

# City of Mississauga Corporate Report



Date: May 24, 2022

To: Chair and Members of General Committee

From: Geoff Wright, P.Eng, MBA, Commissioner of  
Transportation and Works

Originator's files:

Meeting date:  
June 15, 2022

## Subject

**January 2022 Winter Event - After Action Report**

## Recommendation

That the report from the Commissioner of Transportation and Works dated May 24, 2022, entitled "January 2022 Winter Event – After Action Report" be received.

## Executive Summary

- Staff had previously committed to providing Council with information on the cost of the following enhanced winter maintenance services: winter maintenance of secondary (residential) sidewalks, clearing of residential windrows and enhanced winter maintenance of cycling infrastructure. This report provides an update to the General Committee on the status of this commitment.
- The January 17, 2022 winter event gave us 45 cm (18 inches) of snow in an 18-hour period, the most single-day accumulation received since the 1940s. Major challenges continue to be parked cars impeding operations, and a lack of contracted replacement operators.
- Staff have made modifications to winter operations by revising route maps and equipment sharing between yards, when needed, to assist in providing a more uniform operation.
- The approximate operational cost of this winter event, including required snow removal, was \$1.8M.

## Background

At its April 27, 2022 meeting, General Committee gave verbal direction to Geoff Wright, Commissioner of Transportation and Works, to provide an "After Action Report" based on the winter event of January 2022.

The purpose of this report is to:

- Summarize the events of the January 17, 2022 winter event for the General Committee;
- Provide an update on steps already taken from this event and the plan to improve operations for the 2022/2023 winter season; and,
- Provide information on the estimated cost of the winter maintenance event from January 17, 2022.

## Comments

### Conditions and Statistics from the January 17, 2022 Winter Event:

The winter event that began on January 16 saw the City of Mississauga receive a total of 45cm (18 inches) of snow. This was the most snow that Mississauga has received in a single day since the 1940s.

Through the City's Winter Maintenance Contract, approximately 500 pieces of contractor and City-owned equipment are available for use during winter operations.

On Sunday, January 16, the forecast indicated a **Snowfall Warning** with 15 to 25cm (six to 10 inches) expected, with 30cm (12 inches) possible locally. With this warning, Staff declared a **Significant Weather Event** at 10:00 pm on January 16, 2022. Crews began treating priority routes at 11:00 pm on January 16, 2022.

As of 07:00 am January 17, 16cm (6 inches) of snow had fallen. Environment Canada issued a **Winter Storm Warning** as of 06:46 am in addition to the **Snowfall Warning**. Forecasts at the time predicted 25 to 40cm (10 to 16 inches) of snowfall. Crews continued treating priority routes and started priority sidewalk and bus stop routes by 06:00 am January 17. Environment Canada also issued a **Blizzard Warning** for a short period in the morning.

On January 17, 40cm (16 inches) of snow had fallen as of noon. The **Winter Storm Warning** continued with accumulations now 40 to 60 cm (16 to 24 inches). Crews continued to work on priority routes, priority sidewalks, and bus stops.

As of 5:00 pm January 17, 45 cm (18 inches) of snow had fallen, and snowfall had ceased. Environment Canada cancelled the **Winter Storm Warning**, and as such, our **Significant Weather Event** was no longer in effect. Crews continued to work on priority routes, priority sidewalks, and bus stops. Staff also deployed the front-end loaders to attempt to open up local roadways with one pass.

As of 08:00 am on January 18, crews continued to work to clear all of our priority and secondary routes.

As of 09:00 am on January 19, staff had completed most priority routes and performed some touch-up work. Priority sidewalks and bus stop crews continued to work through their routes. Clarkson and Malton had completed their secondary routes. Mavis was approximately 85% complete, and Meadowvale was about 80% complete. Staff redeployed Loaders and equipment from Clarkson and Malton to Mavis and Meadowvale districts to assist with plowing operations. It was reported that over 70 MiWay buses were stuck in the snow, which impeded clearing operations. WOM staff and equipment assisted in freeing the buses.

As of 05:00 am January 20, all routes had been completed. Crews were still providing further snow clearing on some of the priority sidewalk routes and bus stops. Snow removal crews were arranged to remove snow from bridge decks and BIA areas starting at 7:00 pm.

