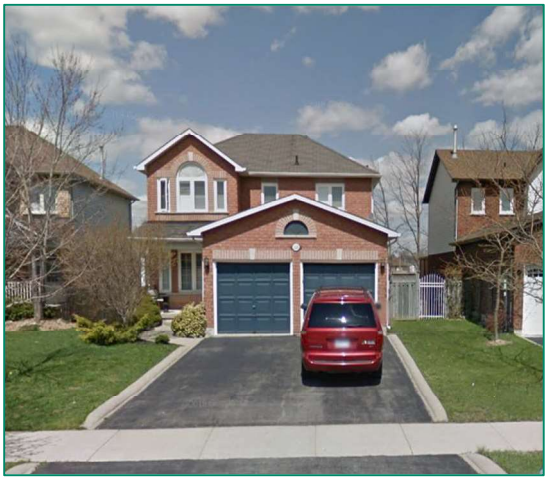


Photo 4: Detached Home Outside UB

Photo 5: Semi Detached

Photo 6: Link

Photo 7: Townhome

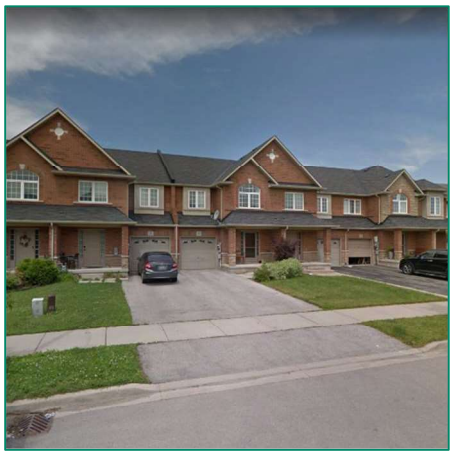


Photo 8: Plex

Photo 9: Multifamily

Photo 10: Condo

3.2 Average Impervious Area by Residential Property Types

The next step in the quantitative assessment is to determine the average impervious area by residential property type by sampling a statistically significant number of properties. The table below shows the number of properties sampled.

Table 4: Number of Residential Properties Sampled

Residential Land Uses	# of Parcels	% of Total Parcels	# of Dwelling Units	% of Total Dwelling Units	# of Units/ Parcels Sampled
Residential SFD (in Urban Boundary)	113,597	77.0%	113,597	53.2%	349/349
Residential SFD (outside Urban Boundary)	9,309	6.3%	9,309	4.4%	315/315
Residential Semi Detached	6,838	4.6%	6,838	3.2%	302/302
Residential Duplex	2,210	1.5%	4,420	2.1%	448/224
Residential Triplex	801	0.5%	2,403	1.1%	258/86
Residential Fourplex	272	0.2%	1088	0.5%	148/37
Residential Fiveplex	87	0.1%	435	0.2%	85/17
Residential Sixplex	134	0.1%	804	0.4%	156/26
Residential Link Home	1239	0.8%	1239	0.6%	133/133
Residential Townhouse (Freehold)	11722	7.9%	11722	5.5%	312/312
Residential MultiFamily - Building	683	0.5%	33162	15.5%	4092/79
Residential MultiFamily - Towns	143	0.1%	5266	2.5%	747/24
Residential Condo - Standard - Building	149	0.1%	10288	4.8%	1760/24
Residential Condo - Standard - Detached	31	0.0%	408	0.2%	
Residential Condo - Standard - Towns	402	0.3%	12350	5.8%	1736/48
	147,617	**100%**	**213,329**	**100%**	**10841/1976**

The average impervious area by residential property type is shown in the following table. Impervious area is considered as anything that does not permit the natural infiltration of rainwater into the ground. It includes rooftops, asphalt (e.g., driveways), compacted gravel (e.g., gravel that is regularly driven on by motor vehicles), concrete (e.g., walkways) and pavers (unless they are designed for infiltration).

The table also shows the ratio of average impervious area by property type compared to the most common residential type - the average single-family detached dwelling within the urban boundary. If we assign the single-family detached dwelling within the urban boundary one single family unit (which will equate to one billing unit), then the other property types are assigned a single family unit value based on their relative impervious area.

Table 5: Average Impervious Area by Residential Property Type

HAMILTON Land Use Analysis Land Use	Number of Parcels	Number of Dwelling Units	EST. Impervious Area Per Unit (Sq. meters)	SFU Values
Residential SFD (in Urban Boundary)	113,597	113,597	291.00	1.00
Residential SFD (outside Urban Boundary)	9,309	9,309	596.00	2.05
Residential Link Home	1,239	1,239	223.00	0.77
Residential Semi Detached	6,838	6,838	171.00	0.59
Residential Townhouse (Freehold)	11,722	11,722	140.00	0.48
Residential Condo	582	23,046	117.00	0.40
Residential Duplex	2,210	4,420	114.00	0.39
Residential Triplex	801	2,403	84.00	0.29
Residential Fourplex	272	1,088	81.00	0.28
Residential Fiveplex	87	435	78.00	0.27
Residential Sixplex	134	804	73.00	0.25
Residential MultiFamily	826	38,428	58.00	0.20
Residential Totals	**147,617**	213,329		

Important observations from the residential impervious area sampling are listed below.

- The average rural single-family detached dwelling has twice the impervious area as the average urban single family detached dwelling.
- There is a large range in impervious area per dwelling unit so a funding model where all dwelling units paid the same would not be equitable.
- Certain types of dwelling units have similar impervious area per unit (e.g., triplex, fourplex and fiveplex) and could be "grouped" to limit the number of residential categories and simplify the funding model.

Due to the range of residential property types and the differences in impervious area, it was determined that an Equivalent Residential Unit funding model where each dwelling unit pays the same, would not be equitable. Therefore, the analysis continued with the Single Family Unit (where all single family detached homes pay the same but multi-residential units pay less based on their average footprint) and the tiered Single Family Unit (where single family detached homes are put into different tiers based on their size). To limit administrative efforts, Single Family Unit based funding models will often group similar residential categories into the same 'class'. Based on the impervious area sampling, we worked with City staff to identify four proposed residential classes for the City of Hamilton. These classes, which are shown by colour code in the following table, can be described as follows:

- All single family detached homes, linked homes and detached condos pay one billing unit per dwelling unit;
- All semi-detached, townhouses, multi-family homes in towns, condos in towns and duplexes pay 0.5 billing units per dwelling unit;

- All multi-plexes pay 0.3 billing units per dwelling unit; and
- All high-rises (i.e., multifamily and condo buildings) and mixed-use properties (e.g., condos over a commercial unit) are assessed individually. There are not many of them but individual assessment would lead to a more equitable assessment of these dense forms of development.

Table 6: Proposed Residential Classes for a Single Family Unit Based Model

Parcel Type	Number of Parcels	Dwelling Units (d.u.)	Est'd Impervious Area (m^2)		Calculated SFU Factor	Assigned SFU Factor
			Total	Avg/d.u.		
Residential SFD (in Urban Boundary)	113,597	113,597	33,110,498	291.47	1.00	1.00
Residential SFD (outside Urban Bound	9,309	9,309	5,551,322	596.34	2.05	1.00
Residential Link Home	1,239	1,239	276,441	223.12	0.77	1.00
Residential Condo - Standard - Detach	31	408	118,921	291.47	1.00	1.00
Residential Semi Detached	6,838	6,838	1,167,538	170.74	0.59	0.50
Residential Townhouse (Freehold)	11,722	11,722	1,645,414	140.37	0.48	0.50
Residential MultiFamily - Towns	143	5,266	685,413	130.16	0.45	0.50
Residential Condo - Standard - Towns	402	12,350	1,968,400	159.38	0.55	0.50
Residential Duplex	2,210	4,420	503,381	113.89	0.39	0.50
Residential Triplex	801	2,403	202,466	84.26	0.29	0.30
Residential Fourplex	272	1,088	87,603	80.52	0.28	0.30
Residential Fiveplex	87	435	34,109	78.41	0.27	0.30
Residential Sixplex	134	804	58,864	73.21	0.25	0.30
Residential MultiFamily - Building	683	33162	1,562,650	47.12		assessed individually
Residential Condo - Standard - Building	149	10288	619,420	60.21		assessed individually
Residential Subtotal	**147,617**	**213,329**	**47,592,440**			45%
Industrial/Comm/Institutional	7,719	n/a	48,100,000	n/a	n/a	n/a
Miscellaneous	738	3,470	800,000			
Mixed Use (and Mixed Use Condos)	4,244	2,875	8,500,000			
Non-Residential Subtotal	**12,701**		**57,400,000**			55%
Undeveloped	5,058		0			0%
Total	**165,376**		**104,992,440**			100%

We reviewed the range of impervious area amongst single family detached homes and compared it with other municipalities; the results of which are shown in the following table. More specifically we looked at the:

- 10th percentile: the size below which 10% of the City's smallest single family detached homes lie;
- 50th percentile: also known as the average or the mean; and
- 90th percentile: the size above which 10% of the City's largest single family detached home lie.

