TORONTO

REPORT FOR ACTION

Reducing Stormwater Runoff and Mitigating Basement Flooding

Date: January 14, 2025
To: Executive Committee
From: General Manager, Toronto Water; Executive Director, Environment, Climate and Forestry
Wards: All

SUMMARY

Over the past several decades, Toronto has experienced severe storm events that have impacted public and private property and the environment. Most recently, heavy rainfall events in July and August 2024 caused basement and surface flooding, affecting over a thousand properties and City of Toronto (City) infrastructure. In response, City Council directed staff in July 2024 (2024.MM20.24) on a range of issues related to reducing stormwater runoff and mitigating basement flooding. This report provides a response to the following Council directives:

- Review of City stormwater mitigation and adaptation programs for private property (referred to as stormwater management incentive programs in this report), including existing, discontinued, and potential new incentives to reduce impermeable surfaces, stormwater runoff, and basement flooding risks on private property.
- New or discontinued stormwater management incentive programs that could be established in the short-term or require additional review and planning prior to implementation.
- Public input into what programs and incentives would provide the most benefit to residential property owners to decrease impermeable surfaces and mitigate runoff.
- Assessment and consultation on opportunities to reduce stormwater runoff from non-residential properties whose impermeable surfaces drive up flooding, stormwater costs, beach closures, and water pollution.
- Additional resources that would be required to meaningfully reduce basement flooding across Toronto and how those resources should be funded.

The review and public consultation concerning the stormwater management incentive programs for private property was completed in November 2024. The review concluded that the City, through its existing programs, offers a range of stormwater management incentives for private property, comparable to other jurisdictions in North America. However, the public consultation revealed interest in additional incentives, specifically in

a new green infrastructure incentive program to help property owners reduce impermeable surfaces and install green infrastructure features at ground level.

Staff conclude there is merit to further consider the establishment of a new green infrastructure incentive program. Such a program would supplement existing City stormwater management incentive programs by providing new subsidies to property owners to install green infrastructure, reduce impermeable surfaces, thereby reducing stormwater runoff on private property. Additional review and planning are required to develop details for a new green infrastructure incentive program prior to seeking Council approval. This report recommends that the Environment, Climate and Forestry Division, in consultation with Toronto Water, Transportation Services and other relevant City divisions, report back to the Infrastructure and Environment Committee no later than Q3 2025 on a plan to implement such a program.

Staff also reviewed the City's existing Basement Flooding Protection Subsidy Program (BFPSP) and gathered input on three options for new and expanded subsidies that could potentially be offered by the BFPSP:

- A new subsidy for home stormwater assessments by a licenced professional.
- An increase in the existing backwater valve subsidy amount to subsidize the cost of two backwater valves.
- An increase in the existing sump pump subsidy amount to subsidize the cost of backup power.

The public consultation revealed interest in the above BFPSP subsidy options, which would help to further reduce basement flooding risks for eligible residential properties. Additional review and assessment of the options is required before seeking Council approval. Staff recommend a report back to the Infrastructure and Environment Committee no later than Q3 2025 that provides more details on the potential establishment of the new and expanded subsidy options under the BFPSP.

With respect to opportunities to reduce stormwater runoff on non-residential properties, this report refers to consultation undertaken by the Office of the Chief Financial Officer and Treasurer in fall 2024 with commercial sector representatives and other interested parties in consideration of a potential commercial parking levy (CPL) which included discussions of a potential stormwater “surcharge” or “levy” that could be applied based on the impermeable surface area on commercial properties that would also be subject to the CPL.

Staff recommend indefinitely suspending further consideration and/or engagement on a stormwater charge based on the feedback received as part of the CPL consultation sessions, the feedback received through previous City consultations on a potential stormwater charge, and in recognition of the recommendation to report back to the Infrastructure and Environment Committee on a plan to implement a green infrastructure incentive program for private property to help reduce stormwater runoff.

Staff also recommend indefinitely suspending further consideration and/or engagement on a potential water service charge based on the feedback received through the City’s public consultation on a water service charge (and stormwater charge) in spring 2024, prior to the consultation being paused in April 2024 to consider alignment of a potential

stormwater charge with the City's broader climate resilience strategy, a potential CPL, and the City's long-term financial plan.

Finally, this report presents an update on the implementation of the Basement Flooding Protection Program (BFPP) and a preliminary estimate of additional resources and funding required to meaningfully reduce basement flooding risks by accelerating the ongoing implementation of the BFPP, specifically, the construction of recommended local sewer program projects from completed Basement Flooding Environmental Assessment (EA) studies. This report recommends that, Toronto Water, in consultation with Engineering and Construction Services, undertake an assessment of options to accelerate the BFPP local sewer program projects. This assessment will consider recent work conducted by Engineering and Construction Services (ECS) to review Capital Delivery Models for large complex municipal infrastructure programs and projects, which is currently scheduled to appear on an Infrastructure and Environment Committee agenda in the first half of 2025.

RECOMMENDATIONS

The General Manager, Toronto Water, and the Executive Director, Environment, Climate and Forestry, recommend that:

1. City Council request the General Manager, Toronto Water, to report back to the Infrastructure and Environment Committee, no later than Q3 2025, on a plan to implement three new and expanded subsidies under the City's Basement Flooding Protection Subsidy Program, subject to City Council approval, for a home stormwater assessment subsidy, an increased backwater valve subsidy, and an increased sump pump subsidy, addressing the following details:
    a. subsidy amounts;
    b. applicant eligibility and application requirements; and,
    c. refined cost and resource estimates.

2. City Council request the Executive Director, Environment, Climate and Forestry, in consultation with the Chief Financial Officer and Treasurer, the General Manager, Toronto Water, the General Manager, Transportation Services, and any other relevant divisions, to report back to the Infrastructure and Environment Committee, no later than Q3 2025, on a plan to implement a green infrastructure incentive program for private property, subject to City Council approval, addressing the following program details:
    a. program administration;
    b. eligible green infrastructure features;
    c. subsidy amounts;
    d. applicant eligibility and application requirements;
    e. refined cost and resource estimates; and,
    f. potential funding sources for the program.

3. City Council request the General Manager, Toronto Water, in consultation with the Executive Director and Chief Engineer, Engineering and Construction Services, to report to the Infrastructure and Environment Committee on an assessment of options to accelerate the construction of recommended local sewer infrastructure improvement

projects from completed Basement Flooding Environmental Assessment (EA) studies under the City's Basement Flooding Protection Program, taking into consideration the findings from Engineering and Construction Services' recent review of capital delivery models for large complex municipal infrastructure programs and projects.

4. City Council direct the General Manager, Toronto Water, and the Chief Financial Officer & Treasurer to indefinitely suspend further consideration and/or engagement on a stormwater charge, based on the feedback from stakeholder engagement conducted as part of the consideration of a commercial parking levy; feedback received through previous City consultations on a potential stormwater charge; and in recognition of actions being undertaken to reduce stormwater runoff in Recommendation 2 above.

5. City Council direct the General Manager, Toronto Water, to indefinitely suspend further consideration and/or engagement on a water service charge, based on the findings from the City's public consultation on a water service charge that was paused in April 2024.

FINANCIAL IMPACT

There are no immediate financial impacts from the recommendations in this staff report. The following describes the review findings and steps to be taken to address potential future financial impacts:

Basement Flooding Protection Subsidy Program (BFPSP) – Potential future and expanded incentives

The review identified opportunities to further reduce basement flooding risks on private property by establishing new and expanding existing subsidies offered under the City's BFPSP to eligible residential properties. A new subsidy for a home stormwater assessment by a licensed professional would be offered to advise on factors contributing to basement flooding and mitigation measures, while existing backwater and sump pump subsidy programs would be expanded to increase existing subsidies and include an additional backwater valve and backup power battery to be installed on the existing sump pump. Preliminary costs, including development and operational costs and the cost of subsidy for these new and expanded subsidy options are estimated at $9.0 million annually, of which $4.8 million annually would be in addition to current program costs.

The staff-prepared 2025-2034 Toronto Water Capital Budget and Plan includes $95.0 million in additional funding over the 10-year period to support expanding existing BFPSP incentives and implementing new incentives. A report back to the Infrastructure and Environment Committee on the establishment of new and expanded subsidies offered to eligible residential properties under the BFPSP is recommended no later than Q3 2025. The report back is to provide additional details about new and increased subsidy amounts, application requirements, and cost and resource estimates.

