

City of Toronto

2025 Winter Storm Response and Winter Maintenance Program Review: **Recommendations and Implementation Plan**

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City of Toronto

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Executive Summary

In February 2025, Toronto experienced one of its most intense snowstorms in recent history, with over half a metre of snow falling across the city. Despite significant efforts by City crews and contractors, members of the public reported delayed or inadequate service, especially on sidewalks and local roads. In response, City Council directed a comprehensive review of the City's winter maintenance program and its response to the February storm.

The City retained Municipal VU Consulting Inc. (MVU), an independent firm with municipal public works expertise, to conduct the review and identify what worked, what didn't, and where improvements were needed to enhance readiness for future storms. MVU's initial findings were presented to the City's Executive Committee in July 2025 in the Winter Storm Response and Winter Maintenance Program Review Report. That report identified 32 opportunities to strengthen the City's winter program, and since that time, MVU has worked with City staff to refine those 32 opportunities into 11 key recommendations, each supported by sub-recommendations, timelines, ownership, and resource estimates. These refined recommendations are presented in this report, along with supporting rationale and associated budget and resource implications.

Focus of 2025: Advancing Readiness for Major Snow Events

The City recognized early that several of the July opportunities, those related to major event planning, towing coordination, surge capacity, and snow removal, were closely interconnected and fundamentally essential to improving response performance before the coming winter. These were consolidated into a single, high-priority initiative: the development of a comprehensive Major Snow Event Response Plan (MSERP). The MSERP represents a significant evolution in how the City organizes and manages its winter response, moving from reactive operations toward a coordinated, planned, and data-informed system that aligns staff, equipment, and decision-making under one unified framework.

MVU is leading the initiative, and supporting City staff in designing, refining, and testing the MSERP so it is field-ready for the 2025/26 winter season. This has included facilitating extensive consultation exercises across many divisions, confirming resource availability, and aligning staff and contractors under the new response model. The MSERP will integrate and operationalize multiple opportunities presented in the July report, combining them into one cohesive framework that establishes how the City prepares for and manages major snow events. It is a comprehensive framework that brings together a Snow Removal Framework, a Surge Plan, and a Towing Plan, three core components that define how the City will respond, clarifying

decision-making thresholds, defining roles and responsibilities across departments and contractors, and establishing communication and escalation protocols that can be activated in real time.

Snow Removal Framework

The Snow Removal Framework defines how the City will mobilize and manage resources during large-scale snow removal operations. It evaluates multiple contract and deployment models, comparing cost, readiness, and contractor capacity to identify the most effective and scalable approach. The framework outlines operational triggers, clean-up timelines, and coordination procedures between City divisions and contractors to ensure efficient removal following major snow events.

Operating scenarios and a cost model were developed to explore the most effective balance between cost, readiness, and contractor capacity. A preferred scenario has been identified for Council consideration, combining near-term practicality with long-term scalability.

Four operational and contractual models were evaluated, ranging from fully dedicated, four-month stand-by contracts to shorter-term and hybrid options using existing City haulage resources. Estimated costs per winter season varied from \$24 million to \$130 million, depending on the level of standby readiness and response speed.

- Higher-readiness options offer the quickest clean-up but carry the highest standby costs and logistical challenges.
- Lower-cost options reduce expenditures but rely on shared resources and introduce some risk of slower response.

The recommended Scenario 3, the “Existing Model With Improvements”, builds on existing contracts to expand snow-removal responsibilities, improve coordination, and deliver immediate readiness without new procurement. It unifies plowing and removal under one contractor for consistent supervision and accountability, while allowing the City to refine hauling, performance, and data monitoring through 2029. However, the City’s ultimate goal should not be to simply adjust or extend the current contracting model, but to use this transition period to inform a complete redesign of Toronto’s winter maintenance program for the 2029/30 season. This contract approach should include a dedicated removal structure that separates functions of clearing and removal, but also closely coordinates the two to improve flexibility, and maximize resources. Each scenario is further discussed in the report.

Surge Plan

The Surge Plan establishes a structured process for rapidly scaling staffing, equipment, and contractor resources when standard winter maintenance capacity is exceeded. It defines

escalation levels, activation protocols, and cross-divisional redeployment procedures to maintain service continuity during extreme conditions. The plan also includes training and readiness testing to ensure staff and contractors can execute surge operations effectively.

Towing Plan

The Towing Plan details how the City will manage on-street parking and towing during declared snow events to enable effective plowing and removal. It defines towing activation triggers, coordination with enforcement and towing contractors, and real-time pairing of towing and snow removal crews. The plan also includes communication and signage strategies, as well as exploration of temporary parking options for residents displaced by parking bans.

MVU has worked with City staff to design, refine, and operationalize these elements, so that they are practical, field-ready, and tested before the coming season. This includes helping staff exercise the plans, confirm resource availability, and align key players under the new coordinated response model.

Other Recommendations

While the MSERP and its supporting strategies are the City's immediate focus, the City continues to advance other recommendations identified through this review. The additional recommendations include the following (by Recommendation number):

2. 311 Service Protocols – Improve intake, triage, and escalation for significant snow events.
3. Communications Improvements – Strengthen coordination and messaging for internal, public, and Council audiences.
4. Performance Monitoring – Implement tools to better track service delivery and contractor performance.
5. Current Contract Enhancements – Address near-term contract gaps for the upcoming winter.
6. Future Contract Planning – Prepare for the next procurement cycle with updated performance and response expectations.
7. Winter Parking and Compliance – Advance preventive parking strategies to reduce obstructions.
8. Sidewalk Clearing Optimization – Improve route planning, equipment, and prioritization for pedestrian routes.
9. Complex Infrastructure Maintenance – Clarify winter maintenance standards for areas with unique conditions.

10. Depot and Melter Capacity – Expand support infrastructure for more efficient removal operations.
11. Winter Services Unit – Establish a dedicated team to coordinate planning, readiness, and continuous improvement.

Each recommendation was assessed for benefit and ease of implementation, and grouped into four categories: Foundational Initiatives, Quick Wins, High Priorities, and Medium Priorities. This structure forms the basis of a phased implementation plan that begins with immediate operational improvements for the 2025–2026 winter season, followed by medium-term system and contract enhancements, and longer-term investments in infrastructure and data systems. A performance monitoring framework is also suggested and provided, to track implementation progress and report measurable outcomes.

Conclusion

Collectively, these efforts represent a significant step forward in transforming Toronto’s winter operations from a reactive, event-driven model into a coordinated, data-informed system. By finalizing the MSERP and its supporting strategies, the City will enter the 2025/26 winter season better prepared to manage large-scale snow events efficiently, safely, and transparently .

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1. Introduction

In February 2025 a series of three snowstorm events occurred throughout much of southern Ontario, including the City of Toronto (the City). The series of events presented a significant test of Toronto's winter maintenance program and revealed challenges in operational readiness, equipment availability, service coordination, and public communication.

With over 58 centimeters of snow accumulating across multiple storms, the City's snow clearing and removal efforts were placed under scrutiny. The City declared a Major Snowstorm Condition, activated emergency response protocols, and mobilized internal and contracted resources. Despite these efforts, the response faced significant challenges: sidewalk and transit access remained limited for days, 311 was inundated with service requests, and the public and Members of Council expressed frustration with what was perceived as a slow and inconsistent cleanup. Council responded by directing the City Manager to undertake a thorough and objective review with a focus on lessons learned, root causes, and forward-looking solutions. Municipal VU Consulting Inc. (MVU) was retained by the City Manager to carry out this review.

The findings of the review were delivered in MVU's 2025 Winter Storm Response and Winter Maintenance Program Review Report (MVU Winter Review Report), presented to Executive Committee in July 2025. That report included opportunities for improvement, and recommendations for immediate attention.

This report presents those opportunities as refined recommendations, accompanied by associated risks, priorities, and a proposed implementation plan. It also provides the status and, where applicable, budgetary estimates for the immediate actions identified in July.

1.1. Project Goals

The goals of the overall review are to:

1. Conduct a comprehensive review of the City's 2025 winter storm response, including operational performance, service standards adherence, contractor management, resource deployment, and public communications.
2. Benchmark the City's storm response against recognized North American municipal leaders in winter maintenance, including Montreal, Ottawa, Chicago, Minneapolis–St. Paul, and Buffalo, identifying practices that have proven successful in similar or even more extreme conditions.

3. Identify potential short-term operational improvements and long-term strategic changes.
4. Provide recommendations that are actionable, scalable, and tailored to the City's unique size, governance model, infrastructure, and expectations for public service.

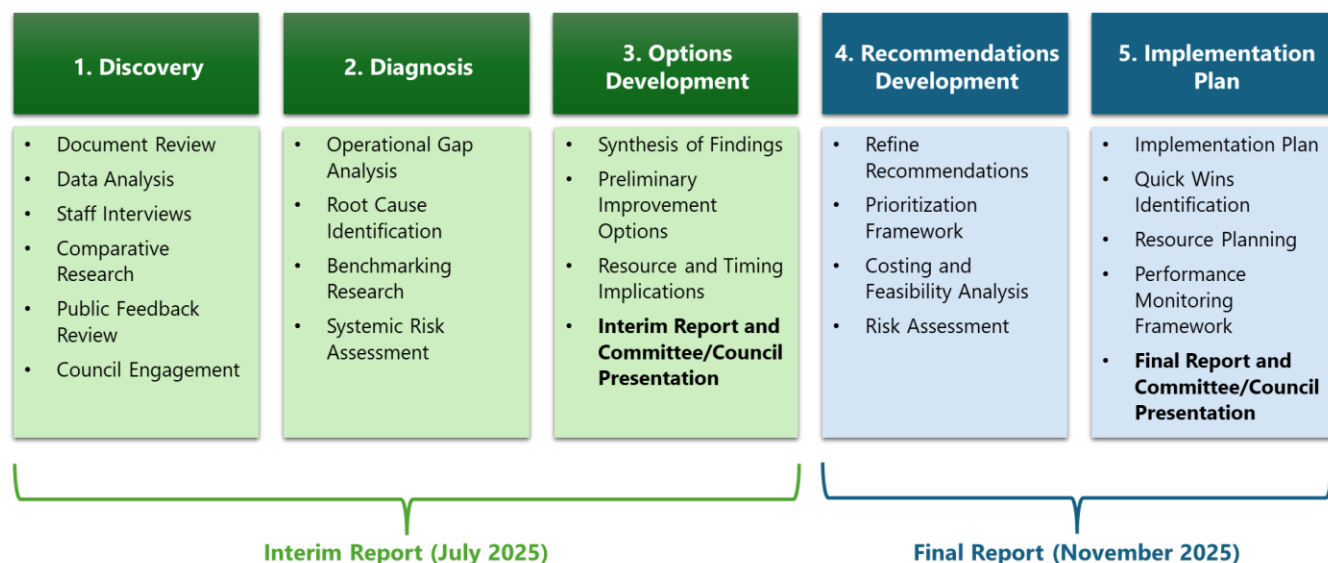
This project required not just a retrospective review of operational activities, but also a strategic forward-looking assessment that will inform the City's ability to respond to major winter events more effectively in the years ahead.

MVU's approach was practical, data-driven, and focused on actionable and measurable solutions, with a commitment to bringing an independent and constructive perspective to this important review. The MVU work was grounded in operational realism, leading practices research, and a deep understanding of the importance of ensuring that the City's residents, businesses, and institutions can continue to thrive, even in the harshest of winter storms.

1.2. Scope of Work

MVU's overall scope of work was organized into five core phases as illustrated in Figure 1.

Figure 1: Work Plan Overview



The first three phases of the work were delivered to the City in July 2025 in MVU's 2025 Winter Storm Response and Winter Maintenance Program Review Report. This report was presented to Executive Committee on July 16, 2025, and approved by Council on July 24, 2025.

The final two phases form the basis of this report and focus on refining MVU's findings into a clear set of prioritized recommendations (Phase 4), including longer-term structural reforms. A practical implementation plan (Phase 5) is also included, detailing timelines, lead responsibilities, resource needs, and a performance monitoring framework to guide delivery and support Council decision-making. This final report will be presented to Executive Committee on November 4, 2025.