Table 7: Impervious Area of Single Family Detached Homes Across Ontario (m²)

Parcel Type	Ajax	Barrie	Guelph	Thunder Bay	Waterloo	Brantford	Sault Ste Marie	Kitchener	Stratford	Markham	Hamilton	Mississauga	Ottawa
Smallest 10%	143	160	175	161	164	163	194	168	181	188	**160**	184	118
Average	229	236	250	303	266	259	328	259	283	294	**312**	267	249
Largest 10%	317	314	328	469	353	365	505	344	399	448	**478**	364	373
90/10 ratio:	2.2	2.0	1.9	2.9	2.2	2.2	2.6	2.0	2.2	2.4	**3.0**	2.0	3.2

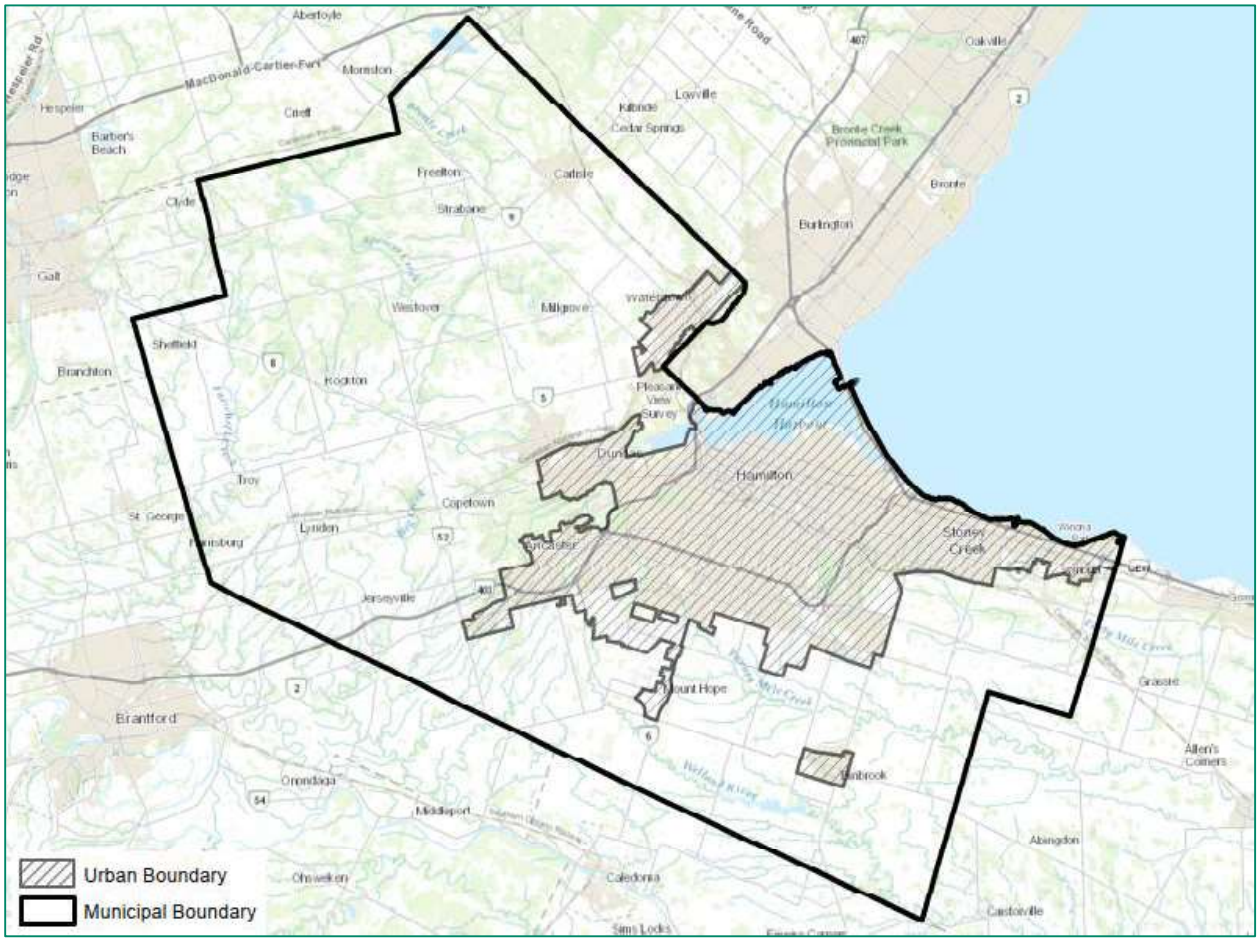
We found that in the City of Hamilton the 90th percentile was three times larger than the 10th percentile. This means that the largest ten percent of the homes are at least three times larger than the smallest ten percent of the homes. This spread between the largest and smallest homes is the second largest amongst Ontario municipalities measured. Only Ottawa had a larger spread. We also found that the average Hamilton single family detached home is the second largest amongst Ontario municipalities measured. Only Sault Sainte Marie had a larger average single family detached home.

Using the City's aerial photography, we estimated the amount of impervious area amongst non-residential properties. We found that 55 percent of the City's total impervious area was within non-residential properties.

3.3 Rural vs Urban Analysis

As can be seen in the following figure, the City of Hamilton has a large rural component.

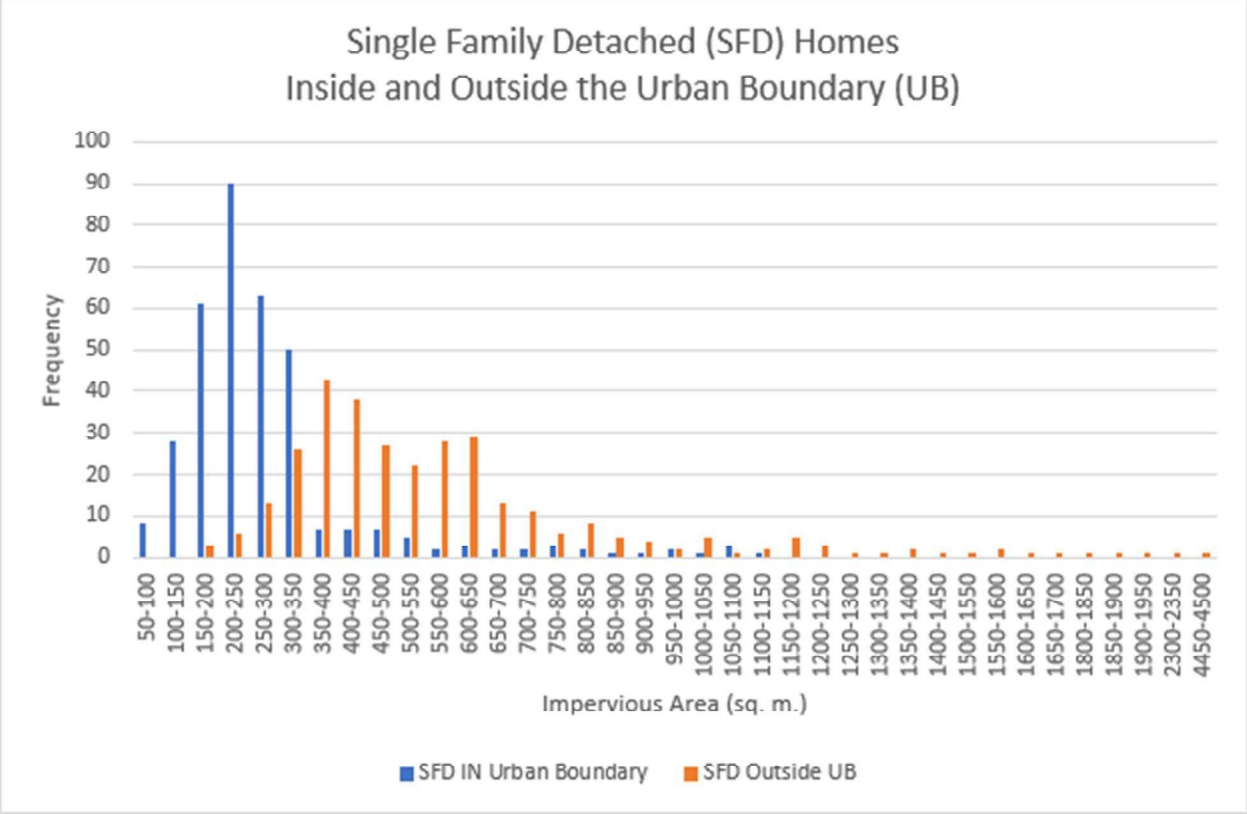
Figure 2: City of Hamilton's Rural and Urban Areas



As most of the current stormwater funding comes from water/wastewater revenues, rural properties that do not have a water and/or sewer connection will only contribute a small amount through their property taxes. If the City were to move towards an impervious based stormwater charge, then rural properties would contribute to stormwater funding through this new charge. To assess the equity of applying a stormwater charge to rural properties, we determined the average impervious area of rural residential properties (i.e., how much runoff do they generate) and the City's current stormwater expenditures in rural areas (i.e., how much direct benefit do they receive from the City's stormwater program).

We found that the average single-family detached dwelling outside the urban boundary had twice as much impervious area (596 sq. m.) as the average single-family detached dwelling within the urban boundary (291 sq. m.). The distribution of sizes of homes that were measured is shown on the following figure.

Figure 3: Distribution of Single Family Detached Homes Inside and Outside the Urban Boundary



We estimated that the average rural home contributes $16 per year towards stormwater management through property taxes. We also estimated that all properties outside the urban boundary combined contribute nearly $401,000 towards stormwater management

through property taxes. In 2022, we estimated that the City spent over $2.6 million on drainage projects within rural areas. We therefore concluded that rural properties have been paying less than their fair share towards the City's stormwater management program. We also concluded that if the City were to implement an impervious based stormwater rate where rural single family detached homes paid the same as urban single family detached homes, then rural properties may still be under-contributing, but it would be more equitable than the current stormwater funding system.

4. Stormwater Funding Requirements

The City currently funds it stormwater management activities through the following sources:

- Contributions to the Conservation Authorities and some rural road related drainage is paid for through the general levy (property taxes); and
- The remaining funding needs come from the City's water/wastewater utilities' revenues.

The following table outlines the water/wastewater utility revenue needs for 2021-2025. It shows that currently approximately ten percent of the water/wastewater utility revenue goes towards stormwater but this will need to increase. It also shows that the average property will need to contribute over $100 per year towards stormwater management through its water/wastewater utility bill. This is in addition to the contribution through property taxes.

Table 8: Water/Wastewater Utility Revenue Needs for 2021-2025

	Storm Operating (Rate Budget) $000	Combined W / WW / Storm $000	% for Storm Program	Annual Avg Bill	Stormwater Contribution
2021 Approved Budget	$ 25,311	$ 245,555	10.3%	$ 785	$ 81
2022 Approved Budget	$ 24,759	$ 257,851	9.6%	$ 824	$ 79
2023 Approved Budget	$ 28,281	$ 272,447	10.4%	$ 877	$ 91
2024 Forecasted Budget	$ 33,844	$ 298,647	11.3%	$ 965	$ 109
2025 Forecasted Budget	$ 36,643	$ 328,154	11.2%	$ 1,062	$ 119

The following table outlines the updated stormwater budget by funding source for 2023-2025. The stormwater budget is forecasted to increase from $43 million to $54 million over three years.

