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2025 CAPITAL BUDGET BRIEFING NOTE

Basement Flooding Protection Program – Program Status Update and Project List: 2025 to 2029

Issue:

City Council, through the creation of the City's Basement Flooding Protection Program (BFPP), directed Toronto Water to reduce the risk of basement flooding across the City by implementing a combination of public drainage system improvements and leveraging policies, by-laws, and incentives to reduce flood risks on private and public properties.

Through the annual budget process, this briefing note provides an update on Toronto Water's efforts to reduce basement flooding risks. Attachment 1 includes ward by ward updates summarizing the progress on Basement Flooding studies, infrastructure upgrades, and subsidies granted for private property flood protection devices.

City Council has also directed the General Manager of Toronto Water to submit an updated five-year list of Basement Flooding Protection Program capital projects as part of the annual Capital Budget submission process. This briefing note provides a list of projects proposed for construction initiation in 2025 through 2029.

To account for inflation and current market rates, cost estimates for many planned Basement Flooding Projects have been adjusted. This resulting cost escalation impacts program outcomes by reducing the number of Basement Flooding Projects that can be constructed each year and creates challenges in forecasting which projects can be delivered within available budget. These impacts are reflected in the attached list of projects.

As directed by City Council on December 17, 2019, the attached ward profiles and list of projects by ward provide Councillors with updates on the rate-supported studies and projects proceeding in their respective wards.

Background:

The Basement Flooding Protection Program (BFPP) increases the City of Toronto's resilience to climate change and the hazard of flooding. Toronto Water specifically contributes to the achievement of action items B1.1, B1.2, and B1.3 of the [City's Resilience Strategy](#) through its:

- efforts to upgrade municipal drainage infrastructure;
- continuous contributions to research; and
- annual consideration of the program's accomplishments.

The BFPP was expanded City-wide following the severe storm of July 8, 2013 and resulted in the creation of new Basement Flooding study areas (bringing the total to 67 study areas). At its meeting on March 10 and 11, 2015, City Council requested the General Manager, Toronto Water, initiate and expedite the completion of new Basement Flooding EA studies for the remainder of the City, specifically Study Areas 42 through 67, and in the order of priority as shown in Schedule A to the report (December 18, 2014).

Since the program's inception, severe rain events have underscored the critical need to complete Basement Flooding studies city-wide, enhance the level of service of the City's infrastructure, and strengthen the city's resilience to extreme weather.