Green Infrastructure Incentive Program – Potential future program

There are also significant opportunities and public interest to reduce stormwater runoff on private property, particularly on residential properties, through the potential establishment of a City green infrastructure incentive program. This incentive program contemplates a subsidy of up to an estimated maximum of $5,000 per property for a range of green infrastructure features including rain gardens, permeable pavement, pavement removal and replacement with soft landscaping, and soakaway pits. It is estimated that the cost to develop such a program would be approximately $0.5 million and costs to operate the program would range from $5.8 million to $14.0 million annually depending on the level of uptake.

A report back to the Infrastructure and Environment Committee on a plan to implement the green infrastructure incentive program for private property based on the proposed program framework presented in this staff report is recommended for no later than Q3 2025. This report will provide additional details to establish and operate the green infrastructure incentive program including but not limited to program administration, eligible green infrastructure features, subsidy amounts, applicant eligibility and application requirements, refined cost, and resource estimates, as well as potential funding sources, for consideration as part of future year budget processes.

Resources and Funding to Meaningfully Reduce Basement Flooding: Future Basement Flooding Protection Program (BFPP) Implementation Acceleration

Based on a preliminary estimate, Engineering and Construction Services anticipates that an additional $50.0 million in annual expenditures for the construction of BFPP local projects would result in an estimated 50 per cent increase in construction delivery rate and could equate to more than 1,000 additional properties benefitting per year. To facilitate management of the design and construction of an expanded BFPP local program, a new BFPP unit within ECS with additional staff positions would be required to deliver an expanded program for consultant management and community outreach.

While additional funding for BFPP local program construction could be considered in future capital budget processes, there are various constraints that impact the completion of BFPP local project designs and require mitigation prior to proceeding to construction. These constraints include easement negotiation with property owners, capital coordination with other capital projects in the same area, regulatory approvals, and possible supplier challenges and disputes.

ECS is undertaking a review of Capital Delivery Models for large complex municipal infrastructure programs and projects with the aim to increase the effectiveness and efficiency of capital delivery (design and construction) timelines. The outcomes of the review and opportunities to improve capital delivery will be addressed in a future report from ECS to the Infrastructure and Environment Committee, expected in the first half of 2025, Toronto Water, in consultation with ECS, will undertake an assessment of options to increase delivery of the BFPP local program that takes into consideration the findings of the aforementioned ECS report, with the aim of accelerating implementation of the BFPP local sewer projects. Toronto Water plans to report to the Infrastructure and

Environment Committee on the outcomes of the options assessment upon its completion.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting on July 24 and 25, 2024, City Council provided direction on a range of issues pertaining to reducing stormwater runoff and mitigating flooding. The Council direction relevant to this staff report are directives 1, 3 and 7 as follows:

1. The City Manager, in coordination with the General Manager, Toronto Water, the Chief Financial Officer and Treasurer and the Executive Director, Environment and Climate, to report to City Council no later than the fourth quarter of 2024 on:

- existing private property stormwater mitigation and adaptation programs offered by the City and their uptake;
- an assessment of stormwater mitigation and adaptation programs previously offered for private property by the City that have been discontinued;
- new or discontinued stormwater mitigation and adaptation programs for private property that could be established in the short-term;
- new or discontinued stormwater mitigation and adaptation programs for private property that will require additional review and planning prior to implementation; and,
- public input into what programs and incentives would provide the most benefit to residential property owners to decrease impermeable surfaces and mitigate runoff.

3. The Chief Financial Officer and Treasurer, in consultation with the General Manager, Toronto Water and the Executive Director, Environment and Climate, through the planned consultations referenced in Item 2024.IE15.4, to assess and consult on opportunities to reduce stormwater runoff from non-residential properties whose impermeable surfaces drive up flooding, stormwater costs, beach closures, and water pollution and report back to the Executive Committee and City Council in the fourth quarter of 2024 with the findings of that consultation.

7. The General Manager, Toronto Water to report back to the Executive Committee and City Council in the fourth quarter of 2024 on what additional resources Toronto Water would require to meaningfully reduce basement flooding across Toronto, and how those resources should be funded. Item: 2024.MM20.24 - Reducing Runoff and Mitigating Flooding

At its meeting on December 13, 14 and 15, 2023, City Council authorized the General Manager, Toronto Water, to expand the eligibility criteria of the City's Basement Flooding Protection Subsidy Program to include an eligible registered property owner of an existing residential fourplex property within the City of Toronto, subject to all the terms and conditions of the Program. Item: 2023.IE9.4 - Expanding the Basement Flooding Protection Subsidy Program Eligibility Criteria to Include Registered Property Owners of Existing Residential Fourplexes

At its meeting on June 5, 2023, the Infrastructure and Environment Committee received a report for information titled “Wet Weather Flow Master Plan Update” which provided an update on the progress of implementing the City's Wet Weather Flow Master Plan, adopted by City Council in 2003, including the progress made in implementing the City's Basement Flooding Protection Program among other programs and initiatives. Item: 2023.IE4.6 - Wet Weather Flow Master Plan Implementation Update

At its meeting on July 14, 15 and 16, 2021, City Council authorized the General Manager, Toronto Water and the Chief Financial Officer and Treasurer to consult with City water stakeholders, including residential, multi-residential, institutional, commercial, and industrial customers, on the possible changes to water rates, fees and charges on the following:

- the possible implementation of an administrative water charge;
- the possible implementation of a stormwater charge for all property classes, based on a review of the stormwater charge implementation plan considered by City Council in 2017; and,
- the possible implementation of a stormwater charge credits program to incentivize improved stormwater management practices on large properties.

Item: 2021.IE23.6 - Water Users Consultation Water Fees, Charges and Programs

At its meeting on April 24, 25, 26 and 27, 2018, City Council adopted the Pollinator Stewardship Incentive Program (known as PollinateTO) framework to provide financial support to community-led pollinator stewardship initiatives. Item: 2018.PE26.7 - Pollinator Protection Strategy

At its meeting on May 24, 25 and 26, 2017, City Council approved funding for private land tree planting programs and expansion of the existing grant allocation to LEAF for a partnership with the City for the Backyard Tree Planting Program. Item: 2017.PE19.1 - Strategy to Expand the City's Tree Canopy on Private Lands

At its meeting on November 8 and 9, 2016, City Council directed the General Manager, Parks, Forestry and Recreation to develop a Tree Planting Strategy based on based on the recommendations included in the report "Actions to Grow Toronto's Tree Canopy". Item: 2016.PE14.2 - Growing Toronto's Tree Canopy (Tree Planting Strategy)

At its meeting on December 16, 17 and 18, 2013, City Council directed the General Manager, Toronto Water, to increase the total subsidy available under the Basement Flooding Protection Subsidy Program from $3,200 to $3,400 per household by removing the combined subsidy for a backwater valve and sump pump for applications processed after January 2, 2014. Item: 2014.EX36.17 - 2014 Rate Supported Budgets - Toronto Water and 2014 Water and Wastewater Rates and Service Fees

At its meeting on September 21 and 22, 2011, City Council directed that the Eligibility Criteria: Financial Assistance for Low Income Property Owners previously approved under the Mandatory Downspout Disconnection Program be revised as follows:

- Eligibility limited to low-income disabled or senior citizen property owners;

- The financial assistance available limited to a maximum upset limit of $500, payable in the form of a cheque; and
- Revised conditions for financial assistance and eligible work.

Item: 2011.PW7.6 - Wet Weather Flow Master Plan and Basement Flooding Protection Program Update

At its meeting on February 22 and 23, 2010, City Council adopted revised terms of reference and refinements to eligibility, requirements, and funding for the Eco-Roof Incentive Program. Item: 2010.EX.40.7 - Update and Revisions to the Eco-Roof Incentive Program

COMMENTS

1. Background: Stormwater and Stormwater Management

Stormwater refers to rain and melted snow. When not absorbed into the ground, stormwater runs off hard surfaces into catchbasins, flowing through the City's underground pipes to local waterways. As it runs over impermeable surfaces (i.e., surfaces that do not allow stormwater to be absorbed) it picks up oils, grease, fertilizers, bacteria, and other pollutants. Examples of impermeable surfaces on private property include asphalt parking areas and driveways, concrete landscaping such as patios, decks and walkways, and building roofs with impermeable materials. When severe storms occur (high volume of rainfall over a short duration), stormwater can overwhelm the sewer system resulting in basement and surface flooding. Rapid stormwater runoff can also erode watercourses, putting City infrastructure at risk. In urban areas, like Toronto, extensive impermeable surfaces exacerbate stormwater runoff.

