

# City of Mississauga Corporate Report



<p>Date: September 6, 2024</p> <p>To: Chair and Members of General Committee</p>	<p>Originator's files:</p>
<p>From: Sam Rogers, MBA, Acting Commissioner of Transportation and Works</p>	<p>Meeting date: September 18, 2024</p>

## Subject

**July and August 2024 Extreme Rainfall Events Update**

## Recommendation

That the action plan detailed in the report entitled "July and August 2024 Extreme Rainfall Events Update" dated September 6, 2024 from the Commissioner of Transportation & Works be approved.

## Executive Summary

- On July 16, 2024 and August 17 and 18, 2024, extreme rainfall events occurred over the Greater Toronto Area including a large area of Mississauga, causing flooding related issues in the City.
- City of Mississauga, Region of Peel, Toronto and Region Conservation Authority and Credit Valley Conservation staff are working in partnership to assess and respond to water related issues in various neighbourhoods of the City as a result of the July and August extreme rainfall events and will continue to collaborate and look for new opportunities to help protect residents and businesses from flooding.
- In addition to the City's existing 10-year Stormwater Capital Plan, an Action Plan has been prepared to further address immediate, short-term, mid-term and long-term actions to mitigate flood related impacts.
- An initial summary of grants and subsidies that are available in neighbouring municipalities has been provided and staff will report back to Council on recommendations for a financial assistance program and a basement flooding subsidy program.
- Staff will accelerate the design and construction of the Dixie-Dundas Flood Mitigation Project in collaboration with the Region of Peel, Toronto and Region Conservation Authority and the Dundas Bus Rapid Transit project team.
- The City, in partnership with the Region of Peel and local conservation authorities, will hold a public information session which will include details related to the July and August

extreme rainfall events along with information to assist residents and businesses prepare for future severe weather events.

## Background

On July 16, 2024, an extreme rainfall event impacted the Greater Toronto Area, causing localized flooding. The total rainfall amount was highly variable across the City of Mississauga where 106 mm of rainfall fell between 8:00 a.m. and 12:00 p.m. on this day, with a two-day total from July 15 to 16, 2024 being approximately 133 mm. However, some areas received as low as 7.6 mm. This event exceeded the 100-year design storm in areas of the City; an event that has a one percent probability of occurring in any given year.

On July 31, 2024, Council Resolution 0148-2024 directed staff to report back in September based on the findings related to the July 16, 2024 storm event and provide commentary on immediate, short-term, mid-term and long-term action the City should consider. The resolution also included other staff directions related to flood mitigation, financial support from higher levels of government and public education (Appendix 1).

On August 17 and 18, 2024, the City was again impacted by intense rainfall causing localized flooding and related damages. Similar to the July 16, 2024 event, the rainfall amount was highly variable where between 6.2 mm and 172 mm of rain fell across the City. On August 17, 2024, Pearson Airport recorded 128 mm of rainfall, making it the rainiest day ever recorded; with the July 8, 2013 storm being the second rainiest. This event again exceeded the 100-year design storm in areas of the City.

The July and August storms caused flooding related incidents and associated damage to private properties and municipal infrastructure including road closures, watercourse erosion and trail damage. Impacted areas included neighbourhoods in Malton, Applewood, Cooksville and Lisgar, as well as the Dixie Road and Dundas Street community. Based on available information compiled for the July 16, 2024 and August 17 and 18, 2024 storms, the City estimated the overall cost of downtime in services/programs and damage to municipal infrastructure to be over \$3 million and \$0.9 million respectively.

## Comments

### Incident Response

In the lead up, and during the severe weather events, the City of Mississauga adhered to, and activated its Severe Weather Plan. Staff from the City's Office of Emergency Management (OEM) monitored weather and watershed alerts being issued by partners such as Environment Canada, Credit Valley Conservation (CVC), and the Toronto & Region Conservation Authority (TRCA). These alerts, and the additional information being provided by these agencies, were escalated to members of the Incident Management Team (IMT), and other supporting City Divisions. Once it became apparent that rainfall amounts would be significant, the City's IMT

was activated to coordinate City response efforts and to provide cross-departmental support where needed.

In addition to Environment Canada and local conservation authorities, the IMT liaised with regional partners including neighbouring municipalities, Trillium Health Partners, William Osler Health System, Alectra Utilities, Region of Peel, and Emergency Management Ontario. This level of communication ensured that up-to-date information was shared among all agencies and partners involved in the response. A synopsis of weather warnings and actions undertaken by the City is provided in Appendix 2.