1.3. Organization of Report

This report is organized into the following sections:

1. Introduction: This introductory section documents the purpose of this review, scope of work, key terms and organization of the report.
2. Summary of MVU Review Findings: This section summarizes key findings from MVU's July Report.
3. Approach: This section describes the methods used for refining the recommendations and developing the implementation plan.
4. Recommendation: Enhance Major Snow Event Response and Readiness: This section includes details about the Major Snow Event Response Plan (MSERP), which integrates several of the highest-priority July opportunities into a single, actionable framework. Details about the snow removal framework, surge plan and towing plan are also presented.
5. Other Recommendations: Beyond launching the MSERP, this section presents the remaining ten recommendations that will continue to build systemwide capacity and resilience, both during a major snow event and in everyday winter operations.
6. Prioritization and Implementation: This section documents a detailed implementation plan including timelines, lead responsibilities, resource needs, and a performance monitoring framework.

1.4. Key Terms

Below are definitions of some key winter maintenance-related terms that are used throughout this report. These definitions are sourced from the City's Major Snow Event Response Plan Update Report (IE12.7, March 2024).

311 Blackout: A 311 blackout is a temporary period at the start of a winter event when new winter maintenance service requests cannot be created because equipment is deployed to provide winter clearing operations. During this hold period, callers are informed about ongoing

winter operations by the customer service agent. This hold period is lifted once the majority of activations are completed.ⁱ

Activation: Activation is the formal instruction to commence winter maintenance operations, such as salting or plowing. Contractor activation is required for the contractor to mobilize and begin work, based on notification from the City.

Daily Rate: See Stand-by Rate

Extreme Winter Weather: Extreme winter weather can include major snow events but also events or sequences of events with a range of phenomena such as freezing rain or ice precipitation, flash flooding, flash freezes, high winds, and extreme cold temperatures and a variety of combinations of these.

Major Snow Event: A major snow event is a weather event with substantial snow accumulation (typically greater than 25 cm), or a series of smaller snow events which together accumulate enough snow that a significant city-wide snow removal effort is required. Based on historical data, snow events with greater than 25 cm of accumulation are expected once every two years.ⁱⁱ The incidence of major snow conditions based on cumulative events will vary based on the length of time between snowstorms but also the extent to which temperature, wind and hours of sunlight are able to generate snowmelt.

Major Snowstorm Condition: A major snowstorm condition is defined in the City of Toronto Municipal Code to describe exceptional weather events. The Mayor and the General Manager of Transportation Services have the authority to declare a 'major snowstorm condition'. When this happens, parking on roads designated as snow routes is prohibited. This term could apply to either major snow events or extreme winter weather. Major snow conditions have the potential to overwhelm the snow storage capacity of the right of way, consequently requiring snow removal operations. The speed of completing full snow removal on the right of way for a major snowstorm is limited by many factors, including but not limited to the amount of snow removal equipment on hand, the number of obstructions the equipment needs to work around (i.e. parked cars, street furniture, utility infrastructure), and the time required for trucks to move the snow from the removal site to the disposal site and return.

Normal Snow Conditions: Normal snow conditions are snow events with accumulation typically between 2 cm to 10 cm in which snow can be cleared with salting and, on occasion, plowing activations. Events between 10 cm and 25 cm are typically treated the same way, but with more rounds of snow clearing, sometimes coupled with managed snow removal in priority areas.

Right of Way: Right-of-way is the public land set aside for roads, sidewalks, and utilities, typically the space from one property line to the other across a street.

Salting (De-icing): Salting or de-icing is the application of solid and/or a combination of solid and liquid material to the infrastructure which is typically done during the early stages of the snowfall and/or in conjunction with snow plowing on roads, sidewalks and bike lanes to treat icy conditions and thawing snow during or after snowfall.

Significant Weather Event: Ontario Regulation 612/06 defines a Significant Weather Event as an approaching or occurring weather hazard with the potential to pose significant danger to users of the highways within the City. During a significant weather event, typical service levels are suspended as it takes longer to clear roads, sidewalks, bus stops and bikeways. This term could apply to either major snow events or extreme winter weather.

Snow Plowing: Snow plowing involves the mechanical clearing of snow to the edges or boulevards of roads, bike lanes, sidewalks and walkways during or following a snow event. Direct liquid application, salting and snow plowing are all essential pieces in the response to both normal and major snow events.

Snow Removal: Snow removal is the process of removing snow from the right of way and transporting it to one of five designated snow storage areas in the city. Removal is completed either by shaving (where a snowblower moves along a curb and clears windrows that are overhanging) or the more time-consuming process of full removal (where windrows are pulled off the curb/sidewalk into the lane, and accumulated snow is removed). Snow removal is done on a limited basis under particular conditions, and in locations that have insufficient snow storage space within the right-of-way. Places with limited snow storage include bridge decks, bike lanes and alongside narrow sidewalks. Snow removed through this activity is collected and stored in one of five City-owned snow storage facilities.

Stand-by (Daily) Rate: Stand-by for the purposes of this report is a daily fee paid to a contractor for keeping resources (operators, trucks, loaders, etc.) on alert and ready within a defined response time, also known in the City as the Daily Rate. This rate is paid based on the type of equipment, including an operator for the equipment. The rate is paid regardless of the contractor being called upon to do any work or not. If the contractor is called, they are then paid an operating or hourly rate for the work completed.

1.4.1. Acronyms

AVL:	Automatic Vehicle Location
CRM:	Customer Resource Management
EOC:	Emergency Operations Centre
EWMS:	Enterprise Work Management System
FTE:	Full Time Employee
GPS:	Global Positioning System
KPI:	Key Performance Indicator
LOS:	Levels of Service
MMS:	Minimum Maintenance Standards
MSERP:	Major Snow Event Response Plan
MOT:	Maximum Operating Time
RFP:	Request for Proposal
RFT:	Request for Tender
ROW:	Right of Way
RWIS:	Road Weather Information System
SPEC:	Strategic Public and Employee Communications
SR:	Service Request
TEM:	Toronto Emergency Management
TPA:	Toronto Parking Authority
TTC:	Toronto Transit Commission

2. Summary of MVU Review Findings

This chapter includes a summary of the key findings from the MVU Winter Review Report which includes a detailed description of:

- Toronto Winter Maintenance Services: Background information about the delivery of the City's winter maintenance program, its history, levels of service, major snowstorm response plan, parking bylaws and continuous improvement activities.
- February 2025 Major Snow Event: An overview of the February 2025 major snow event including preparations before the storms, details about the storms, the City's response and the aftermath.
- Comparative Research: Identification of notable findings from a review of winter services at comparable large urban cities.
- Diagnosis: Presentation of key findings observed, including strengths and challenges, and a discussion of the core issues that may be fundamental to the success of winter services at the City.
- Improvement Opportunities: Synthesis of results and identification of a listing of short and long-term opportunities for improvement. Recommendations for immediate action are also included.

For complete details, the reader is directed to the MVU Winter Review Report (2025 Winter Storm Response and Winter Maintenance Program Review, July 2025).

2.1. Toronto Winter Maintenance Summary

2.1.1. Overview

Winter maintenance of the public right-of-way is an essential municipal service provided by the City's Transportation Services Division. With an overall annual winter maintenance budget of \$143.8 millionⁱⁱⁱ, Transportation Services manages anti-icing, salting, snow clearing (plowing) and snow removal operations for 14,700 lane-km of roads, 7,900 km of sidewalks, and 487 lane-km of cycling infrastructure and major trails.^{iv} All assets in the transportation network are maintained, including assets requiring special care such as bridges, cycling infrastructure, traffic calming, and safety features.

The overall service goal in the winter is to provide safe and passable conditions in the transportation system. The disruptions to daily life caused by winter weather are aimed to be mitigated by addressing the needs of all right of way users, including motorists,

cyclists, pedestrians, individuals using mobility devices, and those using other forms of active transportation.

Winter maintenance services are provided by in-house staff and contract crews who are on call with necessary equipment between October 15 to April 15 each year.

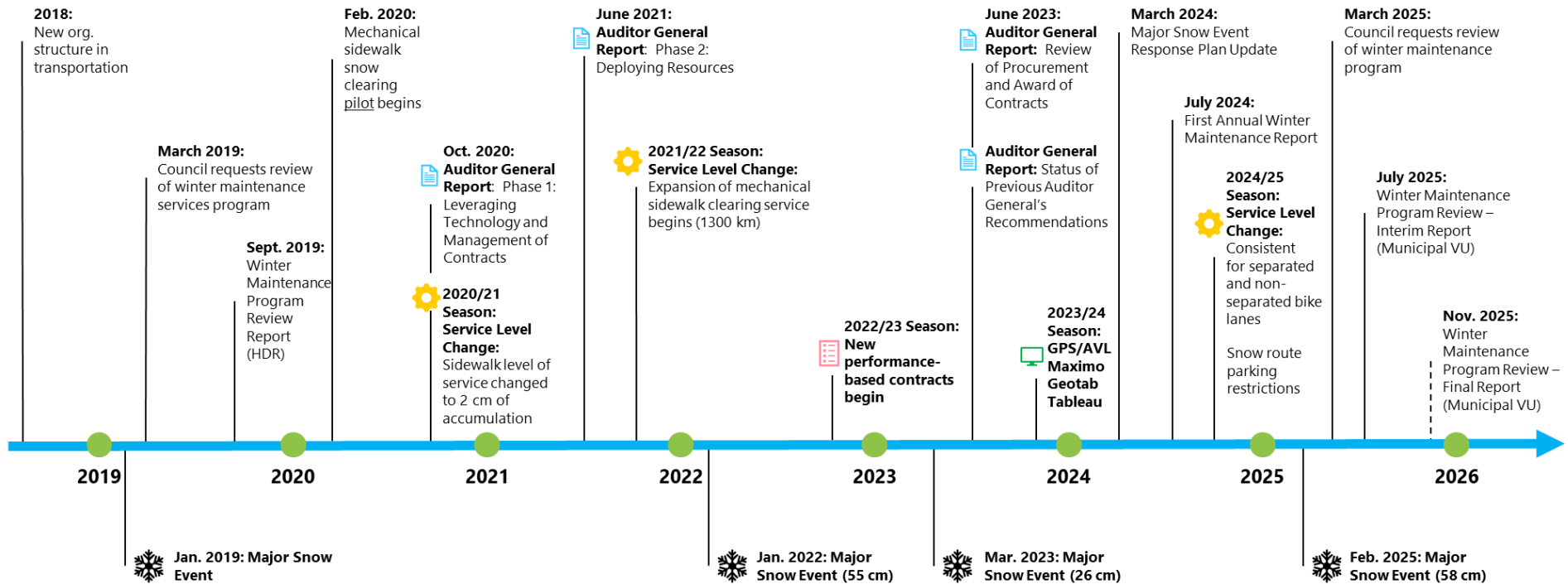
2.1.2. History

The delivery of the City's winter maintenance program has continually evolved over the recent past. Since 2018, the following milestones, opportunities and challenges have occurred:

- Divisional re-organization (2018);
- Program review study (2019);
- Several audits by the Auditor General (2020, 2021, 2023);
- Execution of new performance-based winter contracts (December 2021);
- Several service level changes;
- Four major snow events (2019, 2022, 2023 and 2025); and
- Several other changes to address Auditor General recommendations, Consultant recommendations, and continuous improvement initiatives.

These milestones, as illustrated in Figure 2, generated numerous recommendations and areas for improvement that shaped the operations of the winter maintenance program as it exists today.

Figure 2: Milestones in Toronto Winter Maintenance History (2018-2025)



2.2. February 2025 Major Snow Event

2.2.1. The Storm

During the major snow event in February 2025, three large snowfalls occurred within the span of nine days overall, from the evening of Saturday February 8 to the following Sunday afternoon (February 16). Based on Environment Canada¹ weather data for February 2025 at the Toronto City¹ station, a total of 58.1 cm of snow fell between February 8 to 25 inclusive, plus an additional 5 cm on February 27/28.

The major snow event involved:

- Snow from Saturday Feb 8 evening into Sunday Feb 9 morning. A total of 8.0 cm snow (avg. temp. -2° C to -4° C).
- Snow again from Wednesday Feb 12 afternoon to Thursday Feb 13 morning. A total of 23.8 cm snow (avg. temp. -4° C to -6° C). The Major Snowstorm Condition and Significant Weather Event declaration was made on Feb 12 at 10pm.
- Snow again Saturday Feb 15 morning to Sunday Feb 16 afternoon: 26.3 cm snow (avg. temp. -3° C to -6° C).