1.1 Stormwater Management at the City of Toronto

The City takes a multi-pronged approach to managing the negative impacts of stormwater and severe storm events. The City's stormwater management planning and initiatives are guided by the City's Wet Weather Flow Master Plan, adopted by City Council in 2003, which sets out a range of source, conveyance, and end-of-pipe controls to manage stormwater.

Toronto Water's 2024-2033 Capital Budget and Plan identifies approximately $4.5 billion in forecast expenditures for stormwater management including initiatives that build conveyance and end-of-pipe solutions, such as new and upgraded stormwater ponds, sewers, tunnels, and tanks to increase the capacity and resilience of City infrastructure to manage excessive stormwater runoff when severe storm events occur. Key initiatives include:

- The Basement Flooding Protection Program (BFPP) to reduce basement flooding risks.
- Wet Weather Flow management projects such as the Don River and Central Waterfront project to enhance surface water quality.
- Watercourse erosion management projects to protect vulnerable City infrastructure.

The City's Basement Flooding Protection Subsidy Program (BFPSP) provides subsidies to eligible residential property owners for installing flood protection measures to reduce

basement flooding risks by isolating the home from the City's sewer system. The City also identifies opportunities to install green infrastructure in the City's right-of-way as part of the City's Green Streets Program to manage stormwater runoff along City streets and roads during typical rainfall events.

Finally, the City aims to raise public awareness about the impacts of stormwater on the environment and property through public education and outreach efforts including multi-media advertising campaigns (e.g., basement flooding and the City's stormwater projects). The City also provides information to the public on things they can do to help manage stormwater and reduce basement flooding risk like the How You Can Help Manage Stormwater webpage on the City's website and an online how-to video series, as well as through in-person outreach at community events.

1.2 Managing Stormwater Runoff on Private Property

A 2022 geospatial analysis by the Technology Services Division identified that property lots account for an estimated 74 per cent (22,585 ha) of impermeable surface areas across Toronto, while City roads, streets and sidewalks account for approximately 26 per cent (8,012 ha). This analysis also found residential properties accounted for 46 per cent (10,317 ha) of impermeable surfaces, with low-rise residential properties (single-family, duplex, triplex and fourplex homes) comprising 96 per cent of that total.

Table 1: Impermeable surface area by property type.

Property type[1]	**Impermeable area (hectares)**	**Impermeable area (%) of all properties in Toronto**
Residential	10,317 ha	46.0%
Commercial	5,977 ha	26.5%
Institutional	2,545 ha	11.0%
Multi-residential (>4 units) apartments and condominiums	1,940 ha	8.5%
Industrial	1,806 ha	8.0%

Impermeable surface areas lead to more stormwater runoff into the City's sewer system. The City's existing programs to reduce stormwater runoff on private property include the Mandatory Downspout Disconnection Program and financial incentives through programs such as the Eco-Roof Incentive, PollinateTO and tree planting initiatives. Details of these programs are in Section 2 of this report.

1 Property type is based on Realty tax code and property code. Public properties (i.e., owned by the City, Province or Federal Government) excluding the City's road allowance are included in the institutional category.

2. Review of Stormwater Management Incentive Programs, Results of Consultation and Conclusions

City Council directed staff to review the City's existing, discontinued, and potential new stormwater mitigation and adaptation programs to reduce impermeable surfaces, stormwater runoff, and basement flooding risks on private property. City Council also directed staff to report back on public input into what programs and incentives would provide the most benefit to residential property owners to decrease impermeable surfaces and mitigate runoff. This section provides information about the review, consultation and public input, and the review conclusions and recommendations.
The review was undertaken by a working group of staff from Toronto Water, Environment, Climate and Forestry, the Office of the Chief Financial Officer and Treasurer, and the Policy, Planning, Finance and Administration's (PPFA) Public Consultation Unit. Staff in other divisions including Parks and Recreation and Engineering and Construction Services (ECS), were also consulted during the review.

The review involved the following tasks:

- **Compilation of information and data** about existing and discontinued City stormwater management incentive programs.
- **Jurisdictional scan / survey of municipalities** in the Greater Toronto Area, Ontario, Canada, and the United States to identify best practices, challenges, benefits, and other details about their stormwater management incentive programs.
- **Review of public feedback** about existing City stormwater management incentive programs and potential new or expanded incentives.
- **Literature review of green infrastructure** including the benefits and limitations of various green infrastructure features that could be considered for stormwater management incentives.
- **Development of guiding principles** to inform the assessment of stormwater management incentive options.

The public consultation on City stormwater management incentive programs took place from October 23 to November 5, 2024. The purpose of the public consultation was to gather public input into what programs and incentives would provide the most benefit to residential property owners to decrease impermeable surfaces and mitigate runoff. The public consultation informed the review by staff of existing, discontinued and potential new City stormwater management incentive programs for private property.
The consultation was communicated to the public through a number of channels, including paid and organic social media advertising, City newsletters, email notifications and by sharing information with City Councillors' offices. Feedback was sought on the following:

- Challenges property owners face in taking actions to manage stormwater on their properties
- Current City stormwater management incentive programs for private property
- Stormwater management features that would be of interest to property owners for potential new or expanded stormwater management incentive programs.

An online survey was the primary tool for gathering feedback. The City received 766 completed surveys. Most survey respondents (96 per cent) were residents of the City of Toronto, with the majority (63 per cent) living in single-family detached homes. Eighty-eight (88) per cent of residential respondents were homeowners, and eleven (11) per cent were renters. The vast majority of respondents (89 per cent) felt it was important for property owners to take actions to manage stormwater on their property.

Many respondents had taken actions to help manage stormwater on their property, including planting trees or vegetation (64 per cent), disconnecting roof downspouts (52 per cent) and repairing home or building foundations (48 per cent). Key challenges identified by respondents included high installation costs (66 per cent), lack of information about suitable solutions (45 per cent) and limited property space (34 per cent).

Additional information about the public consultation and feedback is provided in Attachment 1 - Stormwater Management Incentives Public Consultation Report.

2.1 Review of Existing Stormwater Management Incentive Programs and Consultation

Five existing City stormwater management incentive programs were reviewed:

1. Basement Flooding Protection Subsidy Program (BFPSP)
2. Mandatory Downspout Disconnection Financial Assistance Program (MDDFAP)
3. Eco-Roof Incentive Program (ERIP)
4 PollinateTO Grants Program (PollinateTO)
5. Tree Planting Programs for Private Property

2.1.1 Basement Flooding Protection Subsidy Program (BFPSP)

Established in 2007, the BFPSP is administered by Toronto Water and funded by water rate revenue. The BFPSP offers a one-time subsidy of up to $3,400 per property for eligible homeowners (single-family, duplex, triplex or fourplex residences) to reduce the risk of basement flooding on their properties by installing flood protection measures including:

- Backwater valve - a subsidy of up to 80 per cent of the invoiced cost, to a maximum of $1,250. Backwater valves are designed to close a home’s sewer line during heavy rain, preventing a sewer backup from entering the home.
- Sump pump - a subsidy of up to 80 per cent of the invoiced cost, to a maximum of $1,750. Sump pumps pump water collected by a home’s weeping tile system to an outside area.
- Foundation drain (weeping tile) pipe severance and capping - a maximum of $400.

From 2007 to October 2024, the BFPSP has approved approximately 48,250 applications and issued subsidies totalling approximately $80 million. The BFPSP subsidy amounts were last increased in 2013.

Forty-two (42) per cent of survey respondents were aware of the BFPSP, while 52 per cent were not. Eighteen (18) per cent of survey respondents had participated in (applied to) the BFPSP in the past and 78 per cent had not. The most common feedback from survey respondents about the BFPSP was about the high cost to install flood protection measures and that more information and awareness of the BFPSP would be beneficial, as well as advice on flood protection measures that would be suitable for individual properties.