The City's 3-1-1 Call Centre had over 3,700 interactions between July 15 and 16, 2024. Through various channels, the City received approximately 1,000 reports of residential property flooding related to the July 16, 2024 severe rainfall event. For the August 17 and 18, 2024 events, the City received approximately 125 calls, with the 3-1-1 Call Centre receiving approximately 105 additional interactions in the week following the event. It should be noted that the actual number of homes and businesses affected is anticipated to be much higher and, as such, the above quoted numbers should be viewed as estimates only. The general locations of interactions resulting from the July and August storm events are provided in Appendix 3. These maps are intended to only provide a geographical representation of interactions and are not comprehensive.

Many other City teams were mobilized during the July and August extreme rainfall events. They included WOM, Mississauga Fire and Emergency Services (MFES), Parks, Facilities & Property Management and Stormwater. An overview of each team's engagement is briefly highlighted in Appendix 2.

### **Action Plan**

The introduction of the Stormwater Charge in 2016 reinforced the City's commitment to continually invest in stormwater infrastructure improvements. Since 2016, the City has invested \$231 million in stormwater infrastructure and the 10-year capital plan includes an additional \$308 million. Many of the recently constructed projects, such as Lake Saigon and Cooksville Creek underground storage facilities, mitigated the impacts of both storm events. Future initiatives, such as the Dixie-Dundas Flood Mitigation Project will continue to add resilience to the City's stormwater system. However, as a result of the flooding incidents, the existing stormwater capital, operations and maintenance programs were reviewed over the immediate, short-, medium- and long-term in order to identify other potential actions that could be taken in response to these events. This review was supported by post-storm inspections, input received from residents and businesses through service requests, e-mail inquires, communication through Councillors' offices and community meetings.

It should be noted that while flooding affected many homeowners and businesses throughout the City as a result of the July and August extreme rainfall events, several neighbourhoods were impacted particularly hard, including Malton, Lisgar, Applewood and the Dixie-Dundas area.

Accordingly, some of the actions listed below are specifically identified to address these communities. However, many other communities across the City were impacted to varying degrees; including, but not limited to, those in the Cooksville Creek, Mullet Creek (Streetsville) and Sawmill Creek watersheds. Investigations and maintenance activities are ongoing and these areas will continue to be assessed for potential improvements and prioritized accordingly in the Stormwater 10-year Capital Plan.

### **Immediate Action**

In response to both storm events, the following immediate actions are in progress:

- Repairs to damaged stormwater infrastructure and the removal of debris which is impacting the function of the stormwater infrastructure.
- Coordination with TRCA for expansion of the Emergency Management Plan to include the Applewood area, in regard to the Little Etobicoke Creek spill.
- Capacity assessment of the trunk storm sewer system in the vicinity of Harvest Drive in the Applewood area.
- Accelerate the design and construction of the Dixie-Dundas Flood Mitigation Project
- Advance the planned design of storm sewer upgrades for Malton Village to 2024, with a focus on, but not necessarily exclusive to, Hull Street and Cattrick Street.
- Review flooding concerns in Swanhurst Blvd./Ellesboro Dr./Suburban Dr./Joymar Dr. communities in Streetsville for potential causes and mitigation opportunities.
- Hold a public information session, in partnership with the Region of Peel and local conservation authorities, which will include information related to the July and August extreme weather events along with information to assist residents and businesses prepare for future severe weather events.

### **Short Term Action**

A number of capital projects that support flood relief are already underway or planned to be initiated in the short term (1 – 3 years), including:

- Malton Drainage Improvements – Etude Dr. to Justine Dr. (in-progress)
- Dixie-Dundas Flood Mitigation Project (in-progress)
- Lisgar Pumping Station – Smoke Tree Road (in-progress)
- Cooksville Flood Storage Facility - McKenzie Park (in-progress)
- Lisgar Pumping Station - Doug Leavens Blvd. (construction in 2024)
- Cooksville Creek Improvement, Flood Protection and Replacement of King & Paisley Bridge (in-progress)
- Dredging Osprey Marsh Stormwater Management Pond
- Streetsville and City Centre Overland Flow Assessment
- Cooksville Flood Storage Facility - Huron Heights
- Cooksville Flood Storage Facility - Greyshale Park
- Port Credit Storm Drainage Improvements

In addition, the following short-term actions are recommended:

- Staff will report back to Council with details and recommendations on a basement flooding subsidy program and a financial assistance program (preliminary information is provided further in this report and in Appendix 4).
- The City in partnership with local conservation authorities will look for opportunities to improve the weather alert system where warnings can reach a wider audience (i.e. through text messages), including opportunities to enhance weather forecasting, flood detection and flood response.
- Accelerate the inspection of the foundation drain collector trunk sewer system in the Lisgar area and undertake a feasibility analysis on constructing a stormwater management facility north of the Lisgar area.
- Undertake a review of feasible mitigation opportunities to lessen the impact of riverine flooding of Little Etobicoke Creek, upstream of the Dixie-Dundas neighbourhood
- Enhance the information collection process for flood events in order to assist with post-storm analysis.
- Re-assess the condition of storm sewers for rehabilitation, and include a review of the frequency of stormwater infrastructure inspections for potential gaps and level of service enhancements.

### **Medium Term Action**

A number of capital projects that support flood relief will continue or be initiated in the medium term (3 – 5 years), including:

- Dixie-Dundas Flood Mitigation Project (continued)
- Little Etobicoke Creek Neighbourhood Drainage Improvements
- Storm Sewers Improvements - Applewood Watershed
- Malton Drainage Improvements - Various Locations (continued)

In addition, the following medium-term actions are recommended:

- To support the performance of the stormwater system and limit impacts to residents, staff will undertake a detailed assessment of overland flow routes in the City, prioritize critical areas and place an added focus during the Stormwater capital planning process to retrofit identified locations.
- Staff will review its storm drainage related development standards, such as private storm service connections, to look for opportunities to add protection and limit potential back-up into foundation drains (e.g. basement floor is to be 1m above storm sewer obvert standard) in residential homes, including whether these types of requirements can be mandatory and not just best practices.

### **Long Term Action**

A number of capital projects that support flood relief will continue or be initiated in the long term (5+ years), including:

- Dixie-Dundas Flood Mitigation Project (continued)
- Cooksville Flood Storage Facility – Heritage Hills Park
- Culvert Capacity Analysis - Various Locations

### **Dixie-Dundas Flood Mitigation Project**

The flooding in the Dixie-Dundas and Applewood neighbourhoods has heightened interest in the City's ongoing Dixie-Dundas Flood Mitigation Project. As such, a brief commentary on the need and timing of this project is provided below.

The primary cause of flooding in the Dixie-Dundas and Applewood neighbourhoods is associated with the Little Etobicoke Creek (LEC) spill upstream of Dixie Road near Queen Frederica Drive, where flood water flows southerly through over 1,000 commercial, industrial, and residential properties. The City intends to remove this spill to protect flood-vulnerable residences and businesses and is currently undertaking the Dixie-Dundas Flood Mitigation Project.

This expansive and highly complicated project includes floodplain widening, regrading and erosion control works along LEC, replacement of the Dixie Road bridge at LEC, sanitary sewer relocations at Dixie Road and Jarrow Avenue along with watermain works (to be undertaken by the Region of Peel) and replacement of the Dundas Street bridge at LEC and associated sanitary sewer relocation (to be undertaken as a part of the Dundas BRT project). The acquisition of private lands is also a necessary component of the works. The Municipal Class Environmental Assessment has been completed and preliminary design is currently underway.

The project is planned over a number of years given its complexity and is fully funded in the proposed 2025 to 2034 Capital Plan. However, staff recognize the critical importance of this flood mitigation project and are actively working to accelerate its design and construction.

### **Municipal Financial Relief Programs and Basement Flooding Subsidy Programs**

Further to the discussion at Council on July 31, 2024, staff have received a number of inquiries about the City's existing sump pump subsidy program, as well as requests for additional financial support. The following provides a preliminary overview of the issue.

Under Section 107 of the Municipal Act, 2001, municipalities may provide grants to persons for any purposes that the Council considers to be in the interests of the municipality. Section 106 of the Municipal Act, 2001; however, prevents municipalities from providing grants to manufacturing businesses, industrial or commercial enterprises.

Staff conducted a preliminary benchmarking of municipalities offering compassionate or ex-gratia financial assistance for flood related damages as well as of municipalities offering

grants/subsidies to assist homeowners with reducing the risk of basement flooding. A summary of the benchmarking is provided in Appendix 4.

There is no standard financial assistance program and no consistency on subsidy or grant programs to assist homeowners and tenants of residential properties who have suffered losses related to flooding. In addition, the eligibility criteria for each program, grant or subsidy varies among the municipalities.