The City always strives to meet Minimum Maintenance Standards O.Reg. 239/02 (MMS) in every winter event, including after the declaration of a Significant Weather Event. In situations of significant snow accumulation the MMS standards may not be possible to meet, however, the City complies with the Municipal Act, 2001 by taking reasonable steps to prevent the roads from being in a state of non-repair, in keeping with the character and location of the highway, using Council-approved prioritization of routes and levels of service as shown in the table below. Service levels based on the accumulation of 45 cm indicate that priority routes, priority sidewalks and bus stops may be completed in **more** than 24 hours. Residential routes may be completed in **more** than 36 hours. Staff set levels of service for 5:00 pm January 18 and 5:00 am January 19, respectively.

Type of road	Less than 5 cm of snow	5 to 15 cm of snow	15 to 30 cm of snow	More than 30 cm of snow or back-to-back storms
Major and priority roads, priority sidewalks, bus stops, pedestrian crossings, specific trails	Salted within 12 hours after the end of a snow fall	Plowed and salted within 12 hours after the end of a snow fall	Plowed and salted within 24 hours after the end of a snow fall	Plowed and salted more than 24 hours after the end of a snowfall
Residential and secondary roads	Salted within 24 hours after the end of a snow fall	Plowed and salted within 24 hours after the end of a snow fall	Plowed and salted within 36 hours after the end of a snow fall	Plowed and salted more than 36 hours after the end of a snowfall

### Challenges During the Winter Event

In addition to the significant accumulation of 45 cm (18 inches) of snow received within 18 hours, the WOM team also faced challenges that hindered operations. The most critical factors that became an issue for operations were parked cars and contractor replacement drivers.

With every winter event, parked cars are a challenge; however, the challenges were compounded with this event. Many streets had to be redone at another time, as equipment could not perform their plowing operation during the initial pass. This prolonged the event much longer than normal, as crews had to attend to roadways multiple times to clear the road properly.

During this event, some issues were brought forward relating to the accuracy of our winter plow APP. There were minor discrepancies with what was shown on the APP and what occurred in the field. Staff worked with our vendor to fully investigate the issue, completed our own research on best practice and resolved issues as we were able. The ability to report discrepancies was added to the APP should residents have any concerns.

It became evident through this event that many of our contractors could not provide the required replacement drivers, as indicated in our 2021 through 2029 Winter Maintenance contract. This meant that equipment sat idle for up to eight hours before the driver could return to work after completing the required eight-hour break under the Highway Traffic Act. This became a factor throughout this event and extended our operations by at least 24 hours. Any contractors that did not comply with the terms and conditions of the Winter Maintenance contract were subject to liquidated damages. Covid-19 likely amplified this issue; however, the contractors did not adequately communicate this proactively.

### Lessons Learned and Changes Implemented

Our team debriefs after almost every winter event. This was the situation for the January 17 event, and we continue to learn and modify our operations to make them more efficient.

As a result of the lack of replacement operators provided by many of the winter maintenance contractors, staff took a more proactive approach to communicating the need for replacement operators for the future winter events of the 2021/2022 winter season. This included clear communication, performance management and the application of liquidated damages where appropriate. The challenges faced by the industry in terms of staffing levels are widely acknowledged; however, we continue to work with the contractor teams to ensure that these challenges are mitigated.

Staff are currently reviewing routes and maps, ensuring they are of the appropriate length and that all equipment is utilized to perform the operations maximally. One tactic used during this event was to ensure that our resources were shared to assist all yards. Previously, equipment

would only work within the district that it had been assigned to and would be signed out once the designated route was completed. During this major event, equipment was kept working and deployed to alternate yards to assist with completing routes as quickly as possible.

GPS and Telematics are essential in confirming that equipment has performed as expected. During this event, the GPS worked well in providing accurate information to our team. Further guidelines and procedures have been added to ensure staff can use this tool efficiently and effectively.

Staff are moving from a 4-District Model to a 2-District Model through the summer. This move will be fully implemented at the start of the 2022/2023 winter season. Works resources can be more efficiently deployed and coordinated in 2 rather than 4-Service Districts, saving travelling time and fuel and reducing the carbon footprint.

Staff will be moving to a 2-shift model for our Works Operations staff this winter, 2022/2023. This will ensure that City staff are available to deal with smaller events and enable a more proactive approach for winter events.

#### Enhanced Winter Maintenance Services:

Staff will be conducting a procurement in the fall of 2022 to provide winter maintenance on secondary (residential) sidewalks, clearing of residential windrows and enhanced winter maintenance of cycling infrastructure. This procurement will provide actual costs to provide these services and form the basis of the staff report on this matter, promised for the General Committee's consideration in 2023.

The City currently performs winter maintenance on priority sidewalks only and not secondary (residential) sidewalks. Priority sidewalks are defined as sidewalks located on major roads or bus routes or outside of hospitals, schools or long-term care homes. Approximately 1,700 kilometres of priority sidewalks are currently included in the City's winter maintenance program, and about 700 kilometres are considered secondary sidewalks.