Staff identified three options for expanded and new subsidies that could be offered by the BFPSP and gathered feedback on these options through the stormwater management incentives public consultation:

- **New subsidy for a home stormwater assessment**: This option would establish a new subsidy for a home stormwater assessment by a licensed professional to advise on potential basement flooding risks and mitigation measures for private properties. The assessment could involve a closed camera (CCTV) inspection of private sewer lateral connections, a review of foundation drain/weeping tile connections, downspout connections, and surface grading around the home's foundation, and would provide information to the homeowner about issues found on private property that should be mitigated to reduce flooding risks. This new option would address a challenge identified by survey respondents concerning the lack of information about stormwater management measures that are right for their property and which BFPSP subsidies they should apply to. Sixty-eight (68) per cent of survey respondents were very or somewhat interested in a home stormwater assessment subsidy. The preliminary estimated costs for this option are $0.8 million per year, which include development and operational costs (program communications, outreach, program materials, and on-line application) and the cost of the subsidy.[2]

- **Increase the backwater valve subsidy amount to subsidize two backwater valves:** This option would increase the maximum subsidy from $1,250 to an estimated $3,200 to subsidize the cost of two backwater valves per property.[3] New applicants could apply for one backwater valve totalling an estimated $1,600 or two backwater valves for an estimated $3,200. The one-time application per property could be changed to allow previously approved applicants for a backwater valve subsidy to apply for a $1,600 subsidy for a second backwater valve. This option would provide additional home isolation for those homes with more than one connection (e.g., homes built in the 1950s and 1960s) to the City's sewers, such as a storm connection in addition to the sanitary connection. However, a property owner would need to know whether more than one backwater valve would be required on the property, which would be addressed through the potential home stormwater assessment subsidy previously mentioned. Sixty-one (61) per cent of

2 The estimated costs for the home stormwater assessment subsidy assumes an uptake rate of 0.35 per cent of eligible residential properties at the estimated maximum subsidy amount of $500 and is based on a three-year average of backwater valve subsidies issued by the BFPSP from 2022 to 2024. Cost estimates would be refined by staff in a recommended report back.

3 $3,200 is an estimated maximum subsidy amount that considers inflation since 2013 and offsetting 80 per cent of the cost for two backwater valves per property. The estimated subsidy amount would be refined by staff in a recommended report back to the Infrastructure and Environment Committee.

survey respondents were very or somewhat interested in this option. The preliminary estimated costs for this option are $4.6 million per year, of which $2.8 million per year would be in addition to current program costs. These estimated costs include development and operational costs (program communications, outreach, program materials, and on-line application) and the cost of the subsidy.[4]

- **Increase the sump pump subsidy amount to include backup power:** This option would increase the maximum sump pump subsidy from the current $1,750 to an estimated $2,550 to subsidize the cost of a sump pump with backup power (battery power).[5] This option would provide additional basement flooding protection for homes with a sump pump by providing backup power to the sump pump in cases when there is a loss of power during severe storms, which was experienced during recent and past severe storm events. Previously approved applicants for a sump pump subsidy could apply for a subsidy (estimated at $300) for a backup power battery to be installed on the existing sump pump. Fifty-six (56) per cent of the survey respondents were very or somewhat interested in this option. The preliminary estimated costs for this option are $3.6 million per year, of which $1.2 million per year would be in addition to current program costs. These estimated costs include development and operational costs (program communications, outreach, program materials, and on-line application) and the cost of the subsidy.[6]

2.1.2 Mandatory Downspout Disconnection Financial Assistance Program (MDDFAP)

The MDDFAP offers a reimbursement of up to $500 to eligible low-income seniors or low-income persons with a disability for the costs of labour and materials for performing downspout disconnection. Since 2013, there has been only one application to the MDDFAP. This low application rate may reflect that most properties in the city have already disconnected their downspouts and may be due to the focused eligibility of the MDDFAP.[7]

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4 Estimated costs for the increased backwater subsidy assumes an uptake rate of 0.35 per cent of eligible residential properties at the estimated maximum $3,200 subsidy amount and is based on a three-year average of backwater valve subsidies issued by the BFPSP from 2022 to 2024. These estimates would be refined by staff in a recommended report back to the Infrastructure and Environment Committee.

5 $2,550 is an estimated maximum subsidy amount that considers inflation since 2013 and offsetting 80 per cent of the cost for a sump pump ($2,250) and back-up power battery ($300). The estimated subsidy amount would be refined by staff in a recommended report back to the Infrastructure and Environment Committee.

6 Estimated costs for the increased sump pump subsidy assumes an uptake rate of 0.35 per cent of eligible residential properties at the estimated maximum $2,550 subsidy amount and is based on a three-year average of sump pump subsidies issued by the BFPSP from 2022 to 2024. These estimates would be refined by staff in a recommended report back to the Infrastructure and Environment Committee.

7 The 2021 field study of almost 19,000 properties across all City wards identified a disconnection rate of approximately 80 per cent and identified that there is a potential maximum potential rate at around 87 per cent.

Forty (40) per cent of survey respondents were aware of the MDDFAP and two per cent of survey respondents had applied to the MDDFAP in the past. The most common feedback from survey respondents about the MDDFAP was the need for greater public awareness of the MDDFAP and more information and advice on how to properly disconnect downspouts. Survey respondents also commented on the need for the City to enforce downspout disconnection.

2.1.3 Eco-Roof Incentive Program (ERIP)

Established in 2009 and administered by the Environment, Climate and Forestry Division, the ERIP helps fund the expansion of green roofs and cool roofs on homes and buildings across the city. Green roofs, also known as living roofs or vegetated roofs, support the growth of vegetation and help manage and reduce runoff from home and building rooftops by helping absorb rainwater. The ERIP offers a financial incentive of $100 per m^2 of green roof area installed, up to a maximum of $100,000 per green roof project. The green roof incentive is available to eligible buildings including all existing buildings, new buildings with a gross floor area of less than 2,000 square feet, and all new construction projects by Toronto school boards and not-for-profit organizations. Since the start of the ERIP, 118 green roof projects have been approved and completed totalling 38,565 m^2.

Nineteen (19) per cent of survey respondents were aware of the ERIP, and one per cent of survey respondents had applied to the ERIP in the past. The most common feedback from survey respondents about the ERIP was the need for more public information and greater awareness of the Program and the provision of technical and professional advice about the suitability and installation of green roofs for individual properties. Survey respondents also commented that there should be a focus to promote the ERIP in high density areas and for buildings with larger roof sizes.

2.1.4 PollinateTO Grants Program (PollinateTO)

Established in 2019 and administered by the Environment, Climate and Forestry Division, PollinateTO offers grants up to $5,000 to groups of three or more people to support community-led projects that create a new pollinator garden, including rain gardens, expand or enhance an existing garden by adding native pollinator-friendly plants, or convert a lawn area, boulevard, or hard surface to a pollinator garden. All Toronto neighbourhoods are eligible for the program. Projects can be on private and/or public land and all sites must be publicly visible. Projects are reviewed by a review committee made up of representatives from several City of Toronto divisions with priority given to projects in Neighbourhood Improvement Areas (NIAs) as well as projects that are Black and/or Indigenous-led or directly engage equity-deserving groups.

PollinateTO funds between 30 to 40 projects annually, and the average amount of funding awarded per project is $3,900. Since 2019, PollinateTO has funded 189 projects, resulting in the creation of 500 gardens including rain gardens and pavement removal through community grants. A total of 25,500 m^2 of habitat has been created through the program, 364 m^2 of which are dedicated rain gardens. PollinateTO, in

addition to tree planting programs, is one of the few City programs that provide incentives to help manage rainfall and runoff at ground level. PollinateTO projects contribute to resilient ecosystems, enhance urban biodiversity, and help reduce runoff by allowing some of it to be absorbed into the ground.

Thirty-eight (38) per cent of survey respondents were aware of PollinateTO, and four per cent of survey respondents had applied to PollinateTO in the past. The most common feedback about PollinateTO included suggestions to offer smaller grants for individual private properties. Survey respondents also suggested there should be outreach to building managers and the building sector about PollinateTO so that pollinator and rain gardens are considered when pavement is being replaced or removed on private property.