Because of the day and night temperatures through these dates, freeze/thaw and snowpack further complicated clearing efforts.

2.2.2. The Response and Aftermath

The February 2025 storms revealed both the dedication of City crews and significant shortcomings in sidewalk clearing, communications, and readiness for more extreme weather. While major roads were kept functional, pedestrian accessibility and local street service fell far below expectations.

With over 58 centimeters of snow accumulating across multiple storms, the City's snow clearing and removal efforts were placed under scrutiny. The City declared a Major Snowstorm Condition, activated emergency response protocols, and mobilized internal and contracted resources. The official 24/7 snow removal operation began on February 19, focusing on clearing priority roads, sidewalks, bike lanes, and areas with limited snow storage. By February 25, crews had removed over 144,000 tonnes of snow.

¹ Latitude: 43°40'00.000" N, Longitude: 79°24'00.000" W, Elevation: 112.50 m

Despite these efforts, many residents reported delayed or inadequate service, especially on sidewalks and local roads. Vulnerable populations - seniors, people with disabilities, and transit users- were particularly affected. The City logged over 25,000 winter-related 311 service requests, reflecting widespread public dissatisfaction. In response, Mayor Olivia Chow and City Council called for a comprehensive review of the City's winter maintenance program and the specific response to the February event with a focus on lessons learned, root causes, and forward-looking solutions.

2.3. Discovery & Diagnosis

As part of the discovery and diagnosis phases of the project, a number of successes, areas for improvement and core issues were identified. The following sections summarize these findings. Refer to the MVU Winter Review Report for complete details.

2.3.1. Successes

The February 2025 storm events placed the City's winter maintenance services under unprecedented scrutiny generating public frustration, accessibility concerns, and media and political attention. However, the events of February 2025 also highlighted several areas of strength; it is equally important to acknowledge and learn from these successes.

1. Staff and Contractor Dedication

The City's dedicated staff and contractors worked tirelessly in difficult circumstances for three weeks to ensure the City's public right-of-way was safe and passable. The staff and Contractor's commitment during this emergency event warrants recognition.

In addition to their commitment during the storm, City staff have been equally committed to continuous improvement and applying lessons learned. All of the staff who met with the MVU team during the discovery phase offered thoughtful suggestions and ideas for the common goal of improving the City's winter maintenance program.

2. Declaration of a Major Snowstorm Condition

The declaration (enacted the evening of February 12) proved effective in facilitating the clearing of expressways and arterials, it allowed for parking bans on designated snow routes that otherwise impeded plows. This helped crews plow curb-to-curb on key streets more efficiently. Overall, core vehicular routes and highways were one aspect where the City's response met expectations, enabling emergency vehicles to operate and basic traffic flow to resume on main thoroughfares relatively soon after the storms.

3. 24/7 Snow Removal Operation and Scale of Cleanup

The City's decision to commence city-wide snow removal (trucking away snow) and to run those operations around the clock, was a critical factor in eventually clearing the accumulated snow. Once mobilized, the coordinated effort of City and contracted crews working continuous 12-hour shifts achieved over 144,000 tonnes of snow removed from hundreds of kilometers of roadway and sidewalk. By concentrating first on high-priority areas (such as downtown streets, transit stop zones, school zones), the City mitigated some of the most urgent hazards within the first week. This was the first time since 2022 that such a large-scale snow removal was required, and many of the enhancements implemented since 2022 did prove beneficial.

4. Inter-Divisional Coordination

Through the Emergency Operations Centre (which was activated for the storm) helped improve information flow between Transportation Services, 311, Toronto Police and other entities. This coordination was stronger compared to the 2022 storm response, indicating that some lessons were learned and applied

5. Technology and Tools

A number of new tools have been implemented since the major snow event in January 2022 that led to increased efficiency during the 2025 event. These include improved GPS/AVL tracking capabilities as well as the implementation of Maximo. These tools enabled staff to track contractors, activations and service requests in real-time. The City's Maximo EWMS, the Geotab AVL system and the Tableau interface with the 311 Service Requests allowed increased tracking of plows/crews and provided real-time information to managers and staff, this helped identify coverage gaps and redeploy resources as needed. It should be noted however, that there are further issues and improvements around technology and tools throughout the Findings and Opportunities sections of this report.

6. Snow Clearing and Salting

Snow clearing operations generated a number of areas for improvement, but it is important to acknowledge the activations that worked well, including:

- Salting and clearing operations were generally successful until the storage capacity of the right-of-way was reached.
- Highways, arterials and collectors were generally accessible and met service standards throughout the storm.

2.3.2. Challenges and Areas for Improvement

A number of challenges and areas for improvement were identified through MVU's collection and analysis of documents, data, staff feedback, Councillor feedback and public feedback. These challenges and areas for improvement were organized into six key themes in the MVU Winter Review Report, as illustrated in green in Figure 3.

Figure 3: Key Themes



Refer to the MVU Winter Review Report for a full listing of challenges and areas for improvement related to each theme.

2.3.3. Core Issues

The February 2025 winter storm response revealed that the City's winter maintenance system, while fundamentally sound for routine snowfall, faces systemic gaps that limit its effectiveness when major snowstorm events hit. These core issues are interconnected, cutting across policy, operations, contracts, technology, and communication, and should be addressed as a whole to build a more resilient, agile, accountable program.

The MVU Winter Review Report identified a number of systemic, core issues that significantly impacted the City's response. These core issues are illustrated in Figure 4.

Figure 4: Core Issues

1. Major snow events and urban snow storage



In less than nine days, Toronto experienced three significant snow events, depositing approximately 58 centimetres of snow on the city's dense urban grid. This total snowfall overwhelmed the available urban snow storage capacity.

2. Major Snow Event Response Plan (MSERP)



The City's MSERP lacked the detailed operational guidance required to manage the unique demands of a severe multi-day, multi-storm scenario. Operations staff and contractors had to make real-time ad hoc decisions about which areas to tackle first, where to stage loaders and haul trucks, and how to coordinate hauling logistics, during the peak of the crisis, when time and resources were already constrained.

3. Reporting tools



The City's current GPS and Automatic Vehicle Location (AVL) tools, while useful for tracking plow movement, were not designed to measure final conditions on the ground. In a dense city with parked cars, obstacles and varying snow depths, one or even several passes, does not guarantee that a road, sidewalk, or bike lane is truly clear and safe.

4. Contract design



The City's performance-based winter maintenance contracts are built to deliver efficient plowing and salting for routine storms but are less effective at addressing the unique demands of multiple major storms in rapid succession. The lack of specified snow removal resources, combined with no contractual obligation for stand-by capacity for removal, left gaps in accountability and hindered the City's ability to direct additional trucks, operators, or haulage when right-of-way storage was exhausted.

5. Snow removal



While the City's contracts and service levels comprehensively address salting and plowing operations for routine events, the City currently treats snow removal as an exceptional, ad hoc activity rather than an integrated part of storm response. Without formal service levels, clear triggers, and pre-arranged capacity, staff reactively plan snow removal once right-of-way storage is exhausted, leading to delayed mobilization and inconsistent outcomes.

6. Communication and expectations



The City's winter communications have historically focused on routine, reassuring updates rather than true 'emergency-style' messaging when severe events strike. Inaccurate or overly optimistic statements about progress, combined with the AVL system's incomplete picture, created frustration when residents and Councillors could see that streets or sidewalks were not actually clear.

2.4. Opportunities and Recommendations

The MVU Winter Review Report identified 32 opportunities for consideration by the City. These opportunities have been further evaluated and refined and are documented in detail in Sections 4 and 5 of this report.

The MVU Winter Review Report also identified six recommendations for immediate implementation to improve readiness for the 2025/26 winter season. These recommendations are listed below.

1. Detailed Major Snow Event Response Plan

The City should finalize and operationalize a detailed, scalable response plan with escalation triggers, mapped routes, and defined roles. The plan should specify neighbourhood-level removal beats, staging areas, snow dump sites, haul routes, decision thresholds, and task checklists aligned with Emergency Operations Centre protocols.

2. Stand-Alone Snow Removal Contracts

The City should investigate the benefits, feasibility and associated costs of dedicated, unit-based snow removal contracts that guarantee standby equipment and rapid deployment capacity. These contracts must be integrated with the City's response plan so that removal beats, staging, and logistics are already pre-mapped and crews and equipment can be promptly activated.

3. Quality Monitoring and Reporting Tools

Real-time condition verification should supplement GPS data with patroller photo-reports and standardized ratings to confirm service quality. Field patrollers should be equipped with photo-enabled apps to verify actual surface conditions on all road segments travelled, and submit standardized, geo-tagged reports, seamlessly linked to AVL data and contractor logs within a centralized dashboard to improve operational oversight.

4. Storm Communications

The City should implement a modernized, tiered communication approach that distinguishes emergency storm updates from routine messages, based on clear, consistent, distinct protocols for public updates, Council briefings, contractor reporting, and internal scripting.

5. Towing Capacity

Standby towing contracts should be secured for activation during major events, paired directly with snow crews to clear blocked curb lanes. Temporary off-street parking should also be

arranged to encourage compliance and reduce the volume of parked vehicles that obstruct operations.

6. Year-Round Winter Operations Unit

A permanent Winter Operations Planning Unit should coordinate all aspects of winter readiness year-round, including plan development, mapping, training, contract oversight, and inter-divisional drills. The unit could be established through restructuring rather than requiring additional headcount.

3. Approach

This chapter describes MVU's approach to refining the recommendations and developing an implementation plan.

3.1. Recommendations Development

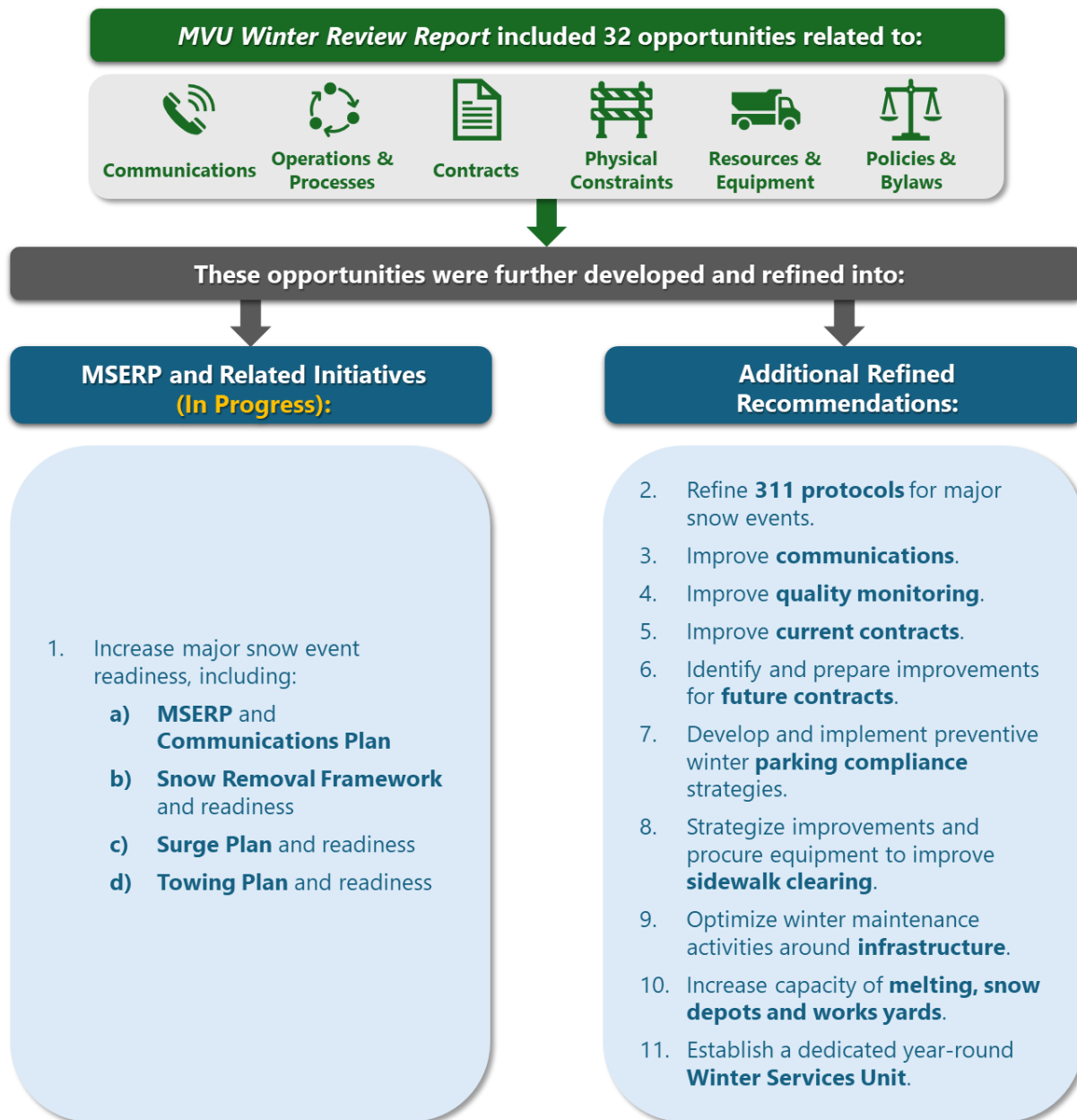
3.1.1. Refinement of Opportunities

In the MVU Winter Review Report, 32 opportunities were identified and cross-verified through MVU's Mixed Methods Analysis approach. As part of the current scope of work, these opportunities were further developed and refined through the identification of:

- Foundational opportunities: Some opportunities require immediate implementation as they are recognized as critical or foundational pieces.
- Common themes: In some cases, opportunities with common themes were combined into more fulsome recommendations where practical.
- Common stakeholders, workplans and/or timelines: In some cases, opportunities involved similar stakeholders, workplans and/or timelines. Where practical, they were combined and refined into a single recommendation.
- Interdependencies: Some recommendations are dependent on others and were other combined or sequenced as appropriate.

In the end, 32 opportunities were refined into 11 overall recommendations as illustrated in Figure 5. As will be described in Chapter 4, many of these recommendations are further divided into sub-recommendations.

Figure 5: Refinement of Opportunities



Following the publication of the MVU Winter Review Report, the development and implementation of the MSERP and associated initiatives was identified by MVU and the City as a foundational recommendation of the highest priority. As a result, the implementation of the MSERP and associated initiatives is already underway; these items are described in greater detail in Section 44 of this report.

3.1.2. Recommendation Descriptions

The following information is documented, where applicable/available, for each recommendation:

- Related Core Issue(s): A listing of core issue(s) related to the recommendation (i.e. snow storage, MSERP, reporting tools, contract design, snow removal and/or communication and expectations). Refer to Section 2.3.3 for a summary of the core issues.
- Description of Recommendation: A description of the refined recommendation.
- Timelines: The proposed timeline for initiating action:
 - o Immediate (before this winter)
 - o Soon (this winter season)
 - o Later (2026+)

As well as the expected duration:

- o Short (1-4 months)
- o Medium (5-12 months)
- o Longer (12+ months)

The timeline estimates are based on consultation with staff, expected effort, and the team's industry experience.

- Lead and Stakeholders: The proposed lead for implementing the recommendation and associated stakeholders.
- Risks & Mitigation: Risks related to the implementation of the recommendation and mitigation strategies.
- Key Steps: A summary of recommended key steps that are needed to fully implement the recommendation.
- Costing and Resources: Conceptual estimates of resources required for implementation are included for the sole purposes of assisting Council with deliberations and decision making related to future winter operations. Further refinement of the estimates is required prior to budget inclusion. These estimates include:
 - o Financial resources required (e.g. capital or operating costs over and above existing). It is assumed that consulting fees would be funded through the capital budget.
 - o Staff resources required (e.g. hours of staff time).

A fully tailored, comprehensive financial model was also created to enable the team to run scenarios for varying levels of response and resource demand related specifically to snow removal.

More detailed assumptions are provided in Appendix C.

- Ease of Implementation Score: A semi-quantitative score to reflect the ease of implementation of the recommendation in terms of its complexity, timeline and costs.
- Benefit Score: A semi-quantitative score to reflect the benefit of the recommendation in terms of its ability to improve customer experience, increase efficiency and address core issues.

Refer to Sections 4 and 5 for complete details about each refined recommendation.

3.1.3. Prioritization Framework

Based on consultation and investigation, to help prioritize the recommendations, each was assigned a semi-quantitative score for its ease of implementation and benefit, where:

- Ease reflects how readily a recommendation can be implemented, considering its complexity, time, and cost, essentially how achievable it is within the City's current capacity and resources.
- Benefits represent the value or impact of implementing a recommendation, measured qualitatively through improvements to customer experience, operational efficiency, and resolution of core service issues.

The ease of implementation score and the benefit score was assigned based on the criteria below.

Ease Scoring

Complexity / Degree of Change:

3 - Relatively simple, smaller process or procedural changes, less formalities or legal requirements

2 - Moderate changes, require consultation with some stakeholders

1 - Difficult changes required across the organization, formal planning required, require consultation with many stakeholders

Time to Implement:

3 - Prompt, swift change within one to four months

2 - Moderate timing, within one year

1 - Extended timing, at least one or more years

Cost to Implement:

3: Little to no operating and/or capital costs to implement

2: Moderate costs to implement (<\$100,000)

1: Higher costs to implement (>\$100,000), potential capital investment

Benefit Scoring:

Customer Experience:

3 - Customers will experience enhanced service or improved value for money

2 - Customers may experience service improvements or more value for money

1 - Customers will experience little to no service improvements

Efficiency:

3: Major efficiency improvement in clearing and removal of snow

2: Moderate efficiency improvement in clearing and removal of snow

1: Little to no efficiency improvement in clearing and removal of snow

Addresses Core Issue(s):

3 - Addresses or enables more than one core issue

2 - Addresses or enables one core issue

1 - Little to no improvement of core issues

The scored recommendations were plotted to visualize relative effort and impact, and the plot was then divided into four types: Foundational Initiatives, Quick Wins, High Priority, and Medium Priority, which guided the sequencing and phasing of the implementation plan. These are further defined below.

Foundational: Benefit = 9. These recommendations were identified as foundational pieces with high benefit scores and are already in progress. Core recommendations deliver significant long-term benefits but may be complex to implement. These require careful planning and early initiation, as they establish the stability and capacity needed for sustained success.

Quick Win: Ease = 9. These recommendations are considered the easiest to implement in terms of complexity, time and cost and also offer moderate to high benefits. These are actions that provide value with relatively low effort, and are often smaller, well-targeted improvements that build momentum, demonstrate early success, and support broader changes.

High Priority: Benefit and/or Ease = 7 or 8. Recommendations offering substantial benefits with reasonable effort, or those that are easy to implement but deliver important value. These should be prioritized to balance impact and feasibility.

Medium Priority: Benefit = 5 or 6 and Ease ≤ 6 . These recommendations are expected to deliver moderate benefit to the City. They present moderate benefits and/or higher implementation challenges. While valuable, they are not essential to immediate improvements and can follow once foundational and high-priority actions are underway.

Lower Priority: Benefit = 3 or 4. These recommendations are expected to deliver lower benefit to the City.

Note: None of the recommendations included in this review were classified as lower priority.

3.2. Implementation Plan

A phased implementation plan was developed to guide the rollout of recommendations over a 2+ year period. While this plan provides a structured and efficient framework, the City has already initiated several recommendations concurrently in response to the upcoming winter season and its obligation to Council and the public to demonstrate both short- and long-term improvements. The implementation schedule is based on prioritization results and is intentionally aligned with the winter season and allows time, where feasible, for planning, execution, and training.

4. Recommendation: Enhance Major Snow Event Response and Readiness

A refined set of recommendations has been developed for improving the City's winter maintenance program. Eleven recommendations have been developed, each with defined actions, ownership, timelines, resource needs, leads, stakeholders, associated risks, and prioritization.

The City has further engaged MVU to assist it with the development of the Major Snow Event Response Plan, which integrates several of the highest-priority July opportunities into a single, actionable framework. Some of its core elements, a Snow Removal Framework, a Towing Strategy, and a Surge Plan, are being finalized and tested with MVU's support to ensure readiness before the 2025–2026 winter season.

The MVU Winter Review Report found that the City's response plan to the major snow event of February 2025 was not as robust as it could have been, and several areas for improvement were identified:

- All of the mapping for priority areas was not fully or thoroughly documented prior to the event.
- In conjunction with the previous statement, route maps for snow removal were not fully prepared prior to the event.
- Clear roles and responsibilities for various senior staff were not fully documented prior to the event. Furthermore, there was confusion regarding who, when, where and how the plan was being implemented.
- A clear and concise emergency communication strategy was lacking.
- Scenarios (such as towing, alternate parking, streetcar or solid waste collection suspension, etc.) were not pre-planned in advance of the event.
- There was no pre-planned staff re-deployment strategy or surge planning for different scenarios similar to a business continuity plan.
- Coordination with TTC, TPA and other stakeholders was not well defined.

The MVU Winter Review Report included a number of opportunities related to enhancing readiness: implementing a new MSERP and associated initiatives that have been refined into the following recommendations, described in further detail in this section:

- Recommendation 1A: Develop and Implement a Robust MSERP and Communications Plan
- Recommendation 1B: Develop and Implement a Snow Removal Framework and Readiness

- Recommendation 1C: Develop and Implement a Surge Plan and Readiness
- Recommendation 1D: Develop and Implement a Towing Plan and Readiness

4.1. Major Snow Event Response Plan

While the City's current MSERP outlined high-level triggers and actions, it lacks the detailed operational guidance required to manage the unique demands of a severe multi-day, multi-storm scenario. Specifically, the plan did not include pre-defined snow removal beat maps, priority hauling routes, or neighbourhood-level staging areas that could speed up removal once storage capacity was exceeded. It also lacked some key areas of focus such as scenario planning, contingency staffing, and the availability of surge snow removal equipment and operators.

Without these granular plans in place, snow removal operations risk becoming fragmented, with districts making different tactical decisions and limited ability to coordinate equipment across zones. In the February 2025 major snow event, this resulted in inconsistent removal timelines between neighbourhoods and some confusion about which streets would be addressed first. It also complicated coordination with other City services like Solid Waste and TTC.

Recommendation 1A: Develop and Implement a Robust MSERP and Communications Plan



Photo Source: Major Snow Event Post Operational Report (February 2022)

Relates to Core Issue(s):

MSERP, Snow Removal, Communication & Expectations

Timing:

This recommendation is in progress and is expected to take 1-4 months to implement. In addition, it will be refined over the course of 2026. More information about the status of this implementation can be found in Section 4.1.3.

Description:

One of the highest priorities for strengthening Toronto's winter resilience is to develop and operationalize a more robust MSERP that is practical, detailed, and ready for activation when severe conditions occur. The MSERP must include detailed route maps for both partial and full-scale snow removal, clear escalation thresholds for when snow storage capacity is reached, and explicit criteria for moving from routine plowing to full-scale removal. The plan should also identify designated staging sites for loading and hauling operations, snow dump locations, and confirmed traffic routes for haul trucks to minimize congestion.

The MSERP must set out formal roles and responsibilities under an integrated Incident Management approach. Key operational, supervisory, communications, and escalation roles must be defined for each phase of a major event, supported by chain-of-command clarity that aligns with Toronto's Emergency Operations Centre (EOC) protocols. Clear task checklists, decision thresholds, and real-time reporting expectations should be part of the plan so that all teams and contracted partners understand their duties in advance. A Communications Plan should be embedded within the MSERP to facilitate coordinated, timely, and consistent information-sharing across all City divisions, contracted partners, emergency operations, and public communication channels during major snow events.

Outputs:

Implementing this recommendation would result in a comprehensive and operational MSERP document, accompanying training materials to support rollout and ongoing preparedness, and a more confident, well-prepared workforce equipped with clear procedures and accessible information to act swiftly and effectively during a major snow event.