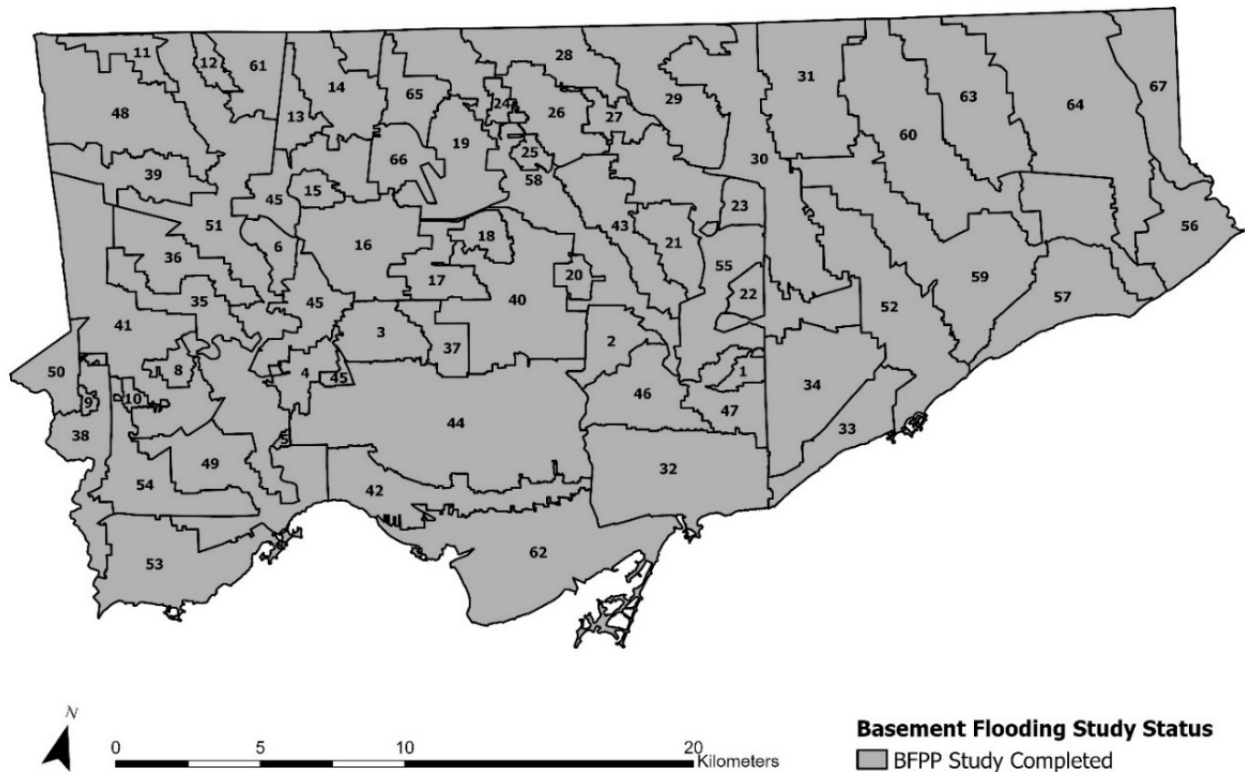
Basement Flooding Studies

Studies are conducted to assess the capacities of the City's existing overland, storm, sanitary, and combined sewer drainage systems and recommend infrastructure improvements that reduce the risk of basement and surface flooding. However, deficiencies in private drainage systems are not identified or assessed through the City's Basement Flooding studies.

Infrastructure upgrades are identified through Basement Flooding Studies, which are carried out in accordance with Municipal Class Environmental Assessment (EA) Study process. These comprehensive studies examine both the sewer system and above ground areas to develop recommendations to reduce the risk of flooding.

As of December 2024, all 67 Basement Flooding Study Areas have been completed. **Figure 1** depicts the 67 Basement Flooding Study Areas.

Figure 1 - Basement Flooding Study Areas



Cost Escalation and Impact on Implementation

Toronto Water continues to revise cost estimates for many planned Basement Flooding Projects to align with current construction market rates. Significant cost increases in recent years have impacted the delivery of planned projects across the BFPP. These impacts include fewer projects proceeding to construction over the next five years and greater difficulty in forecasting construction start dates for new BFPP projects. These impacts are reflected in the attached BFPP 2025-2029 Project List – Attachment 2.

Implementation of Infrastructure Upgrades

Infrastructure upgrades to municipal drainage systems are prioritized and scheduled based on Council approved criteria to protect the greatest number of properties as soon as possible within approved budgets. These upgrades are also coordinated with other capital projects. By the end of 2024, approximately \$1.15 billion is projected to have been spent on construction and related activities (e.g., engineering, design, studies, flow monitoring, etc.) within the BFPP. In the last 6 years (2019 to the end of 2024), BFPP construction has mitigated basement flooding risks for more than 13,700 benefitting properties.

A key criterion in the decision to proceed with the design and construction of BFPP infrastructure upgrades is that storm and combined sewer upgrade projects must cost \$68,000 or less per benefitting property. Properties are considered to be benefitting if they move from not meeting the targeted levels of service for drainage to meeting the

targeted levels of service upon completion of infrastructure upgrades. The targeted levels of service, as previously adopted by City Council, are the 100-year design storm standard for drainage systems (surface flooding in the right of way, storm and combined sewers), and the May 12, 2000 design storm (as recorded at Oriole Yard) for sanitary drainage systems.