Table 9: Future Stormwater Budgets

$000	Storm Operating (Rate)	Conservation Authorities (Tax Levy)	Roads Maintenance (Tax Levy)	Credit / Incentive Programs (New)	Administration (New)	**Total Stormwater Program**
2023 Approved Budget	$ 30,284	$ 9,108	$ 3,880	n/a	n/a	**$ 43,272**
2024 Forecasted Budget	$ 35,928	$ 9,288	$ 3,927	n/a	n/a	**$ 49,143**
2025 Forecasted Budget	$ 38,810	$ 9,472	$ 3,986	$ 1,574	$ 200	**$ 54,043**

5. Rate Analysis

To further our assessment of what a Single Family Unit and tiered Single Family Unit stormwater funding model would look like for the City of Hamilton, we estimated what the resulting average rate would be for different property types. The first step is to determine the rate for one billing unit which is calculated by dividing the required revenue by the number of billing units.

Using the impervious area calculations presented in the previous section we determined the total of billing units. One billing unit is equivalent to the average impervious area of a typical single-family detached dwelling. For the City of Hamilton, we used 291 square metres as one billing unit as this is the average impervious area of a single-family detached dwelling within the urban boundary. This resulted in 343,000 billing units. We reduced this number by 8% percent to account for possible future credits and non-payments.

The required revenue is the cost of stormwater management activities (e.g., capital investment, maintenance, studies etc.) plus the cost of administering the stormwater rate. As Council directed staff to determine the feasibility of implementing a stormwater funding model in 2025, we used the total 2025 stormwater budget requirements of $54 million.

As the required revenue is $54 million and the estimated number of billing units is 343,000 (minus 8%), the resulting rate per billing unit is $14.20 per month or $170 per year. The rates for different property types are provided in the following table.

Table 10: Estimated Rates for a Single Family Unit Based Model

Stormwater Budget	$54 million	# Dwelling Units per charge
Program Cost	$54,040,000	
Base Rate ($/SFU/mo)	$14.20	
Representative Property	**Annual Charge**	
Residential SFD (in Urban Boundary)	$170	1
Residential SFD (outside Urban Boundary)	$170	1
Residential link home	$170	1
Residential condo - standard - detached	$170	1
Residential semi detached	$85	1
Residential townhouse (freehold)	$85	1
Residential multifamily - towns (average)	$3,138	18.4
Residential condo - standard - towns	$85	1
Residential duplex	$170	2
Residential triplex	$153	3
Residential fourplex	$204	4
Residential fiveplex	$256	5
Residential sixplex	$307	6
ICI (average)	$3,643	n/a
Miscellaneous (average)	$634	n/a
Undeveloped	$0	n/a
Mixed use & mixed use condos (average)	$1,171	n/a
Residential multi-family buiding (average)	$1,338	7.8
Residential condo - standard - building (average)	$35	1

The rates consider the number of dwelling units within a property. For instance, a duplex is 0.5 billing units per dwelling unit x 2 dwelling units = 1 billing unit. Likewise, a triplex is 0.3 billing units per dwelling unit x 3 dwelling units = 0.9 billing units. The presented rate for apartments is an average only as the actual rate will depend on the number of dwelling units within a building. The presented rate for non-residential properties is also an average as the actual rate will be determined for each parcel individually.

If the City were to consider a tiered Single Family Unit model where the single family detached homes are broken into tiers based on their size, then the resulting rates are shown in the following table.

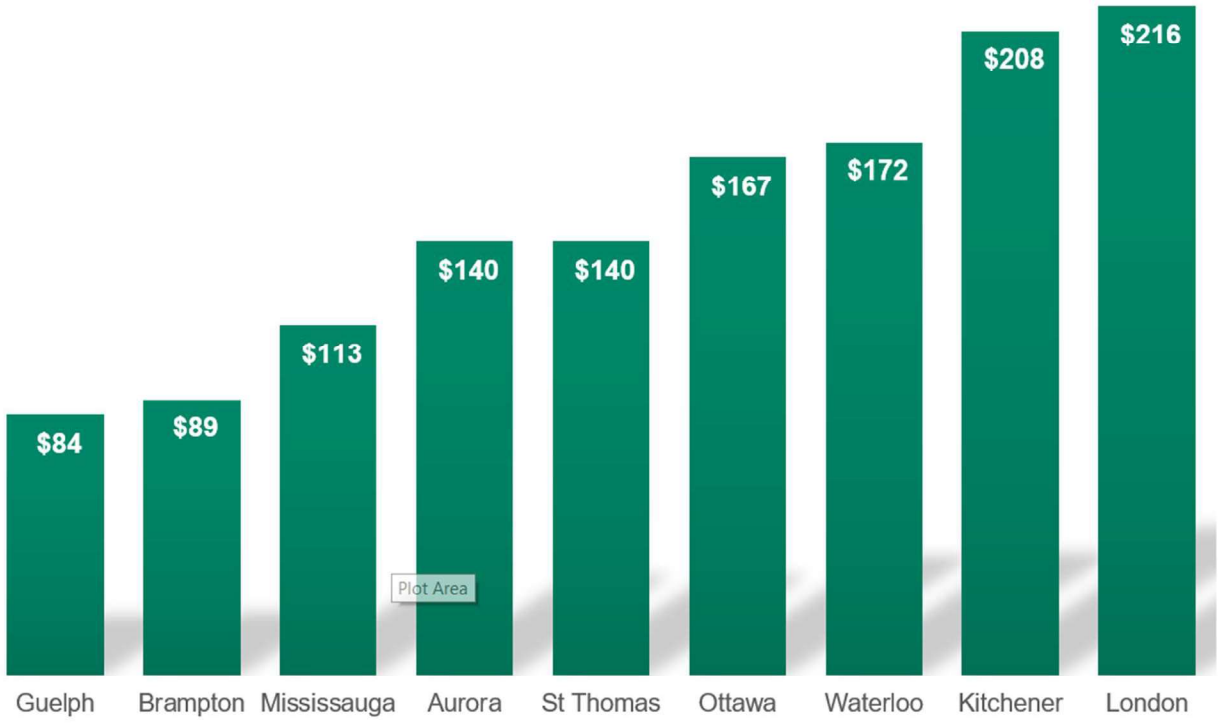
Table 11: Estimated Rates for a Tiered Single Family Unit Based Model

Tiered Single Family Unit Based Model	$54 million Annual Budget
Small Single Family Detached (10th percentile)	$85 (lowest 10%)
Medium Single Family Detached (average)	$170 (middle 80%)
Large Single Family Detached (90th percentile)	$255 (upper 10%)

A Single Family Unit model is fairly easy to administer because a residential property's rate is determined based on its Municipal Property Assessment Corporation code. Since 89% (or 147,000) of the parcels are residential, the rate for the large majority of the properties can be determined "automatically". Moving to a tiered Single Family Unit requires assessing and categorizing the single family detached homes which make up 83% of the parcels. Despite the extra administrative effort some municipalities, such as the City of Mississauga, implemented a tiered Single Family Unit stormwater funding model.

The stormwater charge for the average single family detached for several municipalities in Ontario are shown in the following figure. The estimated charge of $170 for the City of Hamilton is close to Ottawa and Waterloo's rates.

Figure 4: Stormwater Charge for the Average Single Family Detached Home



6. Implementation Considerations

6.1 Public Communication

A communications plan should be prepared for any proposed stormwater funding model change. The plan should confirm the project's communication objectives and clearly distinguish between areas where the City would simply like to inform or educate stakeholders/the public versus areas where they are seeking feedback and engagement. The different forms of public communication are outlined below.

- **Information/education** – what changes are happening, why it is important and how it will affect you/the public. It is important to communicate the importance of stormwater management and the issues that the City is facing.
- **Consultation** – asking for feedback on items that have not yet been decided upon. The feedback will be used to develop the program and make decisions. This is often used in the development of a credit program. It is important to be clear on what the project team is seeking feedback. The City does not want to appear disingenuous in the consultation process by asking for feedback on matters that have already been decided.
- **Engagement** – describes how the public can get involved and encourages them to do so (e.g., support the rate, implement best practices that will give them credits etc.).

Typical stormwater management funding communication methods include:

- City website with stormwater management funding review updates, Frequently Asked Questions, education videos, proposed fees by property type/address, etc.;
- On-line survey;
- Updates via social media;
- Letters to property owners (all or those who will be most affected); and
- Utility and/or tax bill inserts.

Identifying property owners who would experience the biggest impact with the proposed funding model change will help target communication efforts. Webpage content would be hosted on Engage Hamilton and notices for public engagement opportunities would typically be distributed through traditional and social media. Educational material should be graphical in nature and non-technical so that it can be clearly understood by all stakeholders.

Communication material such as Frequently Asked Questions and videos should provide information on “What is stormwater management”, “Why is it important”, “Why is the City considering a new stormwater funding model, and the benefits it would provide”, and “How can citizens get involved”.

It is important to note that if the City were to move to a stormwater rate based on imperviousness, then there would be many properties that would likely benefit financially, such as small drycleaners, food processing facilities and breweries. These types of properties typically consume a lot of water and therefore contribute significantly towards stormwater under the City’s existing stormwater funding model. In contrast, properties such as parking lots, typically do not currently contribute significantly to stormwater management despite the amount of stormwater runoff they generate. If their stormwater management contributions were changed based on impervious area, then they should be notified in advance so that they could budget accordingly.

In May, AECOM with City staff conducted two meetings: one with Environment Hamilton and one with the Hamilton Industrial Environmental Association. Both presentations were well received, and Environment Hamilton was particularly supportive of the concept of an impervious based stormwater funding model. Some of the Hamilton Industrial Environmental Association members posed questions on whether and how properties that treat stormwater on-site and then discharge it directly to the harbour/Lake Ontario, would be charged for municipal stormwater management.

6.2 Timeline & Resources Required

Once the City implements its proposed new tax and utility billing systems, a new stormwater funding model could be implemented within a year. The exact timeline and resources required will depend on the funding model selected. Typical tasks, timelines and resources required are outlined in the following table.