Lead and Stakeholders:

This recommendation is being led by MVU (as per engagement) with support from Transportation Services. Other stakeholders include SPEC, Fleet Services, Emergency Management, TTC, Solid Waste, Parking Enforcement, Procurement, Toronto Water and all winter maintenance contractors.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Reputational: Risk of public or media criticism if MSERP is delayed or ineffective. Mitigate through proactive communication with Council and the public and demonstrating visible and measurable progress.
- Operational: Risk of poor coordination or unclear roles delaying implementation, resource strain on staff. Mitigate through a cross-divisional project team, defined responsibilities, and milestone tracking, naming clear leads, and holding regular coordination meetings.
- Safety: Risk of unsafe work or traffic conditions if procedures are unclear. Mitigate by embedding detailed safety protocols, training, and tabletop testing (all already included in the MSERP outline).
- Compliance / Corporate Liability: Risk of misalignment with emergency management or health/safety requirements. Mitigate by collaborating and aligning with corporate and EOC protocols and obtaining appropriate divisional reviews.
- Financial: Risk of underestimating staff effort, unplanned overtime, or other resource needs during implementation. Mitigate by planning realistic timelines, allocating dedicated staff time, and openly communicating costs and risks.
- Environmental: Risk of unassessed environmental impacts from increased snow storage or hauling. Mitigate by validating snow dump sites through independent assessment including environmental considerations (also a recommendation).

Recommended Steps:

1. Project Kickoff: Form the MSERP project team, prepare a detailed project plan, collect data and host a kickoff meeting.
2. Research and Best Practice Review: Conduct a rapid review of best practices of other municipal comparators, compile notes, review recent storm data, and discuss preliminary options with project team.
3. Stakeholder Workshops: Conduct a series of structured workshops to discuss core elements and solicit feedback from Operations staff, Fleet Services, Procurement, Emergency Management, SPEC, EOC members and Management.
4. MSERP Draft: Develop an MSERP outline and assist City staff with developing content (e.g. one person drafts Operations section, another the Communications Plan, etc. then staff integrate them).
5. Tabletop Exercise: Conduct a tabletop exercise to test the draft plan with core team and stakeholders, document action items and make changes to MSERP as required.

6. Final Approval and Sign-off: Submit the final draft to Senior management for circulation and approval, obtain official endorsement.
7. Communication and Training: Distribute finalized MSERP to all relevant stakeholders, conduct briefing sessions with frontline staff and contractors, share MSERP highlights with SPEC and 311 staff.

Resources and Costing:

MVU is working with the City to develop and implement the MSERP.

Details about estimates are provided later in this section.

Ease of Implementation:

Significant changes required, multiple stakeholders involved, prompt timing (1-4 months), moderate cost

Benefit:

Significant service enhancement, major efficiency improvement, addresses multiple core issues

4.1.1. Status of MSERP Work Completed to Date

Over the past several months, work to date includes:

- Extensive engagement across multiple City divisions and partners, including Transportation Services, SPEC, Fleet Services, the Toronto Parking Authority, TTC, Toronto Police (Parking Enforcement), senior management representatives from the Emergency Operations Centre (EOC), and Procurement.
- Confirming escalation and coordination protocols through an EOC workshop to ensure the plan integrates fully with emergency management structures. These coordinated efforts are providing the operational, financial, and governance foundation on which the MSERP will be finalized.
- Multiple operational sessions working through the activation criteria and escalation, key MSERP elements, proposed content, and responsibilities for development.
- Developing content for Introduction and Purpose, Guiding Principles, Governance Model, Activation Criteria and Escalation Phases, Roles and Responsibilities, linkage to existing SOPs for operations plans guidance, Public Communications Plan outline, Enforcement and Bylaw Adjustments outline, Resource Inventory outline, Health & Safety and Staff Welfare outline, Recovery and Debrief outline, and Plan Administration.
- Coordinating with SPEC to align the MSERP with the City's broader winter communications strategy.

- Developing concepts for mock exercises and rollout.

4.1.2. MSERP Outline

The framework has been developed by MVU in collaboration with City staff, with content for some chapters being written by City staff with support.

The MSERP is designed as a comprehensive, operationally focused document that establishes how the City will prepare for, respond to, and recover from major snow events. It aligns with the City's corporate Emergency Plan and Transportation Services' winter maintenance programs to enable a unified, citywide response with minimum overlap and maximum effectiveness. The plan functions as both a tactical field manual and a coordination tool, bridging operational divisions, corporate governance, and external partners.

The MSERP framework includes the following sections, and the complete outline is included in Appendix A.

1. Introduction and Purpose: This introductory chapter documents when the plan is activated and situates the plan within Toronto's broader emergency framework. This chapter clarifies how the plan complements existing transportation, corporate, and divisional response frameworks to ensure seamless coordination during activation.
2. Guiding Principles: This chapter documents the guiding principles of the plan including safety, accessibility, mobility, environment, efficiency and communication, while explicitly aligning them with the City's Council-approved strategic priorities.
3. Governance Model: This chapter outlines how governance and accountability are maintained throughout activation and recovery, ensuring consistency with the City's Emergency Management structure.
4. Activation Criteria and Escalation Phases: This chapter documents various phases of activation during a major snow event and the corresponding actions that must be taken, including when the Emergency Operations Centre (EOC) should be activated.
5. Roles and Responsibilities: This chapter documents key roles and responsibilities related to the MSERP and activation of the EOC, including coordination between Transportation Services, Fleet Services, SPEC, TPA, TTC, and Toronto Police (Parking Enforcement).
6. Operations Plan - Plowing and Salting: This chapter documents the City's detailed operational plan for plowing and salting during major events, equipment deployment strategies, recognizing that formal service levels are suspended once the MSERP is activated. It outlines how operational efforts will be organized and prioritized to protect safety, maintain essential mobility, and preserve access for emergency and transit

services, with focus on the highest-risk and most vulnerable areas while striving to keep all parts of the transportation network open and functional as quickly as possible.

7. Operations Plan - Snow Removal: This chapter documents the City's detailed operational plan for snow removal including triggers, priority zones, resources, disposal sites, logistics and timelines. It will provide the operational structure and decision logic needed to mobilize resources quickly and manage constrained storage areas efficiently.
8. Public Communications Plan: This chapter contains the Communications Plan including pre-event, during-event and post-event communications, tools and multilingual outreach. It will contain message templates, approval workflows, communication channels, multilingual outreach tools, and media coordination protocols.
9. Enforcement and Bylaw Adjustments: This chapter documents bylaw adjustments that may be required including temporary parking bans, towing strategy and any necessary bylaw exemptions required (e.g. noise). It will outline required bylaw amendments or temporary provisions, activation procedures, and coordination steps as required.
10. Resource Inventory: This chapter lists equipment, staff, contractors, works yards, snow dumps and other relevant contacts that may be required during a major snow event, linked to the Surge Plan. It will include links to categorized inventories, contact lists, standby arrangements, and links to fleet and contract databases to support activation.
11. Health, Safety and Staff Welfare: This chapter includes details related to rest requirements, safety protocols, meal information, warm-up areas, and critical incident stress management. It will contain safety considerations, fatigue-management protocols, and links to guidance for reporting and managing incidents.
12. Recovery and Debrief: This chapter describes the transition back to normal operations, assessments, restocking and how to document post-storm lessons learned. It will include post-event reporting information and guidance for debriefing.
13. Plan Administration: This chapter sets the governance process for maintaining, testing, and updating the MSERP, including annual reviews and simulation exercises. It will specify roles responsible for updates, review schedules, version-control protocols, and documentation standards to ensure accountability and continuity.
14. Appendices: The appendices include route maps, priority locations, contact directories, communication templates, equipment and supply inventories, and policy references.

4.1.3. Outstanding Implementation Steps

MVU is striving to complete the development and training of the MSERP within the early part of the 2025/26 winter season. MVU will continue to lead and manage completion of the

MSERP, so that sections are complete, consistent, and aligned within the framework. The key steps remaining for implementing this recommendation are:

- Compile and organize material gathered to date through consultation, planning, and technical input to support content development.
- Oversee and coordinate the section-by-section drafting process, with writing responsibilities shared between City staff and MVU, based on subject matter expertise.
- Verify that each section contains the required content, follows the agreed structure, and integrates with related components.
- Circulate the fully compiled draft for City review, feedback, and refinement.
- Support the City in preparing for implementation, including mock exercises, training, and post-exercise adjustments.

4.2. Snow Removal Framework/Plan

One key gap identified is the fact that the City's current performance-based winter maintenance contracts do not address large-scale snow removal operations. Snow removal is not adequately described, nor is it adequately resourced in the current contracts. Historically, staff focused contract terms on routine plowing and salting with clear standards and payments, while treating snow removal as an unpredictable, exceptional task handled on an ad hoc basis when ROW storage runs out.

Performance-based contracts were largely designed to shift risk and day-to-day operational control to contractors for routine clearing, not for high-cost surge operations like large-scale removal. In many cases, these details were not fully specified in past contracts, partly to avoid driving up bid prices with additional standby costs for work that may not be needed every winter.

Snow removal has historically fallen into a grey area - too costly and variable to fully build into base contracts, but too critical to leave purely to chance. The February 2025 storm revealed the real operational risks of this gap, and shows why stronger contract language, and reliable resourcing are needed if the City is to manage major snow accumulations more proactively and effectively in future winters.

Recommendation 1B: Develop a Snow Removal Framework and Readiness



Photo Source: City of Toronto Winter Services Guide 2024-25

Relates to Core Issue(s):

MSERP & Snow Removal

Timing:

This recommendation is in progress and is expected to take 1-4 months to develop the Framework and a short-term approach will be implemented throughout the 2025/26 winter. A full Snow Removal Plan and resourcing will be implemented throughout 2026 and be available for the 2026/27 winter season. More information about the status of this implementation can be found in Section 4.2.3.

Description:

One of the most significant structural gaps exposed in the performance-based contract model is the absence of a clearly defined, stand-alone language and resources specifically for snow removal. This pertains to both major snow events and proactive snow removal, between snowfalls, to preventively reduce the amounts of accumulating snow in areas with little room for storage. Currently, winter maintenance contracts and plans provide detailed service levels for plowing and salting, but snow removal remains an undefined, reactive activity bundled into broader contracts with no distinct scope or guaranteed stand-by capacity. This leaves the City dependent on the same crews, operators, and equipment that are already tasked with routine clearing.

In conjunction with the development of the MSERP, the City should develop a comprehensive framework for snow removal, including criteria for activation (accumulation in low-capacity areas, major snow events), overall roles and responsibilities (internal teams, contractors, or a

combination), logistics, and suggestions for budget allocation. This work sets the operational foundation for snow removal activities.

While the primary benefit of this recommendation is a more coordinated and immediate response during major snow events, the intent should extend beyond emergency activation. Establishing a clearly defined snow removal framework would also enable the City to operate proactively between storms, systematically removing accumulated snow in dense, space-constrained areas before limited storage space causes snow from roadways to be pushed onto sidewalks into the street, leading to snowy blocked routes and narrowed traffic lanes.

Outputs

The implementation of this recommendation would produce a comprehensive Snow Removal Framework document that clearly defines activation criteria, operational responsibilities, resource requirements, and coordination protocols for both proactive and event-based snow removal. In addition to the plan itself, this work would result in a more prepared and equipped operational group, with staff and contractors trained, assigned, and ready to activate snow removal operations promptly when conditions require. The outcome would be not only a documented framework but a functional, coordinated team capable of executing it effectively during and between major snow events.

Lead and Stakeholders:

This recommendation is being led by MVU (as per engagement) with support from Transportation Services (Operations). Other stakeholders include SPEC, Fleet Services and multiple winter maintenance contractors.

Risks:

Risks that may be incurred in implementing this recommendation include:

- Reputational: Risk of public criticism if snow removal remains inconsistent or delayed after plan development. Also risk of poor optics if the public sees active removal on 'a sunny day'. Mitigate by clearly communicating measurable progress (both results and effort) and expected improvements.
- Operational: Risk of limited capacity or unclear division of responsibility between City staff and contractors. Mitigate by defining roles, standby capacity, and activation triggers in the framework.
- Safety: Risk of unsafe conditions if removal resources are delayed or unavailable. Mitigate by prioritizing critical locations and formalizing resource mobilization protocols.
- Compliance / Corporate Liability: Risk of exposure to liability claims due to poor snow management, even with plan implemented. Mitigate by documenting conformance to

minimum maintenance standards and ensuring consistency with existing contracts and policies.