There are several factors that need to be considered for any grant or subsidy program, including:

- Scale of the program - City-wide or specific to certain areas
- Eligible time frame - past and future rainfall events
- The grant/subsidy amount and criteria for eligibility
- The budget for any program(s)
- Cost to administer the program(s), including staff resource requirements

As a result, and as noted previously in the report, one of the proposed short-term actions is for staff to report back to Council with details and recommendations on a financial relief program and/or basement flooding subsidy program.

#### **Additional Information Related to Council Resolution 0148-2024**

In response to the discussion that took place at Council, Appendix 5 provides additional information related to public education and community engagement and information on flood insurance for tenants.

#### **Collaboration Efforts with Other Agencies**

The City continues to work together with the Region of Peel, TRCA, CVC, Conservation Halton (CH) and other stakeholders on all shared interests including flood mitigation and protection initiatives.

Following the July 16, 2024 storm, staff from the City, Region of Peel, CVC, CH and TRCA remained engaged in our commitment to work collaboratively with respect to investigations and studies that are being or will be undertaken in the storm's aftermath. A debrief session with TRCA, CH, CVC and Region of Peel was held on August 26, 2024 to cover a host of topics including an overview of the July and August extreme rainfall events, impacts on watersheds, identify opportunities to improve flood forecasting and monitoring, reduce flood risks as well as coordination and format of a public information session for residents and businesses. City staff received valuable input from these agencies and many recommendations have been incorporated into the Action Plan section above.

Following the July and August extreme rainfall events, City staff also debriefed with staff from neighbouring municipalities who were also impacted by the recent storm events, including the Cities of Toronto, Burlington, Markham and Halton Region. These debrief sessions allowed staff

to identify common responses and recovery actions, successes, and challenges among municipalities to help collectively inform areas of improvement in response to future severe weather events.

### **Public Information Session**

Subsequent to the July 31, 2024 motion where staff were directed to hold a City-wide public information session, several Wards have held Ward specific meetings related to the extreme weather events. These meetings, which included staff from the City, Region of Peel and local conservation authorities, were well attended and provided valuable feedback on Ward related issues. City, Region of Peel and local conservation authorities staff will continue to support these Ward specific engagements.

In addition, a City-wide information meeting will be conducted and will include information tables that will allow the public to access information that they may be most interested in. For example, one table may have a representative from the Insurance Bureau of Canada who can share their insurance knowledge with the residents while another booth may be staffed by OEM to assist with emergency preparedness.

### **Higher Governmental Financial Support**

The City has been engaged with the Ministry of Municipal Affairs and Housing (MMAH), who is responsible for the Disaster Recovery Assistance for Ontarians (DRAO) program and the Municipal Disaster Recovery Assistance (MDRA) program. DRAO is a program that can help residents of Ontario recover costs after a natural disaster. The Province of Ontario may activate DRAO for damage to private property if there's a sudden unexpected natural event that causes costly and widespread damage in an area. DRAO is not intended to replace insurance coverage. MDRA helps municipalities recover from extraordinary costs after a natural disaster based on evidence that the event meets the eligibility criteria. Eligible municipal costs for MDRA must be at least equal to three percent of a municipality's own purpose taxation levy. The City of Mississauga's 2024 Net Tax Levy was \$682 million. Three percent of this amount would be \$20.5 million. Given this amount in comparison to the costs from the July and August extreme rainfall events, it is unlikely that the City will be eligible for MDRA.

Based on initial flood impact data provided to MMAH, the Ministry selected the 16 Mile Creek (Lisgar, Churchill Meadows), Mimico Creek (Malton), and Mullet Creek (Central Erin Mills) areas for assessment. A Provincial Disaster Assessment Team (PDAT) was deployed in Mississauga on August 27, 2024, accompanied by the OEM team, and conducted short interviews/assessments with a sample of residents who were impacted by the July 16, 2024 extreme rainfall event. Through these assessments, MMAH will determine whether criteria had been met to activate the DRAO program.

At the writing of this report, no decision has been made as to whether MMAH intends to activate the DRAO program in Mississauga. City staff have been advised that assessments of



municipalities impacted by the July 16, 2024 extreme rainfall event, including Burlington, Brampton and Toronto, will be completed and presented to the Minister for a decision.

### **Housing-Enabling Water Systems Fund (HEWSF)**

In this year's budget, the Ontario government announced more than \$1.8 billion in housing-enabling infrastructure funding. This funding includes \$1 billion for the new Municipal Housing Infrastructure Program (MHIP) and \$825 million for the Housing-Enabling Water Systems Fund (HEWSF).

In response to the significant demand for investments in water and wastewater infrastructure to enable the construction of more homes, the province is transferring an additional \$275 million from MHIP to the HEWSF to meet this demand.