Table 12: Typical Tasks for Implementing a New Stormwater Funding Model

#	Task	Timeline	Typical Task Owner	Other Resources
1	Management & Council approval	approximately 3 months	Finance	Engineering/ Water
2	Develop and implement a public communication plan	2 to 6 months	Communications	
3	Confirm desired stormwater revenues	1 to 2 months	Finance	Engineering/ Water

#	Task	Timeline	Typical Task Owner	Other Resources
4	Complete parcel analysis and determine number of billing units	1 to 3 months	Finance	Geomatics, consultant
5	Develop a credit/rebate program (if desired)	2 to 4 months	Engineering/ Water	Finance
6	Develop policies, procedures, and forms (e.g., appeals review process, updating billing units following redevelopment etc.)	3 to 5 months	Finance	Engineering/ Water, consultant
7	Prepare a new by-law	9 to 12 months	Legal	
8	Develop a master billing file	1 to 3 months	Finance	Consultant
9	Configuration of billing system	1 to 3 months	Finance	IT, billing system provider
10	Billing testing	2 months	Finance	IT, billing system provider
11	Printing bills & mail-out	1 month	Finance	

Many of the tasks above can be done in parallel and some can be done in advance of the City implementing its new billing systems (e.g., Tasks 1 to 7). Municipalities that have implemented a new stormwater fee report that 1 to 2 additional resources can be required in the first year or two to assist with implementation and customer queries. However, once the rate is up and running, these same municipalities report that minimal resources are typically required to keep the stormwater rate going.

Tasks that are required on an ongoing basis (i.e., after implementation) are outlined below.

Table 13: Typical Tasks for Maintaining a New Stormwater Funding Model

#	Task	Effort	Typical Task Owner	Other Resources
1	Customer support	Busiest in first 2 billing cycles	Customer Service (initial screening, answer easy queries)	Finance, Engineering/ Water (answer more challenging Q's)
2	Review appeals	Busiest in first 2 billing cycles	Finance	Engineering/ Water
3	Review credit applications	Busiest in first year, most applications will be from existing developments.	Engineering/ Water	

#	Task	Effort	Typical Task Owner	Other Resources
4	Update billing (new development, changes in ownership etc.)	Ongoing	Finance	Planning
5	Update rates (budget increases)	Annual update	Finance	Engineering/ Water
6	Printing bills & mail-out	Ideally combined with water & wastewater	Finance	

The Kitchener implementation study recommended automating the credit system process as much as possible. Kitchener estimated its administrative costs as 1.3% of the total stormwater utility budget. Similar administrative costs have been reported by stormwater utilities in the U.S. for the first year of implementation with decreasing costs in subsequent years.

6.3 Financial Incentives

Financial incentives typically include credits and rebates. Credits are an ongoing reduction in a property's stormwater charge whereas a rebate is a one-time contribution towards the implementation of a stormwater measure.

A stormwater user fee credit program provides financial incentives by offering a reduction to landowners who implement and maintain measures, practices, or activities that help reduce the load on the City's stormwater management services. That is, property owners who reduce the amount of stormwater runoff or who improve the quality of the stormwater runoff that discharges from their property into the municipal stormwater management system and/or surrounding waterbodies may qualify for a credit and receive a reduction in their fee. Credits could be given for measures that provide flooding and erosion protection, water quality treatment, and other environmental enhancements or non-structural best practices.

Credits are typically provided on an ongoing basis for as long as the landowner has the measure, practice or activity implemented and can demonstrate that it is being maintained. Whereas rebates are a one-time payment or discount on the capital cost of implementing stormwater controls such as rain barrels, rain gardens or disconnected downspouts. This "one-time" charge reduction can help to encourage the implementation of a measure, practice, or activity. It can also be easier to administer, but since there is no follow-up, there is no mechanism to ensure that the measure, practice, or activity is still active and working as designed.

Credit programs have been very popular with Canadian municipalities that have implemented stormwater user fees and continue to be requested by stakeholders and members of the public, even if many property owners don't apply for them. There are many benefits to the implementation of a stormwater credit program, including:

- Provides incentive to landowners to reduce stormwater runoff and pollutant discharge from their properties. Reducing the rate of stormwater runoff is particularly important in the City's combined sewer areas.
- Helps the City establish an inventory of on-site measures and allows the City to confirm that they are being maintained and continue to provide the stormwater benefits for which they were designed.
- Provides an opportunity to landowners to reduce their stormwater fee.
- May reduce the City's operation/maintenance and capital costs by managing stormwater before it is discharged into the municipal stormwater management system.
- May reduce the impact of stormwater runoff on the environment through a "treatment train" approach that includes widespread management of stormwater runoff at its source.
- Increases stormwater awareness through the credit application process as well as broader outreach through new public education programs and other credit eligible activities.
- Increases landowner acceptance of a proposed stormwater rate, by offering a means by which they can reduce the rate.
- Reinforces the link between cost of service and fairness/equity of the charge allocation (i.e., if the philosophy of the rate is "the more you contribute; the more you pay" then the opposite case underlies the philosophy for a credit program "the less you contribute, the less you pay").

A property's stormwater fee consists of a base charge along with any associated adjustments (e.g., grant or credit). Once a property's base charge has been calculated a credit could then be applied to reduce that fee. Credits are typically requested through an application process and if approved, would result in a reduced rate for individual property owners that have installed, operate, and maintain eligible stormwater facilities or practices on their property. In some jurisdictions, credits can be awarded for reducing the amount of imperviousness on a property if a rate adjustment policy does not already account for this.

The initial credit application process typically includes supporting documentation such as:

- An engineering design report for any constructed facilities such as a detention pond; and
- Certified letter stating that the property owners will operate and maintain the facilities as prescribed and granting property access to City staff for inspection.

Credit applications are often renewed on a regular basis (e.g., every one to five years) sometimes with requirements to provide documentation of maintenance (e.g., cleaning of an oil-grit separator). Offering credits does reduce a utility's revenue but most Canadian municipalities that offer credit programs have found it results in a revenue reduction of less than 5%. This resulting reduction in revenue should be considered when estimating revenue requirements and determining stormwater rates for each property to ensure that the program still has the total revenue required.

A maximum credit allowance for any individual property is assigned based on the expected reduction in municipality-wide capital and operating costs. Efforts to reduce the amount and improve the quality of stormwater runoff from properties will result in some cost savings in the operation, maintenance, and renewal of the municipal stormwater management system. However, the City typically has some fixed costs that must be funded by the utility. For example, if property owners reduced imperviousness on their sites and peak flows were reduced by 50% then the Town would likely be able to replace an existing drainage pipe with a smaller pipe when it gets to the end of its useful service life. Reducing the size of a pipe may reduce construction costs by 10 to 25%, but there will still be a cost for replacing the pipe, regardless of its size.

Even if some properties can eliminate all stormwater discharges from their site, their site will likely be accessed by roadways that include drainage and stormwater management functions. Therefore, it is important that properties still contribute to these base (fixed) costs of operating, maintaining, and renewing the municipal stormwater management system even if they can reduce the amount and improve the quality of stormwater runoff from their site. To account for this, other municipalities in North America who have implemented stormwater utilities typically provide credits for up to a maximum of 40 to 50% of the total stormwater rate, although it varies widely from 25 to 75%. The Cities of Kitchener and Waterloo determined a maximum credit of 45% reflected the proportion of each City's stormwater program costs that could potentially be influenced by stormwater measures or activities on individual properties. The City of Mississauga identified a maximum allowable credit of 50%. The following table summarizes Mississauga's credit program for multi-residential and non-residential properties.

Table 14: City of Mississauga's Credit Program for Multi-residential and Non-residential Properties

Factor	Maximum Credit Amount (to a total not exceeding 50%)	Description
Peak Flow Reduction	40%	Percent reduction of the 100-year post-development flow to pre-development conditions of the site.
Water Quality Treatment	10%	Consistent with Provincial criteria for enhanced treatment.
Runoff Volume Reduction	15%	Percent capture of first 15 mm of rainfall during a single rainfall event.
Pollution Prevention	5%	Develop and implement a pollution prevention plan.

It is more cost-effective, from an administrative standpoint, to only offer credits to non-residential properties as they typically represent a small number of large properties whose stormwater management facilities tend to have a larger impact on runoff contribution and pollutant loading to the City's stormwater system. As the typical residential stormwater user fee across Canada ranges from $75 to $200 per year, a 10 to 50% credit does not offer significant savings or incentive to a homeowner to implement measures that reduce their impact on the municipal stormwater management system. The administrative cost to offer a credit program to residential properties can sometimes outweigh the savings realised by the property owner. Despite that, some municipalities have elected to offer a residential credit program because residential landowners have strongly asked for it and offering credits can therefore lead to greater acceptance of the stormwater user fee. To reduce the administrative costs for offering credits to residential properties, municipalities such as the City of Waterloo have developed an on-line credit application system for residential properties with random site visits to check for compliance.

Even though many stakeholders ask for a credit program, when a new stormwater fee is being proposed, Ontario municipalities have found that less than 10% of eligible properties apply for credits. Greater credit uptake has been found in municipalities, such as the City of Waterloo where they have an on-line application process, and a third-party non-profit organization supports the implementation of measures that qualify for the credit program.

Once a property's credit is approved, a property owner should be required to renew its credit application on a regular basis (e.g., every 1 to 5 years) to ensure that the measure is still in place and being regularly maintained.

We recommend that the City of Hamilton considers a stormwater credit/rebate program in conjunction with a possible stormwater rate. Due to the number of residential properties in the City of Hamilton and the relatively low stormwater fee that a residential property would pay (<$200 per year), we recommend that the City focus on a credit program for its non-residential properties. The City could then work with organizations such as Green Ventures to offer rebates or subsidies for programs that reduce the quantity and improve the quality of stormwater runoff from residential properties.

As the City is focusing on reducing the amount of stormwater runoff in combined areas and improving stormwater quality in separated areas, the City may want to offer different types of credits depending on whether the property is in a combined or separated sewer area. The City would be able to leverage its experience and success from its wastewater abatement program if it were to implement a stormwater credit program. We recommend that the City consult with stakeholders (e.g., property owners) over the next 6 to 12 months to develop an effective financial incentive program.

7. Recommendations and Next Steps

Based on our evaluation of stormwater funding models using the Guiding Principles that were endorsed by the City of Hamilton's General Issues Committee, we recommend that the City consider a 'Single Family Unit' stormwater rate with a financial incentive program. We recommend that the City consult with stakeholders (e.g., property owners) over the next 6 to 12 months to develop an effective financial incentive program.

Statement of Qualifications and Limitations

The attached Report (the “Report”) has been prepared by AECOM Canada Ltd. (“AECOM”) for the benefit of the Client (“Client”) in accordance with the agreement between AECOM and Client, including the scope of work detailed therein (the “Agreement”).