PollinateTO is designed to fund community-led projects of high public visibility and that incorporate community engagement and education initiatives. Single private properties and individuals are not eligible to apply to PollinateTO. In addition, PollinateTO is a competitive grant process, so applications received are reviewed against other applications based on the priorities mentioned above for project approval.
There has been a growing interest in rain gardens from resident groups (20 per cent increase each year since 2019).

2.1.5 Tree Planting Programs for Private Property

Established in 2017 and administered by the Environment, Climate and Forestry Division, tree planting programs for private property provide grants to support tree planting projects and supply free native trees and shrubs for community-led tree giveaways and planting events on private property. These programs are an important component of the City's Tree Canopy Strategy. Trees intercept rainfall and the canopy collects raindrops that either evaporate back into the atmosphere or drip slowly onto the ground, helping to reduce the volume and intensity of runoff. These programs are open to residential, multi-residential and business properties that meet minimum space requirements. Public consultation focused on two programs:

- *The Backyard Tree Planting Program* is delivered in partnership with Local Enhancement and Appreciation of Forests (LEAF) and offers backyard trees and tree planting services at a subsidized cost ($160 to $230 per tree, native shrubs for $30, and eastern white cedars for $50) to Toronto residents. The Backyard Tree Planting Program has subsidized 6,461 plantings from 2017 to 2023.

- *Community Canopy Program* is delivered in partnership with the Arbor Day Foundation and connects Toronto residents with free trees through an online mapping tool that provides information on where to plant a tree on a specific property. The Community Canopy Program has subsidized approximately 5,000 plantings from 2020 to 2023.

There is also the Neighbourhood Planting Program that supports community-led tree giveaway and planting events through the supply of free native trees and shrubs, financial assistance of up to $500, and education and technical support. This program has subsidized approximately 22,150 plantings from 2017 to 2023.

Tree planting programs were the most well-known programs with fifty-one (51) per cent of respondents being aware of the programs, and fifteen (15) per cent of respondents reporting they had applied to the City's tree planting programs in the past. The most common feedback was a general comment about the need to protect trees in Toronto. Respondents suggested that there should be more options for the types of tree species that can be planted on properties and a need for maintenance support by the City for the lifecycle of trees.

2.2 Conclusions Regarding Existing Stormwater Management Incentive Programs

Staff conclude that the City, through its existing programs, offers a range of stormwater management incentives for private property such as subsidies and grants comparable to other jurisdictions in North America. However, there are opportunities for new and expanded subsidies to reduce stormwater runoff and basement flooding risks on private property. The conclusions and recommendations from the review of existing City stormwater management incentive programs are presented below.

2.2.1 Basement Flooding Protection Subsidy Program (BFPSP)

The three options for new and expanded BFPSP subsidies – a new home stormwater assessment subsidy, increased backwater valve subsidy amount for two backwater valves, and increased sump pump subsidy for back-up power – would help to further reduce basement flooding risks on private property.

The public consultation revealed interest in these three BFPSP subsidy options and feedback indicated these options would help address some of the respondents' concerns about the high costs of installing flood protection measures and the need for advice about which basement flooding protection measures are suitable for their property. Implementation of these options would be supported by an enhanced communications campaign to raise awareness and participation in the BFPSP.

The staff-prepared 2025-2034 Toronto Water Capital Budget and Plan includes $95.0 million in additional funding over the 10-year period to support expanding existing BFPSP incentives and implementing new incentives. Additional review and assessment of the options are required before seeking Council approval. This report recommends staff report back to the Infrastructure and Environment Committee no later than Q3 2025 providing more details on the potential establishment of the new and expanded subsidy options under the BFPSP.

2.2.2 Mandatory Downspout Disconnection Financial Assistance Program (MDDFAP)

While participation in the MDDFAP is very low, with only one application in the past 10 years, staff conclude that this program should remain in place for eligible low-income seniors or low-income persons with a disability to offset the costs of labour and materials for performing downspout disconnection. Staff do not have any recommendations for changes to the MDDFAP.

2.2.3 Eco-Roof Incentive Program (ERIP)

Staff conclude that participation in the ERIP could be further enhanced through additional public outreach and education to increase awareness of the Program (19 per cent of survey respondents were aware of the ERIP), in addition to providing more technical and professional advice about the suitability and installation of green roofs for individual properties.

In 2025, the ERIP will focus on increased property owner education and awareness (e.g., public webinars, in person tours), and expanded education efforts to the roofing industry about the ERIP and benefits of green as well as cool roofs. There is also a program review underway that will continue into 2025 that aims to identify program improvement opportunities through research and stakeholder engagement.

2.2.4 PollinateTO Grants Program (PollinateTO)

Staff conclude there is an opportunity to achieve additional reductions in stormwater runoff on private property by supplementing the PollinateTO rain garden grant currently available to groups of three or more people and is a competitive grant review and approval process. Specifically, a separate rain garden subsidy with a non-competitive application and offered to individual property owners should be considered further as part of a potential new green infrastructure incentive program. Such a subsidy would address a growing interest in rain gardens from resident groups identified by PollinateTO staff and suggestions from survey respondents that PollinateTO should provide smaller grants for individual properties.

2.2.5 Tree Planting Programs for Private Property

Based on the survey feedback, staff conclude that there is a good level of awareness and participation in the City's tree planting programs and, as such, do not have any recommendations for changes to the incentives currently provided by these programs.

2.3 Review of Discontinued Stormwater Management Incentive Programs and Consultation

Staff also reviewed two programs previously offered by the City that have been discontinued:

1. Rain Barrel Subsidy Program (discontinued in 2012)
2. Community Program for Stormwater Management Grants (discontinued in 2011)

2.3.1 Rain Barrel Subsidy Program (discontinued in 2012)

As part of its water efficiency initiatives, the City offered subsidized rain barrels for sale at a cost of $60 per rain barrel at Community Environment Days, as well as by application to the City. The rain barrels were provided as part of the discontinued Voluntary Downspout Disconnection Program, which was replaced by the Mandatory Downspout Disconnection Program, at which time the rain barrel sales were discontinued.

Rain barrels temporarily store runoff from a home or building roof that can be reused for watering lawns and some gardens. From a stormwater management perspective, depending on the rain barrel size, roof size, and intensity of a rainfall event, rain barrels provide limited benefits compared to other measures that promote infiltration and runoff reduction on a property. Records concerning the number of rain barrels sold and cost of the program were not found by staff as part of the review of discontinued City stormwater management incentive programs.

Sixty-nine (69) per cent of survey respondents were very or somewhat interested in subsidized rain barrels. Survey respondents who were interested in a potential subsidized rain barrel program commented that rain barrels are easy to install, manage, are low cost, and help to conserve water. However, it was felt that rain barrels are not effective in addressing high volumes of rainfall from larger storm events. Respondents who were not interested expressed concerns about mosquitoes, maintenance requirements and potential overflow of a barrel, in addition to concerns about limited space for a rain barrel near a home's roof downspout. Some participants also commented that rain barrels are unattractive.

The cost to the City to reestablish and operate a rain barrel subsidy program is estimated at $0.2 million to $0.4 million annually.[8]

2.3.2 Community Program for Stormwater Management Grants (discontinued in 2011)

Discontinued by City Council in September 2011, the CPSWM Grant Program was administered by Environment, Climate and Forestry Division (formerly known as the Toronto Environment Office, from 2010 to 2011) and was previously administered by Toronto and Region Conservation Authority (TRCA) from 2004 to 2009. Community groups and non-profit organizations including schools were eligible to apply for funding grants up to $25,000 for projects, such as rainwater harvesting, permeable pavement, naturalization and related education and outreach, within the City of Toronto that supported the City's Wet Weather Flow Master Plan and Policy. In the last two years of the program, fifteen projects were approved with funding totalling approximately $328,000.

This grant was discontinued and funds were redirected to support the development and dissemination of public education and communication program to inform homeowners and contractors about:

- climate change impacts associated with intense storms, related to basement flooding;
- the importance of downspout disconnection and “home isolation” consisting of the installation of sewer backwater valves and the capping off of storm sewer laterals with the installation of a sump pump to help prevent basement flooding;

8 Estimate includes execution of a promotional campaign and development of an online application, program staff for inquiries and application handling, and the cost of the subsidy assumes 2,675 rain barrel subsidies annually at a cost of $60 per rain barrel to the City and an 0.6 per cent uptake annually based on uptake rates in other municipalities that offer rain barrel sales.