The government is also allocating an additional \$250 million for a second intake of applications through the HEWSF, bringing the province's total investment in the fund to \$1.2 billion.

Staff reviewed the HEWSF opportunity prior to the first application intake deadline in April 2024. No suitable project was identified that would satisfy the eligibility requirements for the funding. The City's stormwater projects in the current Capital Plan primarily relate to 'State of Good Repair' projects and did not meet the criteria for being related to enabling housing. The projects that could be proposed were either on the exclusion list or could not be completed by the March 31, 2027 project completion deadline, in accordance with the funding guidelines. However, as part of the first round of funding, the province is providing the Region with \$35 million to support the expansion of the G.E. Booth Water Resource Recovery Facility.

Staff will review eligibility for the second intake of applications with the intention to make a submission by the November 1, 2024 deadline. Staff will update Council once the submission has been developed.

### **Disaster Mitigation and Adaptation Fund (DMAF)**

In 2018, the Government of Canada launched the Disaster Mitigation and Adaptation Fund (DMAF) to invest in structural and natural infrastructure projects to increase the resilience of communities that are impacted by natural disasters triggered by climate change. Through DMAF, the federal government covers up to a maximum of 40 per cent of the cost of a municipal project.

The City applied to DMAF for the first two rounds of funding – once in 2018/2019 (for a bundle of Cooksville Creek watershed projects) and again in 2021 (including the Dixie-Dundas Flood Mitigation Project). In both instances, the applications were unsuccessful due to projects not aligning with DMAF parameters or as a result of insufficient data. The City did not apply to round three in 2023 given that there was no substantial change.

Now that the Dixie-Dundas Flood Mitigation environmental assessment has been completed and the project is currently in preliminary design, this project would now be considered a suitable candidate for DMAF. Staff will be meeting with the DMAF program leads/director at Infrastructure Canada to review the opportunity to revisit the City's application.

### **Climate Change Action Plan Adaptation Measures**

Through the City's Climate Change Action Plan, the City continues to advance and accelerate actions that reduce greenhouse gas emissions in an effort to stave off the worst effects of climate change, while at the same time committing to making our community more resilient to changes in climate and extreme events.

Within the context of asset management, climate change is a threat to sustainable service delivery as it amplifies the risk of asset failure, reduces asset service life, and can increase the cost of managing risk and delivering levels of service. The City's 2024 Corporate Asset Management Plan integrates climate change within the context of other asset risks, costs, and service objectives with the intention of developing an integrated and cost-effective set of actions to maintain and enhance levels of service as a result of changing climate conditions. As staff continue to quantify the effects of climate change and determine the costs associated with managing those climate change hazards/risks, they will integrate the outcomes into their asset management programs and levels of service framework going forward.

Mississauga's green infrastructure also plays a critical role in making the City more resilient, safe, equitable and livable. The supply of parks, woodlands and natural areas, how they are designed, what features are included (such as low-impact developments) and the City's tree canopy cover and how invasive species are managed will directly impact the City's ability to withstand more intense climate-related events. These efforts can reduce the heat island effect to keep residents cool and reduce electricity usage and they can also help manage stormwater to minimize flooding and erosion.

## **Financial Impact**

Based on available information compiled for the July 16, 2024 and August 17 and 18, 2024 extreme rainfall events, the City estimated the overall cost of downtime in services/programs and damage to municipal infrastructure to be over \$3 million and \$0.9 million respectively.

Financial impacts related to the implementation of a residential financial grants and/or a flood mitigation subsidy are not known at this time. Staff will report back to Council with recommendations under a separate report.

## **Conclusion**

The City of Mississauga, in partnership with the Region of Peel and local conservation authorities, will continue with investigative work to fully understand the flooding related issues associated with the July and August extreme rainfall events, and identify actions to address

flooding risks. Inspections and critical maintenance and repair works are well underway and staff will continue to program, initiate and expedite studies and capital projects where possible.

The recommended action plan outlined in this report highlights the City's continued efforts and commitment to help mitigate the impacts of extreme weather events.

## Attachments

- Appendix 1: July 31, 2024 Council Motion
- Appendix 2: Weather Warnings and City Responses
- Appendix 3: Maps – Rainfall Related Interactions Documented by the City of Mississauga (July 16, 2024 and August 17 and 18, 2024)
- Appendix 4: Compassionate Grants and Subsidy Programs Offered by Other Municipalities
- Appendix 5: Additional Information in Response to Motion and Discussion



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Sam Rogers, MBA, Acting Commissioner of Transportation and Works

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