The information, data, recommendations and conclusions contained in the Report (collectively, the “Information”):

- is subject to the scope, schedule, and other constraints and limitations in the Agreement and the qualifications contained in the Report (the “Limitations”);
- represents AECOM’s professional judgement in light of the Limitations and industry standards for the preparation of similar reports;
- may be based on information provided to AECOM which has not been independently verified;
- has not been updated since the date of issuance of the Report and its accuracy is limited to the time period and circumstances in which it was collected, processed, made or issued;
- must be read as a whole and sections thereof should not be read out of such context;
- was prepared for the specific purposes described in the Report and the Agreement; and
- in the case of subsurface, environmental or geotechnical conditions, may be based on limited testing and on the assumption that such conditions are uniform and not variable either geographically or over time.

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AECOM: 2015-04-13

Stormwater Funding Review

General Issues Committee

City of Hamilton

June 28, 2023

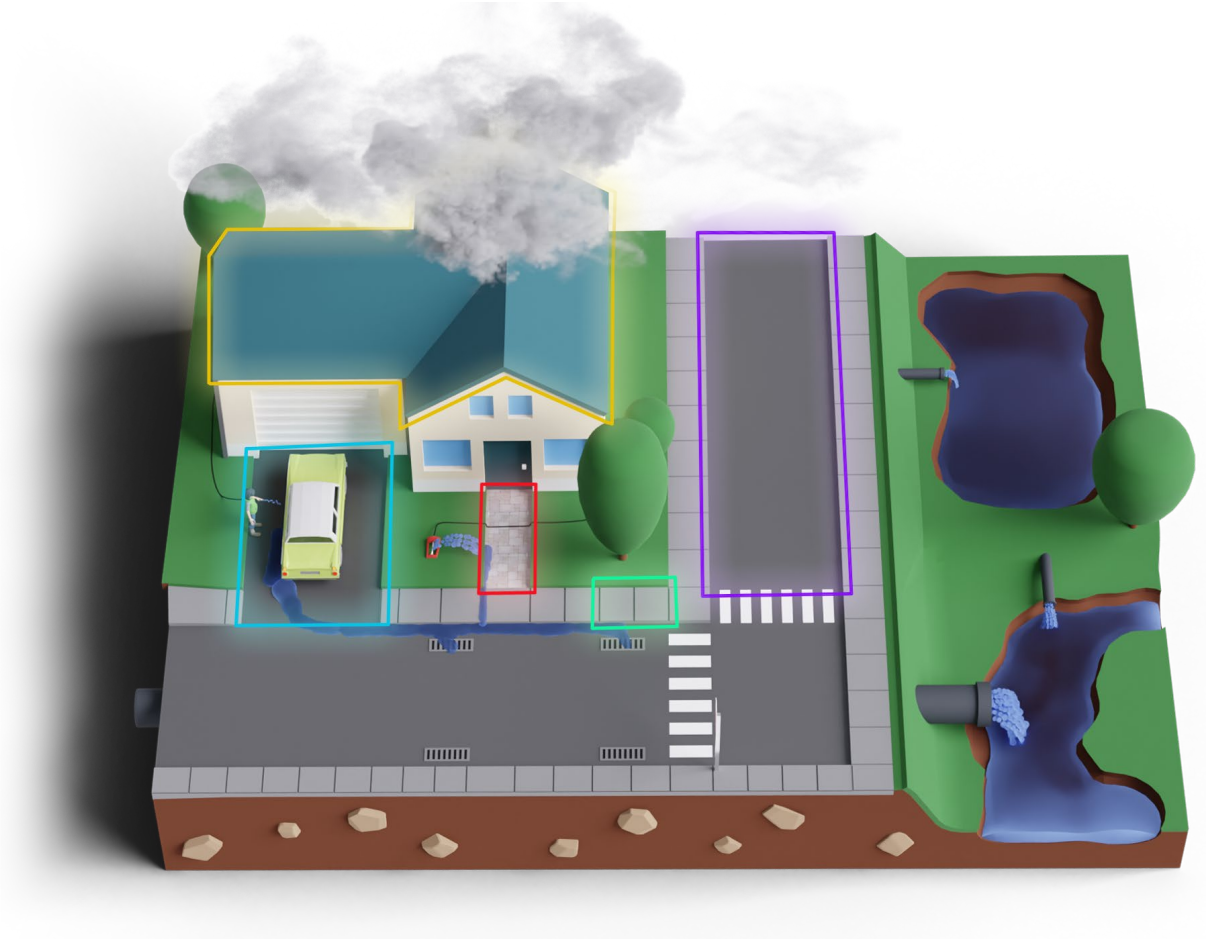
Presented by: Nancy Hill

Agenda

1. Why are we here?
2. Hamilton's current stormwater funding
3. Funding option evaluation
4. Property assessment
5. Rural assessment
6. Estimated rates
7. Stormwater fees – other municipalities
8. Financial incentives
9. Implementation plan & resourcing requirements

What is Stormwater?

Rain, melting snow, and ice that washes off driveways, parking lots, roads, yards, rooftops, and other surfaces.[1]



1. *CSA W211:21-Management standard for stormwater systems*

What is Stormwater Management?

From problems…

Bank Erosion

Debris

Spills

Water Quality

Road Flooding

System Surcharge

Asset Failure

To Solutions….

Stormwater Management

Planning, design, and implementation of systems that mitigate and control the impacts of human-made changes to runoff and other components of the hydrologic cycle.[1]

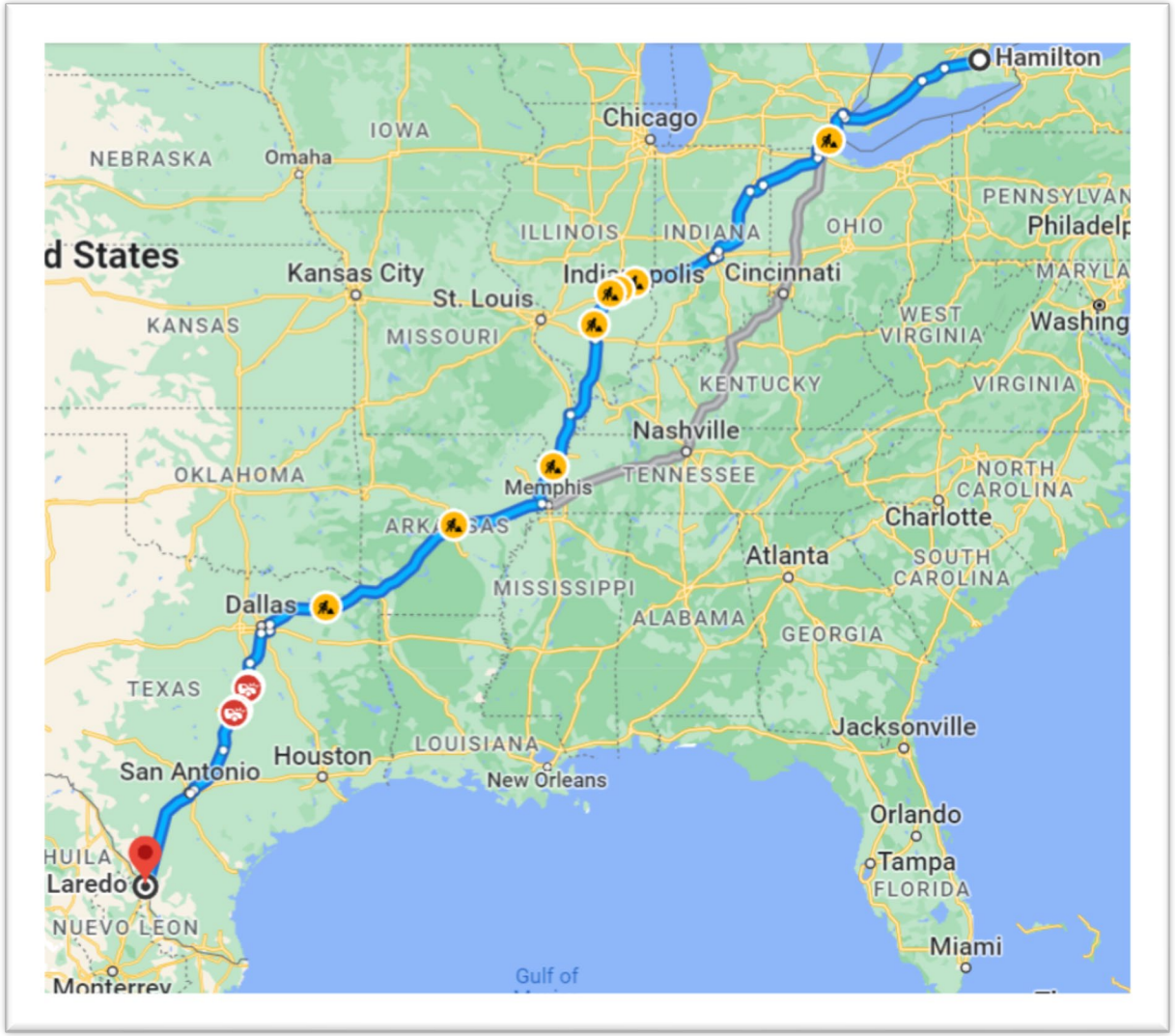
1. CSA W211:21 – Management standard of stormwater systems

Hamilton's Stormwater System

- 1,500 km ditches
- 1,200 km storm sewers
- 148 km watercourses

Hamilton to Mexico

- 50,000 catch basins
- 3,500 culverts
- 4 infiltration facilities
- 126 ponds
- Value of $3.1 billion



Hamilton's Current Stormwater Funding

$000	Storm Operating (W/WW Rate)	Conservation Authorities (Tax Levy)	Roads Maintenance (Tax Levy)	Total Stormwater Program
2023 Restated Budget	$ 30,284	$ 9,108	$ 3,880	**$ 43,272**

Stormwater funding is primarily based on water consumption

- Big water consumers pay more for stormwater management
- Those not on municipal water system (ex. parking lots) pay little/nothing

Is there a better way to fund the City's Stormwater Management Services?

CITY OF HAMILTON
MOTION

General Issues Committee: January 18, 2023

MOVED BY COUNCILLOR J.P. DANKO.....

SECONDED BY MAYOR/COUNICLLOR.....