- Financial: Risk of cost overruns or unbudgeted expenses when activating additional snow removal resources. Mitigate by identifying indexed costing, funding sources, setting clear activation thresholds, and tracking actual costs against forecasts.
- Environmental: Risk of unassessed environmental impacts from increased snow storage or hauling. Mitigate by validating snow dump sites through independent assessment including environmental considerations (also a recommendation).
- Health: Risk of physical strain or fatigue among operators and staff during prolonged snow events. Mitigate by including rest periods, resource rotation, and relief plans in the framework (already included).

Recommended Steps:

1. Initiation and Kickoff: In conjunction with the MSERP workplan (Recommendation 1A), form a project team, hold a kickoff meeting and gather relevant information.
2. Workshops: Hold workshops with Transportation Services Operations staff and other key stakeholders to brainstorm the framework and develop the baseline inventory of resources available.
3. Define Activation Criteria: Work with the project team to define criteria for activation (accumulation in low-capacity areas, major snow events), overall roles and responsibilities (internal teams, contractors, or a combination) and logistics. Discuss and define the difference between proactive snow removal and MSERP snow removal.
4. Action Planning: Put the plan into action by drafting procurement documents for contracting snow removal services and accessing resources from independent contractors (e.g. dump trucks).
5. MSERP: Synergize outputs of this workstream with the MSERP and the Snow Removal Operations Plan.

Resources and Costing:

MVU is working with the City to develop and implement the MSERP. Details about estimates are provided in Section 4.4.3.

Ease of Implementation:

Significant changes required, multiple stakeholders involved, prompt timing (1-4 months), higher cost

Benefit:

Significant service enhancement, major efficiency improvement, addresses multiple core issues

4.2.1. Status of Snow Removal Framework Completed to Date

Over the past several months, work to date includes:

- A series of collaborative consultation exercises to introduce preliminary concepts, then refine and align across operational groups.
- Concurrently, the teams have been continuing to collect and analyze operational data, historical records, and costing information to populate plan components and support the development of a comprehensive financial model. This model, built from the ground up, enables the team to run scenarios for varying levels of response and resource demand.
- Teams have met with staff and all engaged winter operations contractors to explore operational options, identify potential improvements, and leverage the innovation and best practices developed through their internal operations.
- Coordinating with SPEC to align the MSERP with the City's broader winter communications strategy.
- Consultation and collaboration with TPA to devise a plan for improving communication of parking prohibitions during major snow events, to prevent illegally parked cars and help get cars out of the way for removal and clearing.

4.2.2. Snow Removal Framework Options/Scenarios

In consultation with City staff, MVU has developed three distinct scenarios for addressing snow removal for the long term.

Highlighted in Table 1 that follows, these include:

- Scenario 1 has three variations (1a, 1b, and 1c),
- Scenario 2 has two variations (2a and 2b), and
- Scenario 3 is an improved existing model for the short term, with a completely re-developed contract for clearing and removal in the longer term.

The total estimated annual cost is comprised of two components, Stand-by costs (or Daily Rate as it is known in the City of Toronto), plus the estimated cost for snow removal and haulage for a major snow event, similar to the February 2025 storm. It should be noted that the cost for the snow removal/clean up of the February 2025 storm was approximately \$20 million, and took over 18 days to complete.

Given the timing, it is not feasible to secure a viable contract for the upcoming 2025/26 season. The earliest a contract for snow removal could likely be procured would be for the 2026/27 season, which in itself would be difficult in the current marketplace. Ideally, it would be best to

coordinate the timing of the snow removal contract with the end of the salting/snow clearing contract. The existing salting/snow clearing contract ends in April 2029, with three potential option years.

The costs identified in the table are for a minimum of 7-years to enable the contractor to amortize the cost of the equipment over a reasonable time frame that is relatively in line with the life cycle of the equipment (typically 7 to 8 years). If the City were to decide to proceed with a dedicated contract for snow removal for a shorter duration (say 3 years, 2026 to 2029), these costs would be substantially higher (30 to 40% higher at a minimum), likely to be reflected in the bids.

Table 1: Summary of Snow Removal Scenarios

Scenario	Description	Total Estimated Annual Cost	Average Clean-Up Time	Standby Period	Haulage Source
1a	4-Month, Full Dedicated Stand-by Removal Contract	\$130.3 M	10 days	4 months	Included in contract
1b	3-Month, Full Dedicated Stand-by Removal Contract	\$106.7 M	10 days	3 months	Included in contract
1c	4-Month, Full Dedicated Stand-by Removal Contract (Longer Clean-up)	\$103.5 M	14 days	4 months	Included in contract
2a	4-Month, Dedicated Stand-by Removal Contract (No Stand-by Haulage)	\$50.1 M	14 days	4 months	City haulage contract
2b	3-Month, Stand-by Removal Contract, Internal Proactive Removal (No Stand-by for Haulage)	\$41.0 M	14 days	3 months	City haulage contract
3	Existing Model With Improvements	\$24 M	14-16 days	4 months	City haulage contract (SURGE)

Note: All scenarios incur additional costs for the proposed 2025/26 improvements that are identified throughout this report.

Each scenario is described in more detail in the following sections, including an overall discussion of viability

Scenario 1a: 4-Month, Full Dedicated Stand-by Removal Contract

Description:

This scenario involves new tendered contracts with four months covered by stand-by each winter, for snow removal (both proactive removal and for major snow events), with all equipment, dump trucks (haulage) and operators on standby from December 1st to March 31st.

Estimated Cost Per Winter Season:

Cleanup: \$35.9 M + Standby: \$94.4 M = = Total: \$130.3 M

Advantages:

- Highest service level and fastest clean-up time for major snow events.
- Reliability of response is maximized, with all required equipment on standby for the full winter season to ensure immediate and consistent mobilization when removal is triggered.
- Having all removal operations delivered under one fully dedicated contract for each contract area allows for greater operational control, consistency, and communication.
- The expanded equipment pool would enable more frequent proactive snow removal throughout the season.

Disadvantages:

- Highest overall annual cost.
- Lowest value for money, as large portions of equipment and operators may remain idle during milder winters or periods of limited accumulation. The fixed cost of 'readiness' remains constant regardless of how often removal operations are required.
- Depot space would be required for all standby equipment, creating significant site capacity, planning, access, and operational challenges.
- Mobilizing large fleets from these depots could create safety issues, congestion, and disruption at the sites and in surrounding neighbourhoods, particularly during back-to-back events when multiple yards and clearing and removal is activated simultaneously.
- Snow disposal sites may experience queuing and congestion when large volumes of trucks arrive at once, extending haulage and turnaround times.
- Possible conflicts between contractors over timing and responsibilities related to snow clearing vs. snow removal, especially during a major snow event.
- Market capacity to respond to a contract of this magnitude may be limited, resulting in reduced competition and higher bid prices.

- Developing, tendering, and administering such a large-scale removal program would require considerable effort from City staff and procurement teams to define expectations, monitor performance, and manage conformance.

Discussion:

This scenario maximizes readiness by placing a large fleet of removal equipment and operators (close to 1000 pieces of equipment) on full-season paid stand-by (dump trucks/haulage included), and targeting an approximately 10-day citywide clean-up. However, the practical constraints are a significant challenge. Standing up, staging, and safely moving such a fleet across multiple yards as conditions escalate is not just complex, it may not be practicable in some districts, or even feasible, given yard space, neighbourhood constraints, and disposal-site throughput.

From a commercial perspective, the market may not be able to respond to the size and certainty this model requires. Packaging full-season, high-capacity bundles can narrow the bidder pool, invites availability risk (particularly for blowers, loaders, and drivers), and pushes stand-by premiums higher. It would also require hundreds of employees and roughly 700 dump trucks on stand-by for several months, who may see little to no actual activation. This approach secures capacity, but that capacity may be used only every two or three years, in the kind of extreme events this model is designed to address. That low utilization profile undermines contractor economics, drives up risk pricing, and creates recruitment and retention challenges for operators who must remain on call without guaranteed work.

Financially, this scenario carries the highest annual cost and the weakest value-for-money in mild winters, because fixed stand-by payments accrue regardless of activation. Even the stated estimate of \$130 million per year likely understates true cost pressure. Vendors would need to recover equipment acquisition, carrying, and maintenance costs, layer in inflation and labour scarcity, and price the risk of under-utilization. Taken together, Scenario 1A delivers maximum theoretical readiness, but it is impractical at scale, difficult for the market to staff reliably, and fiscally inefficient for a multi-year term where extreme events may be infrequent.

Scenario 1b: 3-Month, Full Dedicated Stand-by Removal Contract

Description:

This scenario is similar to Scenario 1a but includes only a 3-month standby period (December 15th to March 15th), to reduce standby costs. This scenario provides the same service level within a shorter dedicated availability window.

Estimated Cost Per Winter Season:

Cleanup: \$35.9 M + Standby: \$70.8 M = Total: \$106.7 M

Advantages:

- This scenario maintains the same high level of snow removal performance and clean-up speed as Scenario 1a.
- Reliability remains high within the contracted period, as equipment, haulage, and operators are fully dedicated and available for immediate deployment during the 3-month window.
- The shorter standby period reduces total standby costs while still maintaining strong readiness for the period of highest snow risk, balancing service performance with fiscal efficiency. Historically, major snow events occur in January to March, which would be covered.
- A single, dedicated contract covering removal operations for the core winter months provides continuity in staffing, communication, and quality control across removal zones.
- Reduced standby duration decreases the scale of storage and depot space required for parked equipment, slightly easing logistical pressure compared to a full-season program.

Disadvantages:

- The contract guarantees coverage for only three months, leaving potential exposure to early- or late-season snow events that fall outside the standby window, which may require ad hoc contracting or delayed response.
- The City would need to provide depot and storage space for the standby fleet, although for a shorter duration than Scenario 1a. This still may create localized congestion and operational challenges when equipment is mobilized from multiple sites simultaneously.
- Other 1a disadvantages would also still apply.

Discussion:

Scenario 1b retains most of the service advantages of Scenario 1a, high readiness, a 10-day average citywide clean-up rate, and haulage capacity on stand-by, but limits the high-intensity readiness period to three months. This window focuses resources on the most critical portion of Toronto's winter season (typically Dec 15th through to March 15th) when the probability of

major storm events is highest. By narrowing the stand-by period, Scenario 1b aims to strike a more practical balance between operational readiness and fiscal responsibility, while still enabling proactive removal in dense corridors and downtown neighborhoods when storage is exhausted.

However, the operational and market realities that challenge Scenario 1a also apply here. Maintaining a fleet of hundreds of operators, loaders, blowers, and more than 700 dump trucks on guaranteed stand-by for a three-month period still presents significant feasibility risks. The market may struggle to assemble and hold that much capacity in reserve, particularly since most contractors will not want to dedicate personnel and equipment to a contract that may be used only a few times in an average season. Many operators depend on steady work throughout the winter, and a structure that pays for availability without frequent activation could drive up rates or deter participation entirely. In short, even at three months, the scale of stand-by demand may exceed what local contractors can reliably provide.

Overall, while Scenario 1b is more affordable than 1a, it still carries many of the same systemic drawbacks, limited market capacity, operational inflexibility, and cost inefficiency for a resource-intensive model that may only be fully activated once every few years. It provides strong assurance but at a high premium and with practical constraints that make it an unattractive choice.

Scenario 1c: 4-Month, Full Dedicated Stand-by Removal Contract (Longer Clean-up)

Description:

This scenario involves a 4-month standby arrangement similar to Scenario 1a, but with a reduced clean-up rate for major snow events of approximately 14 days instead of 10 days.

Estimated Cost Per Winter Season:

Cleanup: \$35.9 M + Standby: \$67.6 M = Total: \$103.5 M

Advantages:

- Maintains reliability and staff/equipment availability through the season.
- Lower standby costs than Scenario 1a.
- Supports proactive snow removal operations.

Disadvantages:

- Slower clean-up time after a major snow event than Scenarios 1a and 1b.
- Similar market, cost, and coordination challenges to Scenario 1a.