- the importance of other lot level controls (e.g., proper lot grading); and
- the City's Basement Flooding Protection Subsidy Program.

2.4 Conclusions – Discontinued Stormwater Management Incentive Programs

Staff conclude the incentives previously offered by discontinued City stormwater management incentive programs should not be re-established.

2.4.1 Rain Barrel Subsidy Program

The re-establishment of a rain barrel subsidy program would be less effective than other stormwater management measures that could be incentivized by the City to provide greater stormwater management benefits including infiltration and the reduction of runoff on private property which are key factors in mitigating basement flooding. In addition, the survey identified concerns about rain barrels, including the ongoing maintenance required to keep them in good working order and the risk of exposed standing water.

2.4.2 Community Program for Stormwater Management Grants

The types of projects eligible for grants offered by the CPSMG are offered by existing City stormwater management incentive programs (e.g., ERIP and tree planting programs).

2.5 Review of New Potential Stormwater Management Incentive Programs and Consultation

While the City's existing stormwater management incentive programs provide subsidies to reduce runoff on private property from home and building roofs (e.g., ERIP), there are limited subsidies available to promote water infiltration at the ground level. This presents an opportunity for the City to develop a new stormwater management incentive program for private property owners to install green infrastructure on their properties to promote infiltration and reduce stormwater runoff at the ground level. In considering the potential establishment of a new City incentive program for stormwater management on private property, staff developed the following guiding principles:

- **Advance the City's Wet Weather Flow Policy objectives** by reducing the quantity of stormwater runoff (runoff reduction) entering the City's sewer system; improving the quality of stormwater runoff (water quality, pollutant removal), and support water balance/recharge;
- **Encourage best practices** including green infrastructure that promote infiltration for lot-level controls;
- **Be flexible** and provide a range of stormwater management incentive options taking into consideration the suitability of green infrastructure features on different properties based on the property's characteristics such as type, size, and soils;
- **Be simple** in its design to minimize administrative requirements and costs for the City to operate the program; and,
- **Consider affordability and equity** for participants including equity-deserving communities.

2.5.1 Potential Green Infrastructure Incentive Program

This potential program would provide subsidies to private property owners to install green infrastructure and reduce impermeable surfaces. Green infrastructure leverages vegetation, soils, and natural systems to absorb runoff and filter pollutants, delivering environmental and social benefits like biodiversity, climate resilience, and urban cooling. For typical rainfall events, green infrastructure can help reduce the volume of stormwater runoff entering municipal sewer systems and surface waters, reducing the negative impact of stormwater runoff on surface water quality. During severe storm events, green infrastructure is limited in its capacity to infiltrate large volumes of rainfall over a short duration of time. Green infrastructure also has limitations with respect to stormwater on private property, as it needs to be regularly maintained by property owners to ensure it is functioning as designed.

The survey asked about green infrastructure features that would be of interest to the public if the City were to provide a subsidy or grant. The feedback is presented in Table 2, showing a net positive level of interest for all the green infrastructure features. The highest net level of interest was for rain gardens/bioretention units and permeable pavement. General positive comments about green infrastructure included the multiple benefits for the environment and stormwater management, particularly infiltration of water to reduce runoff. Some respondents questioned the stormwater management benefits of green infrastructure for severe storm events and reducing flooding. Disadvantages or concerns expressed included space on a property, costs to install green infrastructure, and the need for ongoing maintenance. Another common concern was the potential impacts of water infiltration on a property's house or building and on surrounding properties.

A common suggestion for a potential green infrastructure incentive program was for the City to support property owners by providing information and education about the suitability, proper installation and maintenance of green infrastructure on private property.

Table 2: Survey respondent interest and comments about green infrastructure

Green Infrastructure Feature	Level of interest	Key respondent comments
Rain gardens/bioretention units Sunken planting beds with highly permeable and nutrient-rich soils that collect, absorb, and treat runoff from roof downspouts, driveways and parking areas	76% interested 11% not interested	Advantages: Rain gardens would help direct and infiltrate water from the roof downspout or discharge from a sump pump. Rain gardens are beneficial to local ecosystems and biodiversity and make effective use of roof runoff. Disadvantages: Rain gardens may not be feasible based on space requirements on a property. Concerns were expressed about costs, labour and impacts on existing landscaping. Respondents who were not interested commented that rain gardens are ineffective for extreme rainfall events and flooding and that the City should focus on infrastructure upgrades.

Green Infrastructure Feature	Level of interest	Key respondent comments
Permeable pavement Type of hard surface such as permeable interlocking pavers and porous asphalt or concrete that allows runoff to seep into and between the paving materials and be absorbed into the ground	69% interested 17% not interested	Advantages: Permeable pavement provides multiple benefits for stormwater management and is a good solution for properties with a large amount of pavement. It provides a practical alternative to impermeable pavement for driveways, walkways, and large and small spaces on a property. Disadvantages: Concerns about costs to install, maintenance (e.g., weed growth), accessibility issues (e.g., potential tripping hazard), uncertainty about winter maintenance (e.g., snow removal), and suitability for all properties, considering soil types and groundwater levels.
Soakaway pits Underground storage systems that receive runoff on a property and allow it to be absorbed into the ground. They are typically lined with geotextile fabric and are filled with granular stone or other materials that allow water to travel through the pit.	58% interested 19% not interested	Advantages: Soakaway pits are beneficial for water infiltration to reduce runoff. They can be installed at various locations on a property to accept runoff from roof eavestroughs and driveway areas. Disadvantages: Concerns about the space required for a soakaway pit and suitability for properties with limited space and with high water tables and clay soils. Respondents commented on potential impacts to a home if the soakaway pit is too close to the home's foundation. Respondents also commented soakaway pits seemed complex and require maintenance.
Pavement removal Removal of impermeable pavement such as concrete walkways, patios and other landscaping, and replacement with soft surfaces like grass or native vegetation	54% interested 26% not interested	Advantages: Pavement removal and replacement with soft surfaces provides multiple benefits for stormwater management and the environment. Disadvantages: Concerns about accessibility issues (e.g., ground stability for individuals with mobility supports). Respondents expressed uncertainty about potential impacts on surrounding properties and asked if there would be conflicts with City bylaws. Those who were not interested commented that pavement is needed for driveways and walkways.

Staff reviewed green infrastructure incentive type programs in other jurisdictions and developed a proposed framework for a potential City green infrastructure incentive program for private property ("proposed program framework"). The proposed program framework contemplates the establishment of a new City green infrastructure incentive program that could offer a maximum total subsidy of $5,000 per property[9] for a range of green infrastructure features which may include:

9 All subsidy amounts are estimates which consider subsidy amounts offered in other municipalities with a green infrastructure program and would be further assessed and refined in a recommended report back to the Infrastructure and Environment Committee.

- Rain gardens up to a maximum $2,500 subsidy per property
- Permeable pavement retrofits up to a maximum $5,000 subsidy per property
- Pavement removal with replacement with soft landscaping (area for trees, plants or other landscape or architectural elements excluding hard-surfaced areas such as decorative stonework, retaining walls) up to a maximum $2,500 subsidy per property
- Soakaway pits up to a maximum of $2,500 subsidy per property

A potential green infrastructure incentive program based on the above framework would be most suitable for residential properties and possibly smaller multi-residential and commercial properties, taking into consideration the estimated subsidy amounts, the size and impermeable area on a property, and eligibility of green infrastructure incentive programs in other jurisdictions which are offered to residential, multi-residential and commercial property owners and tenants (with permission of the landlord).

Non-residential properties such as industrial institutional and larger commercial properties typically have large impermeable surface areas and a subsidy of $5,000 may not be effective in supporting sufficient green infrastructure features to meaningfully reduce stormwater runoff. Section 3 of this report discusses stormwater management incentive programs that would be more suitable for larger non-residential properties.

The proposed program framework also contemplates an online application process for a property owner or tenant to apply for a green infrastructure subsidy, with staff reviewing and approving applications received. The application review would not be a competitive grant process and any property owner who applies would receive the subsidy if the application meets the program eligibility requirements (subject to available program funding).