Stormwater Rate Review

WHEREAS, in December 2021, Council directed staff, through Report PW21074 to report back to the Public Works Committee with a review of the benefits and challenges of various stormwater program funding options including water rates, a dedicated stormwater fee or tax levy or any other options and provide a recommendation for the preferred financing model for the City's stormwater programs, including a preliminary plan and any resource requirements necessary to conduct a detailed review of the preferred financing model;

WHEREAS, in June 2022, Council approved Report FCS22043 - Stormwater Funding Review that directed staff to report back to the General Issues Committee to provide Guiding Principles for consideration that will direct the evaluation of alternative stormwater rate funding structures as part of the Stormwater Funding Review;

WHEREAS, Report FCS22043 Stormwater Funding Review outlined three phases for the project with an estimated timeline for completion of all three phases of January 2026;

WHEREAS, Report FCS22043(a) Stormwater Funding Review on the November 30, 2022 General Issues Committee (GIC) agenda recommends a set of guiding principles for council to consider;

WHEREAS, Report FCS22043(a) Stormwater Funding Review highlights that Phase 1 of the project was completed three months earlier than originally planned;

WHEREAS, a new Utility Billing System is required to be in place at the expiry of the current contract with Alectra expected at December 31, 2024; and;

WHEREAS, synergies could be achieved if a new Stormwater Funding model could be integrated into a new Utility Billing System;

THEREFORE, BE IT RESOLVED:

a) That staff be directed to report back to the General Issues Committee in the second quarter of 2023 on the steps and resources required to implement a dedicated user fee for stormwater service, with an implementation date no later than January 2025; and,

a) That, in addition to the guiding principles that may be adopted by Council through Report FCS22043(a), staff be directed to include all aspects of the City's stormwater services to be funded from the revenues associated with this dedicated user fee.

Council – January 25, 2023

Guiding Principles to Evaluate Stormwater Funding Options

1. Fair & equitable (“user-pay”)
2. Climate resilient & environmentally sustainable
3. Affordable & financially sustainable
4. Justifiable
5. Simple to understand & manage

Funding Option Evaluation

Hamilton's current model

Stormwater Funding Model	Used By	Stormwater Rate Based On	Guiding Principles						
			Fair & Equitable	Climate Resilient & Environmentally Sustainable		Affordable & Financially Sustainable		Justifiable	Simple to Understand & Manage
				Climate Resilient	Environmentally Sustainable	Affordable	Financially Sustainable		
1. General Tax Levy	Brantford	Assessed value	✗	✗	✗	◯	✗	✗	✓
2. Dedicated Tax Levy	Markham	Assessed value	✗	✗	✗	◯	◯	✗	✓
3. Water/ Wastewater Rate	Hamilton Toronto	Water consumption	✗	◯	✗	◯	◯	✗	✓
4. Stormwater Rate – Tiered Flat Fee	Ottawa Vaughan London	Property type, size	✗	◯	◯	◯	✓	◯	◯
5. Stormwater Rate – ERU	Guelph	Impervious area (but all residential types pay the same)	◯	✓	✓	◯	✓	✓	◯
6. Stormwater Rate – SFU	Windsor	Impervious area (but all single family dwellings pay the same)	✓	✓	✓	◯	✓	✓	◯
7. Stormwater Rate – Tiered SFU	Mississauga Kitchener	Impervious area	✓	✓	✓	◯	✓	✓	✗

Defining Impermeable Surfaces

- Roof
- Asphalt
- Concrete
- Compacted gravel
- Pavers (unless they are designed for infiltration)

Stormwater Rates 101

Rate = $\frac{\text{Total revenue requirements}}{\text{Total \# of billing units}}$ (1 billing unit = average residential impervious area)

Option #5 Equivalent Residential Unit (ERU)

- Charge all residential units the same

Options #6 Single Family Unit (SFU)

- Charge all single-family detached homes the same
- Charge other residential types based on their footprint

Option #7 Tiered Single Family Unit (Tiered SFU)

- Same as SFU but break single-family detached homes into tiers based on their size

Recommended Option(s) Comparison

Housing Type	Equivalent Residential Unit charge	Single Family Unit charge	Tiered SFU charge
Average house	Same for all - 1 unit		
Small house	1 unit	1 unit	0.5 unit
Large house	1 unit	1 unit	1.5 units
Duplex (both units)	2 units	1 unit	1 unit
House with suite	2 units	1 unit	1 unit
20 unit apartment building – low rise	20 units	Approx 4 units	Approx 4 units
40 unit apartment building – high rise	40 units	Approx 4 units	Approx 4 units
Industry/commercial/institution	Same for all - measured individually		

Evaluation: ERU vs SFU vs Tiered SFU

Equivalent Residential Unit

- Less equitable than SFU

Single Family Unit

- Balances simple vs equity*****
- Residential rates are based on assessment code – simple to administrate

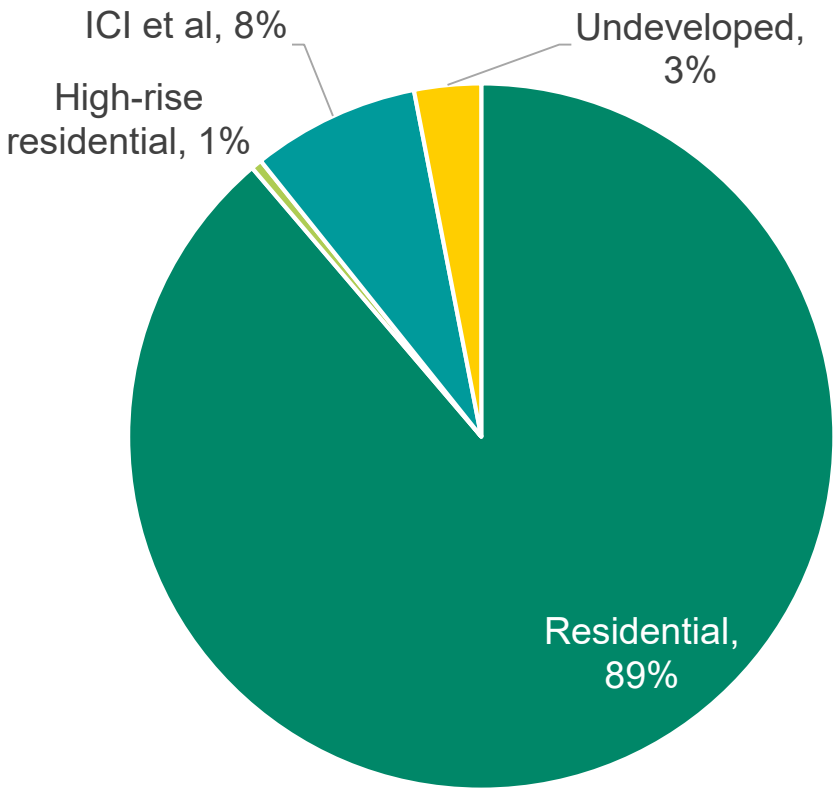
Tiered Single Family Unit

- Single family dwellings must be placed into tiers
- Most of the largest homes are in rural areas
- More administration than ERU/SFU

Residential Impervious Area Sampling

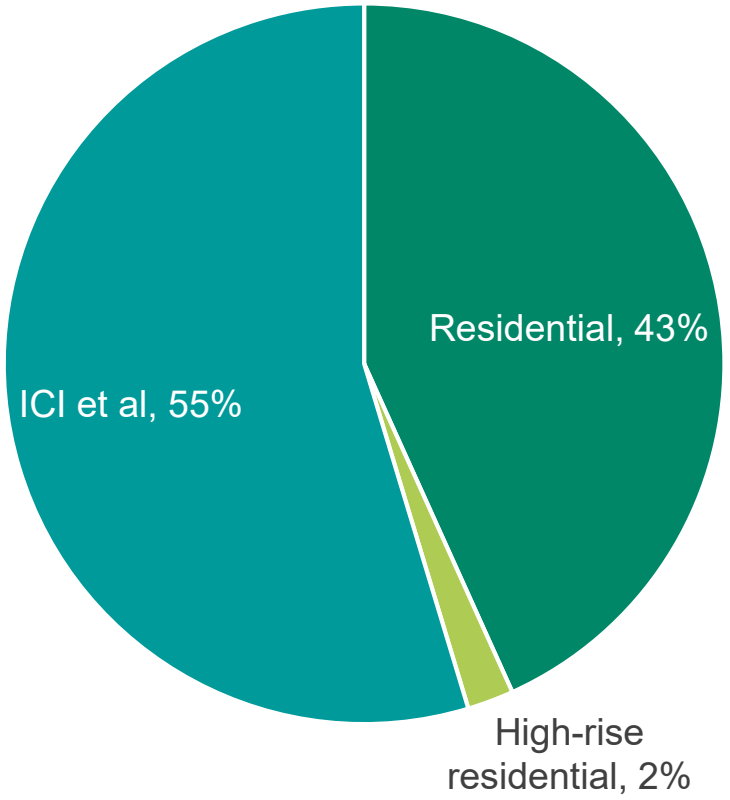
Parcel Type	Avg Impervious Area (m^2) per d.u.	Ratio of Imp Area to Urban SFD	Assigned SFU Factor
Residential SFD (in Urban Boundary)	291	1.0	1.0
Residential SFD (outside Urban Boundary)	596	2.0	1.0
Residential Link Home	223	0.8	1.0
Residential Condo - Standard - Detached	291	1.0	1.0
Residential Semi Detached	171	0.6	0.5
Residential Townhouse (Freehold)	140	0.5	0.5
Residential MultiFamily - Towns	130	0.4	0.5
Residential Condo - Standard - Towns	159	0.5	0.5
Residential Duplex	114	0.4	0.5
Residential Triplex	84	0.3	0.3
Residential Fourplex	81	0.3	0.3
Residential Fiveplex	78	0.3	0.3
Residential Sixplex	73	0.3	0.3
Residential MultiFamily - Building	47		assessed individually
Residential Condo - Standard - Building	60		assessed individually