On November 25, 2020, Council also directed that, following the completion of all 67 Basement Flooding studies, and once all qualifying projects under \$68,000 per benefitting property have been scheduled for implementation, Basement Flooding Projects will be sequenced based on projects achieving the greatest impact. The full staff report can be found at: [Council Report 2020.IE17.5](#)

Projects that meet the \$68,000 cost per benefitting property threshold at the completion of the study stage are eligible to proceed to preliminary design. The preliminary design stage ensures the physical constructability of projects and refines project cost estimates, which may result in scope changes and potential cost increases. Projects still meeting the \$68,000 cost per benefitting property threshold after the preliminary design stage proceed to detailed design and construction. Only projects entering the detailed design stage should be communicated to the public as projects proceeding to construction.

Projects that exceed the \$68,000 cost per benefitting property threshold at the study stage, or at the completion of the preliminary design stage, are added to the deferred projects list. These projects will be prioritized for design and construction in the future based on achieving the greatest impact. Projects may also be sequenced for detailed design and construction as the replacement of the existing drainage systems warrants replacement due to poor structural condition.

Now that all 67 Basement Flooding studies have been completed, Toronto Water has a comprehensive picture of the entire program. In 2025, a complete review of the program will be conducted and the cost and schedule to design and construct all identified solutions will be summarized. Based on cost information provided by completed BFPP studies, it is estimated that the program has identified over \$18 billion in improvement projects across the City.

The attached ward profiles in Schedule A provide information on the implementation status of projects in each ward.

External Funding of the Basement Flooding Protection Program

Toronto Water will continue to explore external funding opportunities for Basement Flooding Projects as they become available. Current efforts include applications made under the Federal government's Disaster Mitigation and Adaptation Fund (DMAF).

Two major projects that have already received DMAF funding approval are the [Mid-Town Toronto Storm Sewer Relief](#) Project and the [Fairbank Silverthorn Storm Sewer](#) Project.

1. **The Mid-Town Toronto Storm Sewer Relief project** (Project# 17-15) has completed the detailed design phase with construction scheduled to start in 2026 pending the acquisition of an easement needed from the Toronto District School Board to place infrastructure in Memorial Park (Chaplin Avenue).
2. **The Fairbank Silverthorn Storm Sewer project** (Project# 3-03) is being completed in two phases. Construction for Phase 1 was initiated in October 2021 and will be substantially completed in 2025. Phase 2 will initiate construction in 2025 and the projected completion time is targeted for early 2028.

A third major BFPP project, known as Project 45-48 has been approved for federal funding as part of a broader DMAF application for flood mitigation work in the Rockcliffe area. Project 45-48 initiated preliminary design in 2024, and when completed, will be subject to the \$68,000 cost per benefitting property threshold to determine if it will proceed to design and implementation. If proceeding to construction, the construction works are forecast to start in 2029.

Basement Flooding Protection Subsidy Program

The City's Basement Flooding Protection Subsidy Program (BFPSP) offers property owners of single-family, duplex, triplex and fourplex residential homes financial assistance of up to \$3,400 per property to install flood protection devices, including a backwater valve, sump pump, and pipe severance and capping of the home's storm sewer or external weeping tile. Properties are eligible for one-time subsidies for each flood protection device, not per incident of flooding.