A City green infrastructure incentive program for private property would require additional staff in a City division, potentially Environment, Climate and Forestry Division, to administer the program and establish potential partnerships with external organizations that provide services for the installation of green infrastructure on private property. Such a program would have IT requirements involving the development of an online application form and tracking system. The potential program would also require development of program and education materials, a webpage on the City's website, social media and other promotion and outreach tactics to raise awareness of the program. It is estimated that the cost to develop such a program would be approximately $0.5 million and costs to operate the program would range from $5.8 million to $14.0 million annually depending on the level of uptake.[10]

2.6 Conclusion Regarding New Potential Stormwater Management Incentive Programs

Staff conclude there is merit to further consider the establishment of a new City green infrastructure incentive program that would provide new subsidies to private property

10 Estimates are based on 2 FTEs assuming a $5,000 subsidy issued per application and a low estimate of 0.25 percent uptake and a high estimate of 0.6 per cent uptake similar to the City's BFPSP. The estimates would be reviewed and refined for a recommended report back to the Infrastructure and Environment Committee on a City green infrastructure incentive program.

owners to install green infrastructure and reduce impermeable surfaces. A green infrastructure incentive program would supplement the City's existing stormwater management incentive programs that provide limited incentives for reducing impermeable surface areas at the ground level, particularly on residential properties, which account for an estimated 46 per cent of impermeable surface area of all properties in Toronto. There is also public interest in green infrastructure incentives. Depending on uptake, a City green infrastructure incentive program offers the potential to achieve stormwater runoff reductions and complement the City's efforts to manage stormwater through nature-based solutions, and support biodiversity and the City's efforts to make Toronto more resilient to climate change.

Additional review and planning are required to develop details for a new green infrastructure incentive program prior to seeking Council approval. This report recommends that Environment, Climate and Forestry Division, in consultation with Toronto Water, Transportation Services and other relevant City divisions, report back to the Infrastructure and Environment Committee no later than Q3 2025 on a plan to implement such a program. The report back will provide additional details to establish and operate a green infrastructure incentive program including, but not limited to program administration, eligible green infrastructure features, subsidy amounts, applicant eligibility and application requirements, refined estimates of cost and resources, and potential funding sources for the program.

3. Opportunities to reduce stormwater runoff on non-residential properties

In July 2024, City Council directed staff to assess, consult and report back on opportunities to reduce stormwater runoff from non-residential properties whose impermeable surfaces drive up flooding, stormwater costs, beach closures, and water pollution. As previously noted, some existing City programs such as the Eco-Roof Incentive Program provide subsidies to non-residential properties that help reduce stormwater runoff. This section provides information on previous consultations concerning opportunities to reduce stormwater runoff on non-residential, specifically commercial and industrial properties, and refers to more recent consultation undertaken by the Office of the Chief Financial Officer and Treasurer in fall 2024 with commercial sector representatives and other interested parties in consideration of a potential commercial parking levy.

3.1 Stormwater Charge/Credits for Industrial and Commercial Properties Consultation (2020-2021)

Toronto Water consulted with representatives from the industrial and commercial sectors and interested parties (water users' consultation on fees, charges, and programs) about the potential implementation of a stormwater charge only for industrial and commercial properties (I&C SW charge) as well as stormwater charge credits.

A 2021 jurisdictional scan identified that a stormwater charge and credits program is the most common approach in other municipalities for incentivizing stormwater management on non-residential properties. The stormwater charge credits provide a reduction of the stormwater charge if a property owner takes actions to manage

stormwater on their property to meet the credit programs' requirements for stormwater management, such as water quantity and quality controls.

A broad range of participants expressed support and I&C stormwater charge and credits and commented that an I&C stormwater charge should be expanded to all properties over time. The staff report on the I&C stormwater charge and credits consultation and assessment titled “Water Users Consultation on Water Fees, Charges and Programs” (considered by Council in July 2021) did not recommend an I&C stormwater charge based on significant challenges to the City to implement such a charge, specifically:

- No municipality had implemented a stormwater charge exclusively for I&C properties.
- An I&C stormwater charge would require restructuring of the current two block water rate structure, resulting in a more complex property class-based water rate structure.
- An I&C stormwater charge would also result in charging customers on a different basis (water consumption or impermeable area) for the same stormwater management services, posing significant challenges for applying such a charge to mixed-use properties (e.g., a residential condominium with commercial entities).

The consultation also explored grant programs, like those offered by some jurisdictions in the United States such as the City of Philadelphia and the Green Infrastructure Grant Program in the Northeast Ohio Regional Sewer District (NEORSD). These grant programs were established to meet the US Environmental Protection Agency (US EPA) Consent Agreement requirements to reduce the amount of pollution, specifically combined sewer overflows (CSOs) to creeks, streams, and rivers. These programs are aimed at larger non-residential properties with significant impermeable surface areas (e.g., large parking areas) and offer grants to reduce impermeable surface area and install green infrastructure. As such, the grant amounts offered are significantly larger than subsidies offered for residential programs. For example, the City of Philadelphia's Stormwater Grant Program annual budget in 2020 was $30 million ($US) and the average grant per application was $500,000 ($US). The grant amount takes into consideration the scale of stormwater management measures required to meet the program’s requirements and objectives such as stormwater quantity and quality controls on large non-residential properties.

In July 2021, City Council directed Toronto Water to undertake consultation and report back on the possible implementation of a stormwater charge for all property classes and stormwater charge credits program for large properties, as well as an “administrative water charge”, referred to as a water service charge in subsequent consultations.

3.2 Stormwater Charge and Credit Program and Water Service Charge Consultation (2022-2024)

The consultation on a potential stormwater charge for all properties and a stormwater charge credits program for large properties commenced with a first round of consultation with interested parties in late 2022. The consultation also sought feedback on a potential water service charge (referred to as an “administrative water charge” in City Council direction from July 2021) that would remove certain fixed costs (e.g., billing costs for the water and sewer services portion of the utility bill, water meter servicing

costs, and other fixed costs for the administration of water and wastewater services) from the water rate and show them as a separate charge (the water service charge) on the utility bill. The costs recovered by both potential charges would be removed from the water rate, resulting in a decrease in the water rate.

The first round of consultation with interested parties gathered initial feedback from interested parties (virtual consultations with the Toronto Industry Network, ICI sector associations, environmental organizations, developers and some City and external agencies) on the potential charges and stormwater charge credits program to inform broader a second round of consultation with the public.

There was strong support for a potential stormwater charge from large volume water users, particularly industrial and some commercial sector participants. Environmental groups also strongly supported a stormwater charge. Reasons for support included that the stormwater charge is felt to be a fairer way to charge properties for stormwater management services rather than water consumption and it would promote environmental sustainability. The water service charge was supported by industrial stakeholders based on the principle of fairness. Some other participants expressed concerns that the water service charge would penalize low water consuming properties.

Support was also expressed for stormwater charge credits that would provide an opportunity for properties to receive a reduction on a stormwater charge by implementing measures on their property to better manage stormwater. Participants suggested that the City should consider stormwater charge credits, as well as other incentives, for smaller properties and focus on encouraging the installation of green infrastructure to reduce stormwater runoff on residential properties.

A second round of broader consultation with the public and interested parties began in March 2024 but was paused in April 2024 to consider alignment of a potential stormwater charge with the City's broader climate resilience strategy, a potential CPL, and the City's long-term financial plan. The stormwater charge and water service charge consultation remains paused as of January 2025.
Prior to pausing the second round of the stormwater charge and water service charge consultation in April 2024, Ipsos completed public opinion research (from March 18 to April 3, 2024) for the City concerning a potential stormwater charge and water service charge. The research involved an online survey using a representative sample of 1,000 Toronto homeowners 18 years of age or older.

The key findings from the Ipsos survey were as follows:

- **Potential Stormwater Service Charge**
  - Forty-seven (47) per cent of Toronto homeowners did not support a stormwater charge, while 35 per cent support it, and 18 per cent are uncertain.
  - Thirty-six (36) percent of Toronto homeowners saw the stormwater charge as the right way to charge property owners for stormwater management, while 47 percent did not, and 17 percent were uncertain.
  - Thirty-six (36) percent of Toronto homeowners saw the stormwater charge as a necessary change, while 45 per cent did not, and 19 per cent were uncertain.