Property Summary for the City of Hamilton



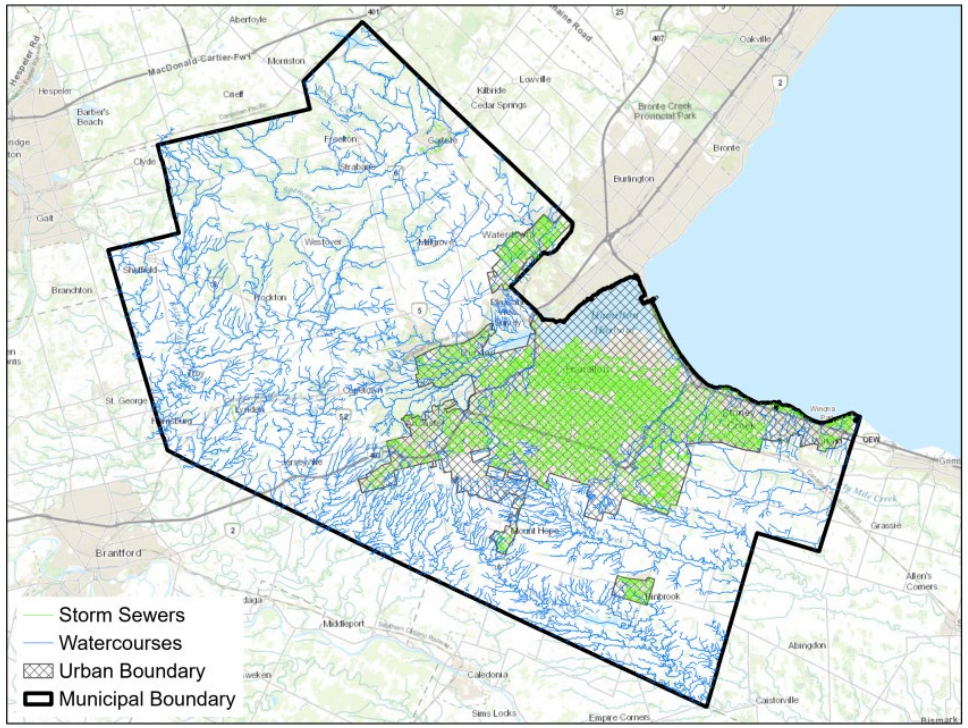
Parcels

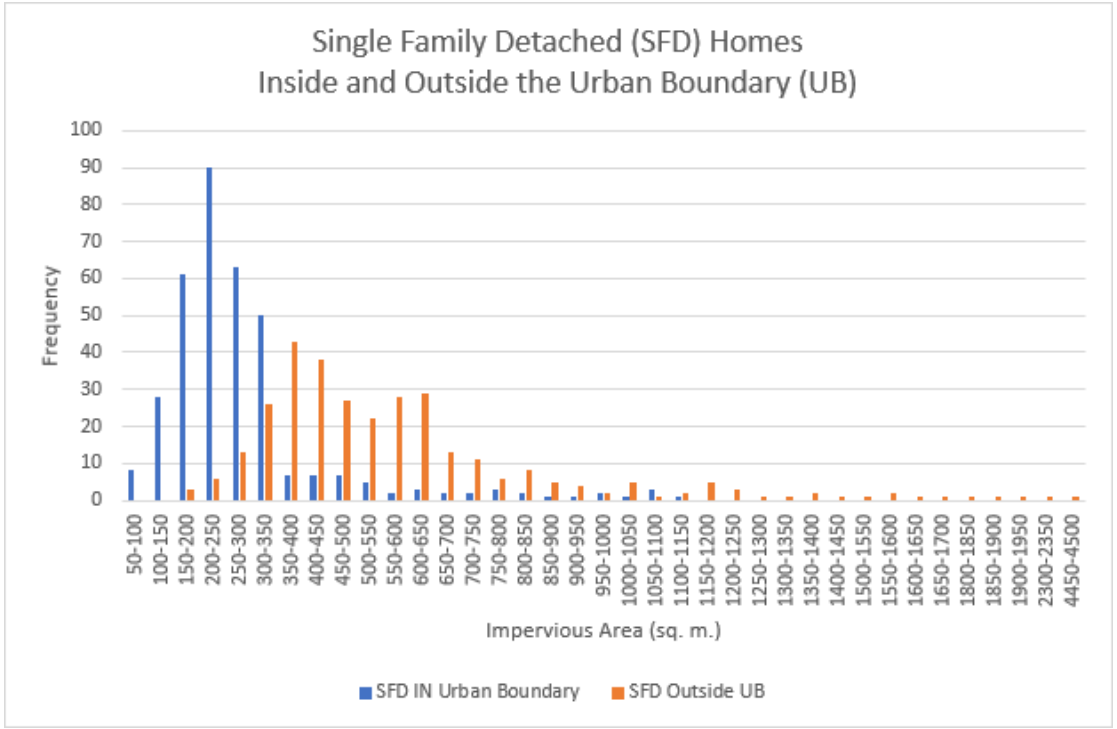
Impervious Area



Rural Analysis

- Average rural home impervious area = 2 x average urban home
- Average residence contributes $60 per year towards stormwater management through property taxes
- All rural properties contribute approx. $1.5 million towards stormwater management through property taxes.
- In 2022, the City spent over $2.6 million on rural drainage projects plus $11.7 million on joint rural/urban initiatives
  - Culvert inspections & replacements, ditch cleaning, Conservation Authority contributions

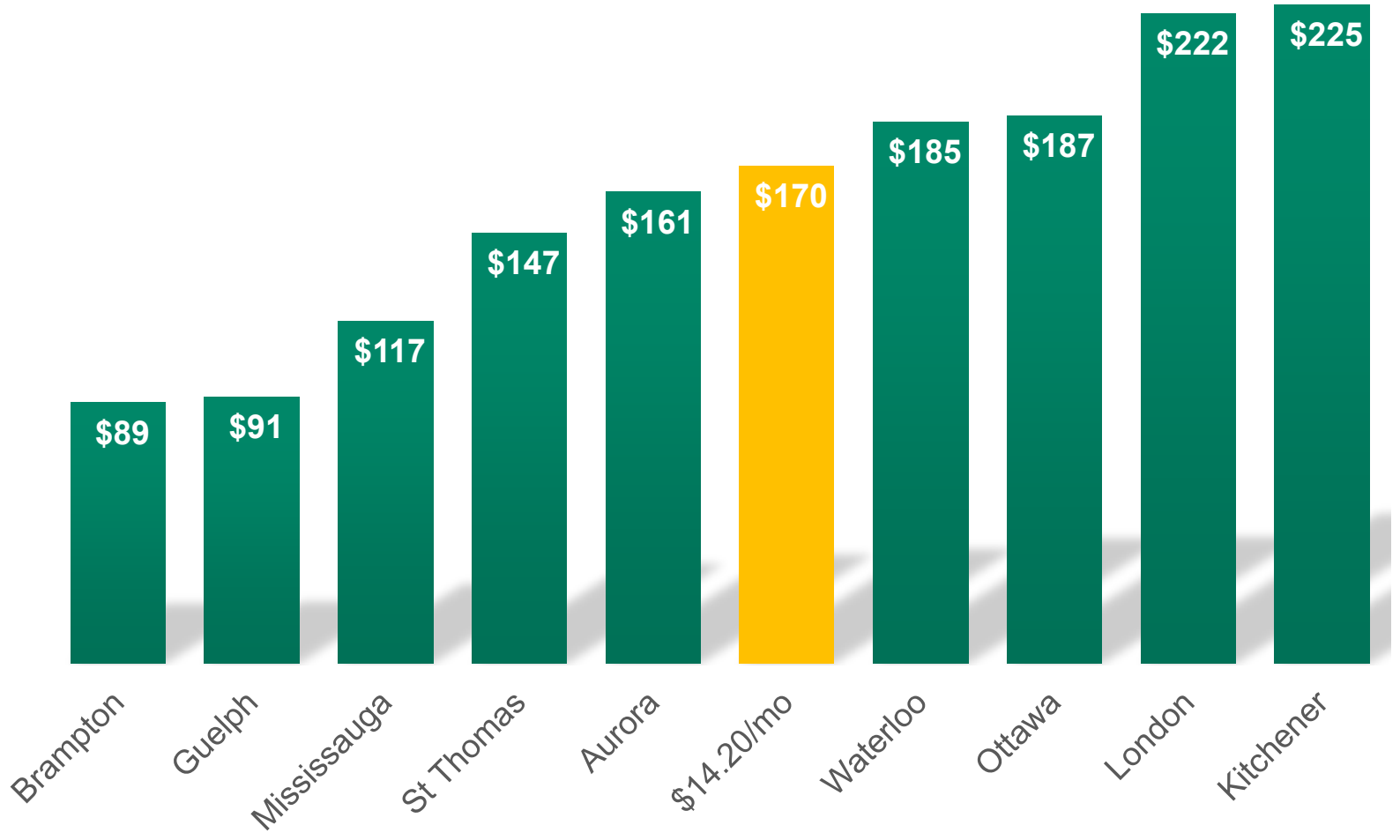




Estimated Rates based on 2025 Budget

Stormwater Budget	$54 million	# Dwelling Units per charge
Program Cost	$54,040,000	
Base Rate ($/SFU/mo)	$14.20	
Representative Property	**Annual Charge**	
Residential SFD (in Urban Boundary)	$170	1
Residential SFD (outside Urban Boundary)	$170	1
Residential link home	$170	1
Residential condo - standard - detached	$170	1
Residential semi detached	$85	1
Residential townhouse (freehold)	$85	1
Residential multifamily - towns (average)	$3,138	18
Residential condo - standard - towns	$85	1
Residential duplex	$170	2
Residential triplex	$153	3
Residential fourplex	$204	4
Residential fiveplex	$256	5
Residential sixplex	$307	6
Residential multi-family buiding (average)	$1,338	8
Residential condo - standard - building (average)	$35	1