Discussion:

Scenario 1c reduces the overall clean-up rate to an average of 14 days while maintaining a four-month stand-by period. This has a moderate cost relative to 1a and 1b but still demands the logistics of mobilizing a large, fixed fleet, hundreds of operators, heavy equipment, and haulage trucks, and the accompanying need for storage yards, staging space, and disposal-site traffic management.

While 1c improves the value equation compared with 1a, the model remains operationally cumbersome and financially rigid. Maintaining an extensive fleet on long-term stand-by continues to lock the City into substantial fixed costs, regardless of winter severity, and the procurement scale may exceed what the market can feasibly deliver for a four-month window. Contractors would face similar staffing and equipment-retention issues, and the City would inherit the same administrative and performance-monitoring challenges as in 1a and 1b.

Scenario 2a: 4-Month, Dedicated Stand-by Removal Contract (No Stand-by for Haulage)

Description:

This scenario involves a new tendered contract for a 4-month standby period excluding haulage, which would instead be supplied under the City's existing haulage contract and internal surge capacity. The clean up time for a major snow event would be approximately 14 days, similar to 1c.

Estimated Cost Per Winter Season:

Cleanup: \$30.4 M + Standby: \$19.7 M = = Total: \$52.5 M

Advantages:

- This scenario provides a moderate removal rate while significantly reducing standby costs, since the contract excludes haulage.
- Dedicated removal contractors and equipment remain on standby throughout the core winter period, ensuring readiness to respond quickly when removal is triggered.
- This approach allows flexibility to leverage the City's existing haulage program. May reduce duplication of contracts, since haulage would be coordinated separately under defined roles.
- The reduced standby duration and scope lower overall financial risk while still providing strong operational performance.

Disadvantages:

- Truck availability under the City haulage contract is not guaranteed, as it is not a standby arrangement.
- Snow removal operations could be constrained if haulage becomes the process bottleneck, limiting the overall removal rate when truck availability does not meet operational demand.

Discussion:

Scenario 2a maintains high readiness by placing dedicated removal crews and equipment (loaders, blowers, and supervisors) on a four-month stand-by, while leveraging the City's separate haulage program to supply dump trucks and a potential for surge capacity coming from internal sources. This model achieves a strong balance of readiness, flexibility, and cost control, enabling a consistent 14-day citywide clean-up rate without the heavy fixed burden of keeping hundreds of trucks and operators idle all winter. It does however still have significant stand-by costs that may not offer best value for money.

By not tying 700 dump trucks with operators to paid stand-by contracts, the City avoids major logistical and financial pressures, such as securing additional yard space, managing idle fleets, and administering complex contractor scheduling. Instead, Scenario 2a allows the City to right-size truck deployment each event/shift based on actual storm conditions, zone priorities, and disposal site throughput. This flexibility ensures that resources are used efficiently and proportionally to need, not forecasted worst-case conditions. It also provides more equitable coverage across zones, since haulage can be shifted dynamically to where snow storage and accessibility pressures are most acute.

The main trade-off is the risk of truck shortages on high-demand events, particularly when storms coincide with other City operations competing for the same fleet, or when private haulage capacity is constrained. However, this risk can be mitigated through a structured surge capacity program that draws on both internal and external resources. Internally, the City can pre-identify available trucks and staff from other divisions (e.g., Solid Waste, Parks, or Water), ensuring priority access during declared snow events. Externally, a "call-up list" of pre-qualified contractors willing to respond during storm events but not paid for full-time stand-by, can be established to provide surge coverage. This approach ensures that extra capacity is available when needed, without locking the City into high fixed costs for rarely used resources.

Scenario 2a also requires tight coordination between the removal contractor, the City's clearing contractor, and the City's haulage provider to avoid inefficiencies such as idle loaders or empty truck queues.

Overall, Scenario 2a offers a practical and flexible approach that aligns with the City's operational realities and infrastructure limitations. It eliminates the need for large, fixed standby fleets, reduces pressure on yards and staging areas, and positions the City to scale up intelligently through a surge-capacity model when extreme conditions arise. This structure improves balance of cost, efficiency, and resilience, making it a more operationally realistic and sustainable near-term option for Toronto's snow removal strategy.

Scenario 2b: 3-Month, Stand-by Removal Contract, Internal Proactive Removal (No Stand-by for Haulage)

Description:

This would be a new snow removal contract tendered with three months of stand-by coverage, and an approximate 14 day clean up after a major snow event. Haulage would continue to be supplied under the City's existing haulage contract and internal surge capacity. Internal staff would support Fly Squads (trouble shooting teams) and proactive snow removal.

Estimated Cost Per Winter Season:

Cleanup: \$27.9 M + Standby: \$13.1 M = = Total: \$41.0 M

Advantages:

- Lowest overall cost of new contract scenarios.
- Better optimization of cost versus risk.
- Addresses compliance challenges with operator driving-hour limits during consecutive storms.

Disadvantages:

- Shorter guaranteed coverage period and slower clean-up than higher-cost scenarios.
- Dump truck availability not guaranteed under City haulage contract.
- Potential for unclear safety and accountability responsibilities when one contractor directs another without a defined subcontract relationship, which can also cause timing and oversight challenges between contract holders.

Discussion:

Scenario 2b combines a three-month stand-by window with a moderate 14-day removal rate, relying on the City's haulage program to supply trucks and City crews to carry out the function of Fly Squads.. This model offers the lowest cost of the new contract scenarios, placing readiness where it counts most, during the peak winter months and in the highest-risk

corridors such as downtown, transit routes, and dense residential zones. By limiting stand-by to the most critical period, Scenario 2b focuses resources on the months with the greatest probability of back-to-back storm events while avoiding the high fixed costs and staffing burdens of full-season coverage.

Operationally, Scenario 2b has similar benefits and drawbacks to Scenario 2a. The trade-offs include lower guaranteed throughput during extended storm sequences, and shorter coverage windows that may require supplemental activation if major events occur outside the stand-by period. Like Scenario 2a, the main trade-off is the risk of truck shortages on high-demand events.

Scenario 3: Existing Model With Improvements Until 2029 – New RFP with All Services Included

Description:

This scenario involves continuation of the current contractor arrangement, with numerous improvements and additional resources secured internally and through the contract-negotiated additions for equipment and staffing, and assumes a 14 to 16 day clean up rate. Haulage would continue to be supplied under the City's existing haulage contract.

There are many changes and improvements to the City's response to a major snow event that are being carried out throughout the remainder of the year and into 2026/27. Many of these improvements are described in this report, as well as other improvements that are being initiated by Transportation Services staff. Areas that will have a positive effect on snow removal include developing and implementing an MSERP and Proactive Snow Removal during average snow event, expanding the City's Surge capacity, an improved Towing Framework, strengthened Real Time Monitoring, increased internal fleet and 24/7 repair services, and a completely revamped and improved Communication Strategy that clearly distinguishes between routine and emergency communication tactics.

Estimated Cost Per Winter Season:

Cleanup: \$21.0 M + Standby: \$3.0 M = Total: \$24.0 M

There would be marginal increases for staffing, and additional equipment internally and from the existing contractor. This can primarily be accommodated within the City's current winter maintenance budget.

Advantages:

- Least cost option that does not require a large upfront increase to the operating budget in 2026.
- Least disruptive option, building on existing contracts and resources.
- Balances cost and risk effectively, offering good value for money.
- Simplifies coordination by maintaining a single lead contractor in each zone.
- Lower standby costs since many resources are already retained for winter operations.
- No coordination required between clearing contractor and removal contractor. This also eliminates the competing 'constructor' issue.
- Allows for a more fulsome review of the contract as a whole prior to issuing to the market at the end of the current contract term in 2029.
- Allows for the current improvements to take root, and for staff to test/learn from them before committing to another long-term contract.
- City not committed to a long term separate removal contract before understanding the nature of the implications of concurrent snow clearing and snow removal.

Disadvantages:

- May face timing and capacity challenges during back-to-back storms, as the same operators perform both clearing and removal work and are subject to legislated maximum driving hours and required rest periods.
- Dependence on the same contractor resources for clearing and removal may reduce responsiveness when managing and resourcing additional work.
- Truck availability under the City haulage contract is not guaranteed, as it is not a standby arrangement.
- Snow removal operations could be constrained if haulage becomes the process bottleneck, limiting the overall removal rate when truck availability does not meet operational demand.

Discussion:

Scenario 3 builds on the City's current winter maintenance program by negotiating additional snow removal capacity and higher performance expectations within the framework of the existing maintenance contracts, while continuing to use the City's contracted haulage program. This option represents a short-term bridge model, not the final destination, but one that is both realistic and immediately actionable for the Winter 2025/26 season.

Its greatest advantage lies in its simplicity and speed of implementation. It also allows staff to learn what dedicated and proactive snow removal process may look like and how it can be better integrated in the snow clearing operation. Because the existing contractors already have

the necessary infrastructure, supervisors, and local knowledge, the City can expand removal responsibilities within current agreements rather than undertaking a full new procurement, which would take months and face significant market constraints. New multi-year contracts requiring dedicated equipment could not feasibly be tendered, awarded, and mobilized in time for the upcoming winter, nor could contractors acquire and staff new fleets on such short notice. Scenario 3 avoids that problem entirely, leveraging the resources already in place to achieve measurable improvement this season.

Operationally, keeping both clearing and removal under the same prime contractor simplifies field coordination and eliminates 'constructor' overlap or role confusion between vendors. It provides a single chain of command, ensuring plowing, salting, and removal are sequenced smoothly and reported consistently. This would then be put out to the market for 2029 and beyond with streamlined language and service levels that integrates the task of snow clearing and snow removal more effectively.

However, as we learned in February 2025, the trade-offs are clear, because the same staff and equipment must serve both clearing and removal, back-to-back storm events could stretch available resources. Operators are subject to legislated hours-of-service and rest requirements, and removal may lag when plowing must continue. These are manageable constraints, but they underscore that Scenario 3 is a transitional measure, a way to build readiness and coordination experience while longer-term solutions are being developed.

If the 2025/26 implementation proves successful, Scenario 3 could form the basis for the remaining contract term through 2029 by formalizing the negotiated adjustments, standardizing expectations, and improving data-driven performance monitoring. It provides the City with a manageable, cost-effective bridge that delivers real operational improvement now, while buying the time required to design and procure the more advanced model that will define Toronto's next generation of winter maintenance contracts.

4.2.3. Conclusion

The analysis of the snow removal scenarios has clarified both the short-term path forward and the longer-term opportunity to modernize Toronto's entire winter maintenance contracting model. For the upcoming 2025/26 season, Scenario 3 is the most practical and likely the only achievable solution, as it can be implemented quickly by expanding the scope and performance expectations of the City's existing contractors. It leverages existing contractors, equipment, and supervision structures, minimizing the administrative and procurement lead times that would make other options impossible to implement before the upcoming winter. It

provides an immediate bridge that strengthens operational coordination, enables more proactive removal in dense corridors, and establishes the foundation for the development of new service standards and management tools. Over the next three years, this approach will allow the City to gather valuable performance data, refine supervision practices, and test new surge and towing protocols under the framework of the Major Snow Event Response Plan.

However, the City's ultimate goal should not be to simply adjust or extend the current contracting model, but to use this transition period to inform a complete redesign of Toronto's winter maintenance program for the 2029/30 season. The review and workshops with City staff have clearly shown that the separation between plowing, salting, and snow removal functions could create inefficiencies, competing priorities, and fragmented accountability during major snow events. A new integrated model, combining all three functions under unified contracts for each zone, would promote clearer accountability, improve sequencing, and ensure resources are deployed holistically to restore mobility and accessibility more efficiently after a storm.

Under a potential new model, the City could be divided into approximately 9 – 15 zones, each serviced by a prime contractor responsible for all aspects of winter maintenance within their boundaries. Contractors would manage plowing, salting, and have adequate dedicated equipment and resources for snow removal and be coordinated directly with City staff through the EOC structure during declared major snow events. This would streamline communication, align priorities between clearing and removal, and provide flexibility to redeploy resources as conditions evolve.

To improve competition and resilience, the City could limit how many zones a single entity could win, ensuring a more diverse vendor pool and broadening equipment and labour availability city-wide. This structure would also reduce the risk of over-reliance on a small number of large firms and promote innovation through healthy market participation. Mid-sized firms could bid on localized zones, encouraging more balanced geographic coverage and more agile service delivery during severe conditions.