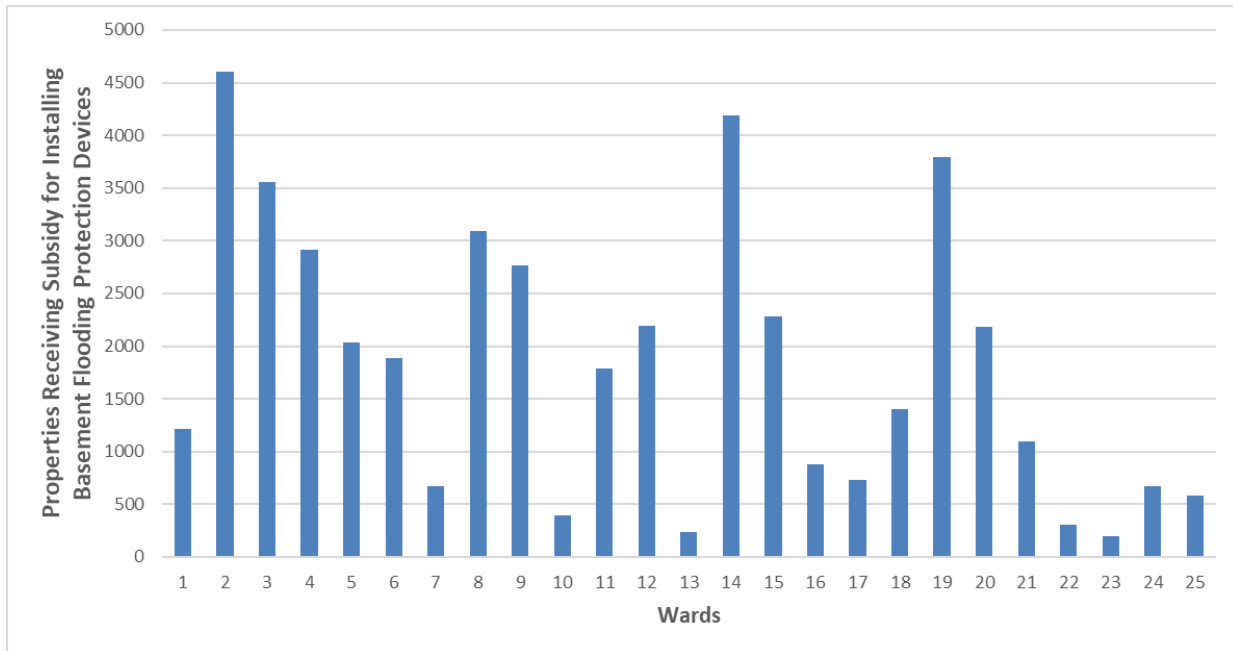
Initially created for homeowners in response to the May 12, 2000 storm event, and was initially known as the "Voluntary Private Home Isolation from Public Sewer System Program", the BFPSP was expanded City-wide in 2006 after subsequent storms. City Council, at its meeting in July 2006 adopted a report to expand the program City-wide and requested the General Manager of Toronto Water to incorporate funding to support the Program in its 2007 Capital Budget submission. The Council decision can be viewed at:

<http://www.toronto.ca/legdocs/2006/agendas/council/cc060725/pof6rpt/cl041.pdf>

At its meeting on December 13, 14 and 15, 2023, City Council adopted a recommendation from the General Manager, Toronto Water to include registered property owners of existing residential fourplexes in the Basement Flooding Protection Subsidy Program eligibility criteria, subject to meeting the other program eligibility criteria. This is aligned with the adoption of an Official Plan Amendment and Zoning By-Law amendment to permit residential multiplexes, up to fourplexes, in all areas designated as Neighbourhoods in Toronto's Official Plan.

Since the BFPSP was expanded City-wide in 2006, over 48,000 homes have installed flood protection devices. This has resulted in approximately \$80 million in total subsidy payments issued to property owners as of October, 2024. The number of subsidy applications approved by the City varies considerably from ward to ward as shown in **Figure 2**.

Figure 2 – Number of Properties Receiving a Subsidy for Installation Flood Protection Devices by Ward (up to October 2024)



No-Fault Grant for Basement Flooding Damages in the Rockcliffe Special Policy Area

On July 19, 2022, Council authorized the implementation of a recurring no-fault grant program for basement flooding damages. The subsidy provides \$7,500 to eligible properties within the Rockcliffe Special Policy Area and the hydraulically connected sewer catchment. This program is applicable to properties where beneficial works have been identified by a completed BFPP EA Study but the work is not yet commissioned.

The Council decisions can be viewed at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2022.GL32.1>

Toronto Water, the Insurance and Risk Management Division and the City’s Third-Party Insurance Adjustor established program eligibility criteria and developed business processes, manuals, procedures, and communications materials. The program’s official launch will be marked by the release of its dedicated webpage, which is scheduled to-go-live before the end of 2024.

Response to 2024 Storm Events

In response to recent severe storm events in July and August 2024 with rainfall intensities exceeding that of a 100-year return period in numerous areas, City Council directed staff to review and report back on City stormwater mitigation and adaptation programs for private property, opportunities to reduce stormwater runoff on non-residential properties, as well as additional resources that would be required to meaningfully reduce basement flooding across Toronto.