    - The main reasons for support included a desire for charge transparency and promoting environmental sustainability.
    - The main reasons for non-support were concerns about cost implications, with 79 per cent of homeowners worried about the impact on their utility bill.

- **Potential Water Service Charge**
    - Forty-eight (48) per cent of Toronto homeowners did not support a water service charge, while 30 per cent support it, and 23 per cent are uncertain.
    - Thirty-four (34) per cent of homeowners saw the water service charge as a the right way to charge property owners for fixed costs that do not vary directly with water use, while 44 per cent did not, and 23 were uncertain.
    - Thirty-two (32) percent of Toronto homeowners saw the water service charge as a necessary change, while 46 per cent did not, and 23 per cent were uncertain.
    - The main reasons for support include transparent pricing and that the charge was seen to be reasonable.
    - The main reasons for non-support were concerns about cost implications, with 77 per cent of homeowners worried about the impact on their utility bill.

In fall 2024, staff in the Office of the Chief Financial Officer and Treasurer consulted with commercial sector representatives and other interested parties on the implementation of a potential commercial parking levy (CPL). This consultation included discussion of opportunities to establish stormwater mitigation and adaptation programs for private property including reducing large-scale property impermeable paved surfaces. At the CPL consultation meetings, staff presented and sought feedback on opportunities, namely a stormwater “surcharge” or “levy” based on impermeable surface area on a property, to fund potential incentive programs for private property with the aim to reduce impermeable surface area and stormwater runoff. Participants were also asked what the City could do to help incentivize better on-site stormwater management on their properties.

Commercial stakeholders raised significant concerns during the CPL consultation sessions about the cost impacts of a potential stormwater “surcharge” or “levy” that would apply to the same impermeable surface area on commercial properties that would be subject to a CPL.

Based on the feedback received as part of the CPL consultation sessions, the feedback received through previous City consultations on a potential stormwater charge, and in recognition of the recommendation to report back to the Infrastructure and Environment Committee on a plan to implement a green infrastructure incentive program for private property to help reduce stormwater runoff, staff recommend indefinitely suspending further engagement and/or consideration of a stormwater charge.

Staff also recommend indefinitely suspending further engagement and/or consideration of a potential water service charge based on the feedback received through the City’s public consultation on a water service charge (and stormwater charge) in spring 2024, prior to the consultation being paused in April 2024 to consider alignment of a potential stormwater charge with the City’s broader climate resilience strategy, a potential CPL, and the City’s long-term financial plan.

4. Resources and Funding to Meaningfully Reduce Basement Flooding

City Council directed staff to assess and report back on what additional resources City divisions would require to meaningfully reduce basement flooding across Toronto, and how those resources should be funded. In addition to the opportunities outlined above respecting reducing stormwater runoff and the risk of basement flooding, this section presents an update on the implementation of the Basement Flooding Protection Program (BFPP) and a preliminary analysis of additional resources and funding required to meaningfully reduce basement flooding risks by accelerating on the ongoing implementation of the BFPP, specifically, the construction of recommended local sewer infrastructure improvement projects from completed Basement Flooding Environmental Assessment (EA) studies.

The City's key program to reduce basement flooding risks is the BFPP which is recognized in the City's Resiliency Strategy as a major initiative to build climate resilience for the City's infrastructure. The BFPP is a multi-year program that involves the completion of Basement Flooding Environment Assessment (EA) studies in 67 basement flooding study areas across the entire city, which are led by Toronto Water. EA studies assess basement and surface flooding risks from severe storm events and recommend stormwater and sewer infrastructure improvements to mitigate those risks. As of December 2024, EA studies have been completed for all 67 basement flooding study areas. The recommended BFPP projects from completed EA studies proceed to the implementation phase, led by Engineering and Construction Services (ECS), which involves design followed by construction. Recommended projects are prioritized for implementation based on whether they meet a $68,000 cost per benefitting property (CPB) threshold. Toronto Water's 2024-2033 Budget and Capital Plan allocates approximately $2 billion for the BFPP studies, projects engineering (design, services during construction, post construction) and construction. Construction of recommended BFPP projects includes large (major) storm sewer trunks and tunnels and local sewer improvement projects.

4.1 BFPP major storm trunk and tunnel projects

As of the end of 2024, two major storm trunk and tunnel projects for basement flooding protection are being implemented:

- *Fairbank Silverthorn Storm Trunk Sewer System* – comprised of a 3-kilometre long, 4.5 metre in diameter storm tunnel and 17 kilometres of new storm collector sewers. Construction began in 2021, with expected completion in 2028. When fully constructed, this project will benefit approximately 4,645 properties and provide surface flooding protection across a 140-hectare area spanning four City wards.
- *Mid-Town Toronto Storm Sewer Relief Project* – comprised of a 7-kilometre long, 3 metre in diameter storm tunnel and a new 25,000 cubic metre stormwater storage tank facility under Memorial Park. The project is currently in detailed design and, pending obtaining necessary easement arrangements with the Toronto District School Board, is scheduled to begin construction in 2026 (completion expected in 2032). When fully constructed this project will benefit approximately 900 properties.

4.2 BFPP local sewer projects

By the end of 2024, approximately $1.15 billion is projected to have been spent on the construction ($655 million) and related activities such as engineering, design, studies, and flow monitoring ($460 million) for local BFPP projects. Between 2019 and 2024, BFPP construction has mitigated basement flooding risks for more than 13,700 benefitting properties. The BFPP currently has an estimated $18.6 billion in local sewer projects that have been identified through the completed EA studies. Approximately $5.5 billion of these projects are under the $68,000 CPB threshold to proceed to design and construction. Over $12 billion of the BFPP local projects exceed the $68,000 CPB threshold and will be scheduled for design and construction following implementation of the projects under the CPB threshold.[11]

Toronto Water's 2024-2033 Budget and Capital Plan includes an average of $113 million annually for BFPP local projects construction. At this rate of expenditure and delivery, it is estimated that construction completion of the remaining projects that meet the CPB threshold (approximately $5.5 billion of projects) would take about 50 years. Based on a preliminary estimate, ECS anticipates that an additional $50 million in annual expenditures for the construction of BFPP local projects would result in an estimated 50 per cent increase in construction delivery rate and could equate to more than 1,000 additional properties benefitting per year. This would reduce the construction of completion of BFPP local projects (meeting the CPB threshold) from the estimated 50 years to approximately 35 years.

To facilitate management of the design and construction of an expanded BFPP local program, ECS advises that a new BFPP unit within ECS with additional staff positions (Manager, Senior Engineer, Engineers/Project Managers, Issues Management Coordinator) is required for consultant management and community outreach. While additional funding for BFPP local program construction could be considered in future budget submissions, ECS advises that there are various constraints that impact the completion of BFPP local project designs so that these projects can proceed to construction and will require mitigation. Constraints include negotiating easements with property owners, capital coordination with other capital projects in the same area, regulatory approvals, and possible supplier challenges and disputes.

A review of the capital delivery process used by the City's Infrastructure Services divisions is currently underway. The goal is to enhance capital program delivery models, as well as contract management and procurement processes, to better meet the demands of a growing and increasingly complex capital program. The outcomes of the capital program delivery review, along with recommendations to improve capital delivery, will be presented in a future report to the Infrastructure and Environment Committee in the first half of 2025. Recommendations regarding changes to procurement processes for capital delivery will be considered by the General Government Committee.

There is an opportunity for Toronto Water to further explore options to accelerate the BFPP local sewer program implementation. As such, in 2025, in consultation with ECS

11 The $18.6 billion and over $12 billion amounts include construction estimates based on local project costs from completed BFPP EA studies and do not include inflation or engineering costs.

and in consideration of their report findings, Toronto Water plans to assess options to increase expenditures for the BFPP local program and report to Infrastructure and Environment Committee on the outcomes of that options assessment.

CONTACT

Eleanor McAteer, Director, Water Infrastructure Management, Toronto Water, 416-397-4631, Eleanor.McAteer@toronto.ca

Alice Xu, Director, Policy, Planning and Outreach, Environment, Climate and Forestry, 416-392-2085, Alice.Xu@toronto.ca

SIGNATURE

Lou Di Gironimo
General Manager, Toronto Water

James Nowlan
Executive Director, Environment, Climate and Forestry

ATTACHMENTS

1. Stormwater Management Incentives Public Consultation Report