The City does not clear residential windrows. The City offers a driveway windrow clearing program for residents 65 years and older and for persons with disabilities. Currently, there are 274 residents enrolled in the 2021/2022 program.

Lastly, enhanced winter maintenance of cycling infrastructure would include snow removal from all bike lanes in the road allowance. The existing practice is to perform winter maintenance on bike lanes in the road allowance in concert with priority roads and plow the dedicated bike lanes with the priority roads. Snow removal on bike lanes in the road allowance is performed on a minimal basis. Snow removal from bike lanes would be a more effective approach to winter maintenance of bike lanes. This could be achieved by providing equipment to clear and truck away the snow after each plowing has been completed.

### Winter Maintenance on Secondary (Residential) Roads:

During the 2021/2022 winter maintenance season, staff received a significant number of complaints, primarily from Ward 3 residents and the Applewood Hills and Heights Residents' Association, regarding the timing of winter maintenance on secondary (residential) roads.

Municipalities similar to Mississauga provide winter maintenance according to service levels that classify roads into priority roads and secondary roads. Winter maintenance is performed on priority roads first and then on secondary roads. This meets the Minimum Maintenance Standard legislation, regulation **O. Reg 239/02**, for timelines required to treat roads based on their classification. Priority routes must be treated sooner than secondary routes, and winter routes are set up accordingly.

Winter maintenance is a costly public service, and roads are addressed on a priority-based classification to be cost-effective. Resources are finite, and it is cost-prohibitive to treat all roads simultaneously with the same level of service.

In particular, the Council-approved road classification in Mississauga for winter maintenance is as follows:

- ***“Priority roads are cleared to bare pavement. Priority roads consist of major roads and collector roads and are addressed first to ensure that emergency services and the public can safely travel to hospitals, schools and access public transportation systems and work immediately after a winter event; and,***
- ***Secondary roads are cleared once priority routes have been completed and are cleared to be safe and passable; bare pavement may not be achievable.”***

Moreover, major roads are classified as such due to their primary function of moving vehicular traffic across the city. Roads with this classification often see high volumes of daily motor vehicle traffic in the many thousands and have higher speed limits. They are essential to public transit as many stops and routes are located along the right of way. Major roads are also critical for transporting emergency service vehicles (Fire, Police and Paramedics). Emergency service vehicles require the clearest, direct and timely route to the source of an incident.

Collector roads are streets that provide access to smaller residential roads and also move daily vehicular traffic volumes into the thousands. Transit Routes are also present along these streets.

Secondary Roads (residential roads) are streets with a strict function of providing access to properties. These roads see daily motor vehicle traffic into the low hundreds and have low-speed limits. Transit routes are typically not present on secondary (residential) roads.

Also, vehicles and equipment servicing priority roads cannot turn off priority roads and onto nearby secondary (residential) roads to provide service for the following reasons:

- Service Levels and Provincial Legislation dictate the timelines in which the Major and Collector roads must be treated;
- The City's priority roads are essential in maintaining the City's infrastructure for active transportation during and immediately after a winter event;
- Priority roads shoulder the most risk and danger to motorists/pedestrians/cyclists due to higher speed limits as well as higher rates of daily traffic;
- If vehicles and equipment were to turn onto every secondary street off the priorities, the City would not be able to meet the legislated timelines to treat priority roads; and,
- Not meeting these timelines would increase the risk to the City as well as to residents and commuters.

## Financial Impact

There is no budget impact at this time due to the information provided in this report.

Staff calculated the estimated operational cost for this winter event at \$1.8M. This includes the operating costs for vehicles and the snow removal costs that were performed in the days after this event was completed.

## Conclusion

Staff had previously committed to providing Council with information on the cost of enhanced winter maintenance services: winter maintenance of secondary (residential) sidewalks, clearing of residential windrows and enhanced winter maintenance of cycling infrastructure. This report provides an update to the General Committee on the status of this commitment. Further, this report includes information related to the January 2022 winter event lessons learned and modifications staff have made as a result of this event.

In addition, staff continue to initiate ongoing improvements to the delivery of the City's winter program through:

- Its relationship with the Ontario Good Roads Association/Snow School;
- Communication with neighbouring municipalities;
- Searching for best practices Province-wide; and
- Monitoring recent winter maintenance contract awards, including the City of Toronto.



Geoff Wright, P.Eng, MBA, Commissioner of Transportation and Works

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