The City Council decision can be viewed at:

[2024.MM20.24 - Reducing Runoff and Mitigating Flooding.](#)

Subsequently, as directed by City Council at its meeting in July 2024, Toronto Water with the Environment and Climate Division, and the Office of the Chief Financial Officer and Treasurer reviewed and consulted the public about City stormwater management incentive programs for private property that can help reduce stormwater runoff and basement flooding risks. City staff plan to report back to Executive Committee on the review findings and consultation outcomes in January 2025. The report back will also include information on meaningful ways to reduce basement flooding risks through the ongoing implementation of recommended projects from completed BFPP studies.

Key Points – Basement Flooding Protection Program:

- The cost to construct BFPP solutions has increased over time due to higher market rates. These cost increases impact the number of BFPP projects that can be delivered in the 5-year capital plan, and result in challenges forecasting project construction starts. Details provided in Attachment 2.
- With all BFPP studies now completed, a review of proposed solutions will be undertaken to summarize the costs and schedules to design and construct all identified solutions. An updated project sequence will be developed.
- In the case of the extreme events of summer 2024, system capacities, even when upgraded, have limits that will not accommodate very extreme events.
- Flooding on private property can result from localized, non-infrastructure related causes, and not all future flooding can be mitigated by infrastructure improvements to public sewer and drainage systems. Property owners may need to address risks such as:
 - private plumbing (such as improper connection or disconnection from backwater valves, foundation drains, or downspouts, cross-connections to sewer infrastructure and other issues)
 - sewer lateral blockages
 - private property grading
 - reverse slope driveways
 - exterior access/stairways to lower levels of a home, and
 - properties constructed in regulatory floodplains are at risk of riverine flooding.

Key Points – Ward Profile Summaries (Attachment 1):

Progress in the BFPP varies considerably from ward to ward. Attachment 1 to this briefing note provides a ward-by-ward summary and highlights the accomplishments achieved to date. Specifically, the progress regarding studies, construction of infrastructure upgrades, and participation in the subsidy program is outlined.

A substantive acceleration of study efforts has occurred, with the goal of increasing and accelerating the delivery of drainage system upgrades in the City. These summaries highlight that, while significant progress has been made, many projects are still required to achieve the level of service needed to reduce basement flooding risks across the entire City.

The summary for each City ward includes:

- A map showing the limits of each ward, the private properties that have installed flood protection devices, and the boundaries for the BFPP study areas.
- A table listing the studies within each ward that have been completed.
- A pie chart illustrating the status of the infrastructure improvement works that were recommended through completed studies. The chart is subdivided into five categories: 'Constructed', 'Under Construction', 'Design Process Initiated', 'Planned for Design Initiation', and 'Deferred'. Implementation costs are approximate and vary from year to year. As projects are in various stages of design and construction, cost estimates are updated and replaced with actual costs.
- Bar charts illustrating the accomplishments of the City's BFPSP, which provides financial assistance to pay for some of the costs of installing flood protection devices. Both program participation and program expenditure summaries up to June 30, 2024 are provided.

Key Points – Project List 2025-2029 (Attachment 2):

- Table 1 (attached) contains a 5-year list of projects organized by year and by Ward. This list reflects Toronto Water's 2025 Capital Budget, and the 2026 to 2029 Capital Budget Plan.
- This briefing note is based on the best available scheduling information at the time of writing. New project changes may have arisen since the note was prepared, and the information provided is subject to change. As change requests are processed, the City's T.O. INview application will be updated, though it may not fully align with the schedules and scopes outlined in this briefing note.
- The scheduling of construction projects is subject to change, due to capital coordination issues, necessary regulatory approvals and funding availability. Schedules are updated throughout the year through submissions to Capital Delivery Coordination (CDC) Unit. These updates are regularly uploaded to the City's website.

Attachments:

Attachment 1 – BFPP Program Status Ward Profile Summaries

Attachment 2 – BFPP Program Status Update 2025 – 2029 Project List

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