2023 Average Residential Annual Stormwater Fees – Other Municipalities



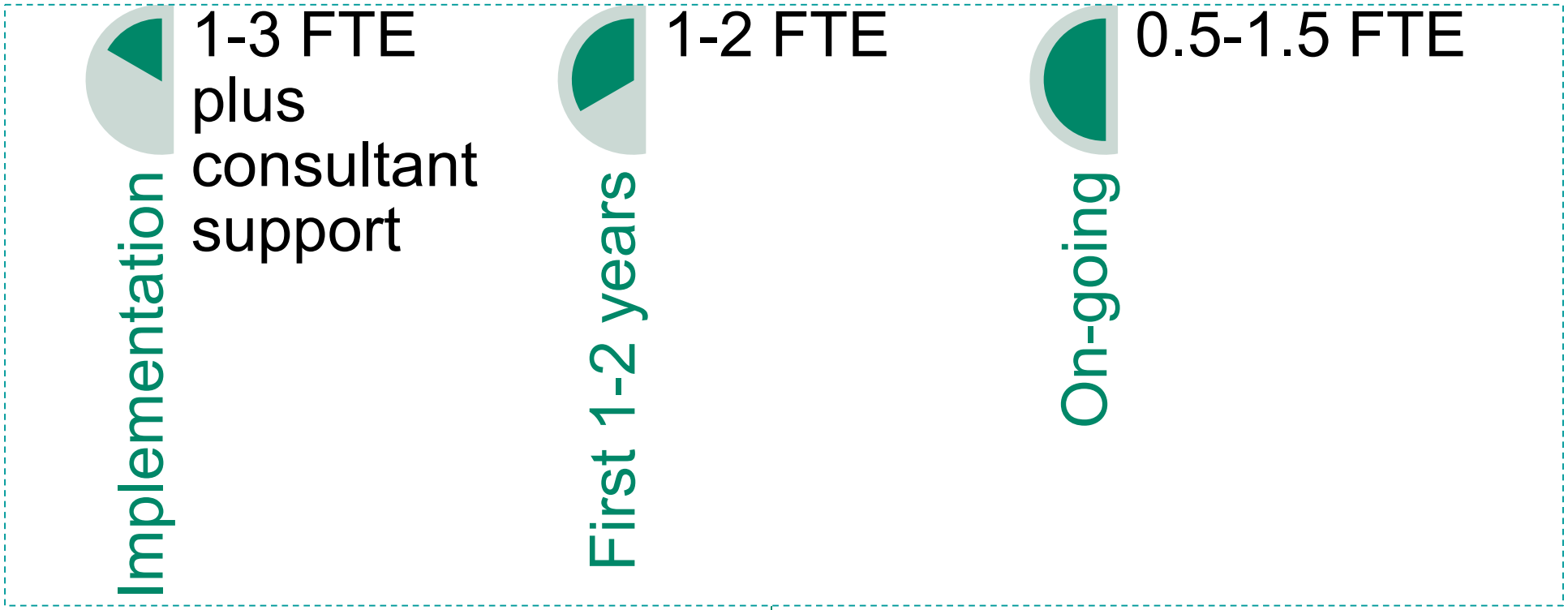
Financial Incentives for On-site Measures

- **Credits** – on-going reduction in stormwater fee for *maintained/functional* measures

- **Other** – financial contributions toward programs

Benefits	Encourage LID
	Reward desired measures
	Environmental awareness
	Reinforce equity & user-pay concepts
	Synergy with Water
	Potentially defer expenditures

Stormwater Fees – Resourcing Requirements



Contact Email:
Nancy.hill@aecom.com

Stormwater Funding Review

Stormwater Funding Review Timeline

Phase	Timeline	Process Step
Phase One	September 2022	Retained AECOM through the use of the Roster to support Review
	October 2022	Developed Guiding Principles for Council's consideration
	November 30, 2022	Obtained approval of Guiding Principles to be used to evaluate storm funding models
	Dec 2022 - Jan 2023	AECOM conducted Stormwater Funding Review
	February 2023	Council Education Sessions
	May 2023	Provided information presentations to Environment Hamilton & the Hamilton Industrial Environmental Association
	Feb – May 2023	Incorporated feedback from Council sessions to develop a recommended rate structure
	June 28, 2023	**Report to GIC with recommended stormwater rate structure for Council's consideration**
Phase Two	July 2023 to Q1 2025	Coordinate with new water billing solution and implement a plan for customer communications
	July – December 2023	Community Engagement with Stakeholders and the creation of a Financial Incentive program
	Spring 2024	Development of a Review/Appeal process
	Winter 2024	2025 Rate & Tax supported budgets incorporating revised stormwater rate structure
	September 1, 2025	Revised Stormwater Rate Structure implemented

Stormwater Funding Needs

$000	Storm Operating (Rate)	Conservation Authorities (Tax Levy)	Roads Maintenance (Tax Levy)	Credit / Incentive Programs (New)	Administration (New)	**Total Stormwater Program**
2023 Restated Budget	$ 30,284	$ 9,108	$ 3,880	n/a	n/a	**$ 43,272**
2024 Forecasted Budget	$ 35,928	$ 9,288	$ 3,927	n/a	n/a	**$ 49,143**
2025 Forecasted Budget	$ 38,810	$ 9,472	$ 3,986	$ 1,574	$ 200	**$ 54,043**

- 2025 forecasted storm rate budget = $54.0 M (all Stormwater related expenditures)

- Assumes forecast water and wastewater rates for 2024 (10.04%) and 2025 (9.95%)
- Incentive Program assume 3% of total program
- Administration assumed at 1.4 FTE

Paying for Stormwater Program

- Residential ratepayers (excluding multi-residential) contribute nearly 50% of water and wastewater revenues and residential taxpayers contribute 70% of taxation revenues while responsible for about 43% of the stormwater runoff
- This means residential rate and taxpayers are indirectly subsidising the cost of the stormwater system for other sectors under the current storm system funding
- In 2025, under the current approach to funding stormwater services, an average residential homeowner would pay a total of about $180 ($120 in water/wastewater charges and $60 in property taxes)
- In 2025, assuming the recommended stormwater rate structure the costs would be:
  - Single Family Dwellings - $170 annual stormwater user fee
  - Semi-detached and townhomes - $85 annual stormwater user fee

Tax Levy Funded Stormwater Expenditures

- 2025 Impact on the overall total tax levy:
  - 1.0% = $11 M
  - 1.3% = $14 M

- Recommendation to transfer $14M to the Climate Change Reserve for climate change / environmental initiatives in conjunction with the introduction of the Stormwater Rate Structure

HAMILTON'S CLIMATE ACTION STRATEGY
Re-Charge. Adapt. Engage. Act.

Water/Wastewater Rates Restatement

$1,061.50
2025 W/WW/Storm Residential Bill (as of Jan 1, 2025)

$123.95
Restatement Decrease ($)

11.7%
Restatement Decrease (%)

$937.55
2025 W/WW Residential Bill Restated (as of Sept 1, 2025)

Impact of Recommended 2025 Restatement of the Water and Wastewater Rate; Decreases on a Typical Residential Bill: 11.7%

Based on annual water consumption of 200m^3

Assumes approved in principle rates are implemented for 2024 (10.04%) and 2025 (9.95%)

Residential Impact Profiles

Residential Type	Single Family Dwelling			Townhome	Triplex
Water User Profile	Average Residential User	Low Water User (Single Occupant)	Large Water User (Multi Generational Home)	Average Townhome	Average Triplex
Meter Size	meters < 25mm				
Annual Consumption	200m3	100m3	300m3	170m3	250m3
Forecast Monthly SW Fee	$ 14	$ 14	$ 14	$ 7	$ 13
Current Annual WWW Bill	$ 1,062	$ 685	$ 1,533	$ 920	$ 1,297
Restated WWW Bill, 2025	$ 938	$ 600	$ 1,360	$ 811	$ 1,149
WWW Bill, Net Change	$ (124)	$ (85)	$ (173)	$ (109)	$ (148)
Annual Storm Bill	**$ 170**	**$ 170**	**$ 170**	**$ 85**	**$ 153**
Annual Net Change	$ 46	$ 86	$ (3)	$ (24)	$ 5
Annual Net Change %	4.4%	12.5%	(0.2%)	(2.6%)	0.4%

Assumes approved in principle rates are implemented for 2024 (10.04%) and 2025 (9.95%)

ICI Impact Profiles

Property Type	Institutional (Hospital)	Commercial (Shopping Mall)	Commercial (Big Box Retailer)	Commercial (York Blvd Parkade)
Meter Size	Various Meters	Various	38mm	N/A
Annual Consumption	301,940m3	32,550m3	3,883m3	N/A
Impervious Area	41,300m2	229,300m2	37,200m2	4,100m2
Forecast Monthly SW Fee	$ 2,015	$ 11,190	$ 1,815	$ 200
Annual WWW Bill, Current Structure	$ 1,512,494	$ 181,817	$ 20,296	N/A
Restated WWW Bill, 2025	$ 1,352,222	$ 161,980	$ 18,120	N/A
WWW Bill, Net Change	$ (160,272)	$ (19,837)	$ (2,176)	N/A
Annual Storm Bill	**$ 24,180**	**$ 134,275**	**$ 21,777**	**$ 2,403**
Annual Net Change	$ (136,092)	$ 114,438	$ 19,601	$ 2,403
Annual Net Change %	(9.0%)	62.9%	96.6%	N/A

Assumes approved in principle rates are implemented for 2024 (10.04%) and 2025 (9.95%)

Report FCS22043(b) Recommendations

(a) That the Stormwater Rate Structure as outlined in Appendix “A” to Report FCS22043(b) be approved effective September 1, 2025;

(b) That staff develop the 2025-2034 Rate Supported Budget incorporating the Stormwater Rate Structure;

(c) That property tax levy funding related to stormwater expenditures to be funded by the new stormwater rate structure, be transferred to the Climate Change Reserve and applied to climate change / environmental initiatives in conjunction with the introduction of the Stormwater Rate Structure;

(d) That staffing requirements for the Stormwater Rate Structure once implemented be referred to the 2025 Rate Supported Budget;

(e) That the City Solicitor be authorized and directed to prepare all necessary by-laws, for Council approval, in order to implement recommendations (a) through (d) of Report FCS22043(b);

(f) That staff develop and report back regarding the implementation of a Stormwater Incentives Program;

Report FCS22043(b) Recommendations

(g) That staff develop and implement a communication strategy to advise property owners of the Stormwater Rate Structure to be implemented;

(h) That the single source procurement of AECOM Canada Ltd as external consultants for the Stormwater Funding implementation, pursuant to Procurement Policy #11 – Non-competitive Procurements be approved;

(i) That the General Manager, Finance and Corporate Services, be authorized to negotiate, enter into and execute a contract and any ancillary documents required to procure AECOM Canada Ltd as the consultant to support the implementation of Stormwater Rate Structure in a form satisfactory to the City Solicitor;

(j) That the implementation of the Stormwater Rate Structure with an upset limit of $500,000, be funded from the Stormwater Reserve (108010);

(k) That the subject matter respecting an assessment of steps and resources required to implement a dedicated user fee for stormwater, be identified as complete and removed from the General Issues Committee Outstanding Business List.


THANK YOU