The three-year period between now and the 2029 procurement provides the City with a rare opportunity to test key elements of this new model under real-world conditions. Through the 2025/26 to 2028/29 winter seasons, Transportation Services can pilot revised performance measures, new communications protocols, and data-driven reporting tools to inform future contract language. Lessons learned about coordination, supervision, hauling logistics, and surge capacity will form the backbone of the specifications and service levels for the new RFP.

By building on the immediate improvements of Scenario 3 and applying those insights to the design of a fully integrated, zone-based program, Toronto can move from a reactive,

fragmented clearing and removal system to a modern, performance-based model that reflects the realities of urban winter maintenance. The next three years should therefore be viewed not as a stopgap, but as a deliberate development phase leading toward a 2029 winter maintenance program that is efficient, competitive, and fully capable of meeting the expectations of residents and Council during the most demanding winter conditions.

4.2.4. Outstanding Implementation Steps

MVU will continue to lead the development of the Snow Removal Framework in coordination with City staff, with the goal of finalizing and implementing the preferred approach in the early part of the 2025/26 winter season. The focus now shifts from planning to implementation, confirming the selected operating model and preparing the systems, contracts, and training needed for rollout.

The key steps remaining are:

- Confirm the preferred snow removal scenario through Council feedback and senior management direction.
- Support the City in aligning contractual terms, procurement requirements, and operational procedures with the confirmed model, including finalizing removal locations, route maps, depot assignments, and supporting logistics.
- Assist in coordinating City readiness and communication across divisions in advance of the first snow events.
- Devise means for the City to monitor performance through initial removals and early-season operations, to identify and implement any refinements to the framework that might be required.

4.3. Surge Plan

During the February 2025 major snow event, a number of staff were redeployed from Toronto Water (primarily backhoe operators, along with backhoes) and from Solid Waste Management Services (primarily for manual clearing labour). Approximately 50 personnel were redeployed to assist with snow clearing, especially for manual clearing on steps, walkways, and overpasses.

While this cross-divisional support provided meaningful operational relief and was welcomed by Transportation Services, it was arranged on an ad-hoc basis through informal conversations and working relationships. No formal, documented redeployment framework currently exists to guide or scale this kind of assistance during major snow events.

In addition to staffing there is no formal equipment surge plan in place to reach out to the contracting industry to obtain additional equipment (backhoes, loaders, skid steers) or dump trucks.

Recommendation 1C: Develop a Surge Plan and Readiness



Photo Source: Major Snow Event Post Operational Report February 2022

Relates to Core Issue(s):

MSERP & Snow Removal

Timing:

This recommendation is in progress and is expected to take 1-4 months to implement. More information about the status of this implementation can be found in Section 4.3.3.

Description:

In the MSERP workstream, a comprehensive scalable response strategy for major snow events will be defined, including activation triggers, and the need for escalating equipment and staff

redeployment as conditions worsen. The response plan will outline how to scale operations in real time, specifying required resources, timelines, decision thresholds, and coordination roles across City divisions and contracted partners.

This recommendation focuses on developing the operational surge plan itself, detailing exactly how the City will increase capacity during severe conditions. This includes defining levels of response as an event escalates, identifying where additional equipment and personnel will come from, establishing pre-determined staging areas, and setting out how contracted and internal resources will be prioritized and redeployed. Development of the surge plan should also involve close collaboration with Human Resources to address staffing logistics, the skills matrix, redeployment protocols, and clear communication to affected staff. Training programs should be developed and delivered in advance so that all operational and supervisory staff understand their surge roles, decision pathways, and reporting expectations before a major event occurs. The plan should further clarify decision authority, communication channels, and resource tracking mechanisms to ensure the system can flex quickly and predictably under pressure. Developing this surge framework will provide the City with a clear, executable playbook for scaling up operations during a major snow event.

Outputs

Implementation of this recommendation would produce an Operational Surge Plan detailing activation triggers, escalation levels, resource needs, and staffing protocols. It would also result in a trained and ready workforce, with staff who understand their surge roles, reporting lines, and decision pathways.

Lead and Stakeholders:

This recommendation is being led by MVU (as per engagement) with support from Transportation Services (Operations). Other stakeholders include SPEC, Fleet Services, Senior Management (EOC members), Solid Waste, Toronto Water and Procurement.

Risks:

Risks that may be incurred in implementing this recommendation include:

- Reputational: Risk of reputational damage if surge capacity fails during a major snow event. Mitigate by validating the surge plan through drills / mock exercises, engage senior level leadership for commitments to resources and accountabilities.
- Operational: Risk of insufficient or delayed access to additional equipment or crews during peak events. Mitigate by securing standby agreements, pre-identifying resources, and confirming deployment logistics in advance, engage senior level leadership for commitments to resources and accountabilities.

- Safety: Risk of accidents or unsafe conditions due to rushed mobilization or equipment shortages. Mitigate by including training, safety checks, supervision protocols, and clear command structures in the surge plan.
- Compliance / Corporate Liability: Risk of exposure to liability if inadequate surge capacity results in service failure or accidents. Mitigate by documenting surge protocols, ensuring contractual clarity, and implementing training.
- Financial: Risk of higher costs from urgent equipment rentals or overtime during activation. Mitigate by checking industry interest and rates, pre-negotiating rates wherever possible, setting budget contingencies, and monitoring activation costs against thresholds.
- Health: Risk of staff fatigue or burnout during extended surge operations. Mitigate by defining maximum shift lengths, scheduling relief crews, and incorporating wellness considerations into deployment planning and training.

Recommended Steps:

1. Secure Additional Equipment: Define needs and secure access to additional equipment (such as a staff redeployed plan for internal equipment or developing an Expression of Interest for potential contracted equipment, or a hybrid of both). Can include consideration of contingency plans.
2. Secure Additional Crews: Define needs and confirm access to additional staff or contractors (such as a staff redeployment plan or an Expression of Interest for potential contractors, or a hybrid of both).
3. Document Plan: Document the surge plan including instructions for how and where additional crews and equipment will be sourced.
4. Test Scenarios: Develop and test several scenarios including "what-if" drills for equipment shortages, staff redeployment, or extreme weather events (e.g., if 50% of snowplows fail, how would operations scale up?) Identify and implement areas for improvement in the Plan.
5. Confirm Logistics: Confirm all logistics are in place for rapid mobilization.
6. MSERP: Synergize outputs of this workstream with the MSERP.

Resources and Costing:

MVU is working with the City to develop and implement the Surge Plan. Internal implementation costs that would be incurred as major snow events occur and surges are addressed would be absorbed by participating divisions within existing budgets. These internal costs will be tracked for future reporting and refinement. For external resources, such as additional equipment or contracted support, costs will be based on approved markup rates

under contracts. These expenses will be reflected within the overall clean-up costs already identified in the snow removal program estimates.

Ease of Implementation:

Significant changes required, multiple stakeholders involved, prompt timing (1-4 months), higher cost

Benefit:

Significant service enhancement, major efficiency improvement, addresses multiple core issues

4.3.1. Status of Surge Plan Framework Completed to Date

Over the past several months, work to date includes:

- Defining base equipment needs, so that a baseline and sliding scale for surge is identified.
- Defining staffing and skill requirements through the development of a skills matrix.
- Meeting with staff and all engaged winter operations contractors to explore surge equipment options, identify potential improvements, and leverage the innovation and best practices developed through their internal operations. Divisional senior leadership expressed a commitment to recognizing the major snow event as a city-wide emergency and providing resources and focus during a major snow event.
- Extensive engagement across multiple City divisions and partners, including Transportation Services, SPEC, Fleet Services, the Toronto Parking Authority, TTC, Toronto Water, Toronto Police (Parking Enforcement), senior management representatives from the Emergency Operations Centre (EOC), and Procurement.
- Development and validation of activation triggers in the MSERP that will tie into surge activations.

4.3.2. Needs Assessment

Through several workshops with Transportation Service Operations staff and Fleet, MVU has begun to develop the surge needs that the City would require during a major snow event. The team is developing a fulsome list of the equipment that could be used from internal sources along with the associated operators. For example, Toronto Water and Parks have numerous dump trucks, loaders and backhoes that could be made available during a major snow event along with their respective operators. The initial estimates range from 30 to 50 pieces of equipment.

To expand a flexible capacity, Fleet Services have been exploring:

- Re-purposing multi-purpose equipment for sidewalks in a major snow event, such as skid steers.
- Expanding the versatility of fleet to meet a variety of needs in a major snow event, including road equipment that complements, rather than hinders, the sidewalk operations.
- Adding several new sidewalk plows (targeted to arrive in January) with a procurement option of additional plows if their performance is satisfactory.
- Enhancing service contracts and essential parts inventory swiftly so that maintenance can be scaled up as needed when needed.
- Expanding operational hours for fleet garages to a 24-hour schedule when needed.

In addition to the equipment and operators that could be redeployed from internal Divisions, we are also identifying other staffing needs that could augment the response to a major snow event as well as the particular skills that these individuals would need to hit the ground running for the 2025/26 winter season. This overall redeployment plan would also include identifying the required training that these individuals might require to be successful this year and ongoing training for future year's responses.

Some of the individuals and skill sets that have been identified include:

- Staff in Engineering Services or Toronto Water that understand transportation and contract management (including Book 7 – Traffic Management Manual) that could possibly be involved in supervision of contracting crews.
- Staff in various Divisions that understand Maximo (Workorder Management System) and/or Salesforce (Customer Response Management System) to assist patrollers with following up on and responding to 311 Customer Service Requests, as the 311 Blackout period is eliminated.
- Heavy equipment operators and frontline staff from Parks and Solid Waste Management that can assist with operating additional equipment on shifts and drive dump trucks, as well as assist with hand crew work.

In addition to the surge opportunities identified internally, the team has been exploring opportunities to secure equipment and operators externally. This would involve going out to the market with a Request for Interest (RFI) to solicit interest from the local contractors that may have idle or underutilized equipment (loaders, backhoes, skid steers, etc.) or dump trucks that they would be willing to go on a 'call out' list during a major storm event and supply their equipment and operators for a pre-determined rate to assist with snow removal efforts.

4.3.3. Outstanding Implementation Steps

MVU will continue to lead development of the Surge Plan in coordination with City staff, with the goal of finalizing and implementing the preferred approach before the 2025/26 winter season is in full effect. The key steps remaining are:

- Final confirmation of activation triggers, escalation phases, and criteria for initiating surge operations during major snow events.
- In collaboration with divisions, identify and document available internal and external staff, equipment, and contractor resources, including standby or call-out arrangements, based on identified needs.
- Work with Employee Relations to set up consultations with union executives from bargaining units with staff impacted by any proposed redeployments.
- Assist the City in formalizing redeployment procedures for reallocating resources between divisions, including command, dispatch, and reporting protocols. This will include checking alignment of surge activation and communication steps with the broader MSERP framework.
- Assist the City in developing:
 - o A simple system for the City to track surge resource use and costs to support evaluation and future planning.
 - o Testing and refining the Surge Plan during early 2025/26 events to validate performance before full adoption.

4.4. Towing Plan

Parked cars represented a challenge that hindered snow removal operations. In accordance with *Toronto Municipal Code Chapter 950, Section 950-406*, during major snowstorm conditions, parking on designated snow routes is prohibited, with violators subject to fines up to \$200 and potential towing at the owner's expense. During the 2025 major snow event, there were 3,633 tickets issued by Toronto Police Service, but only 74 vehicles were towed. Staff reported ticketing was prioritized over towing, due to operational constraints and a focus on striving to maintain traffic flow. It was also reported that towing numbers were low due to insufficient signage in some locations, and limited availability of towing resources.

Even when parked in accordance with regulations, on-street parking during or after a snowfall prevented plows and removal equipment from operating effectively, especially on streets with parking on both sides. In situations where snow is already stored along the curb or in windrows, the presence of parked cars significantly reduced the maneuvering room available for equipment. This often results in narrower cleared lanes, unplowed curbside sections, and reduced access for emergency vehicles. Parked vehicles became further buried by plowed snow, which also delayed sidewalk and curb clearing, and in some cases, create localized drainage or accessibility issues as windrows hardened and blocked crossings or curb cuts.

A clear operational protocol should be established to pair tow trucks directly with snow removal crews, forming coordinated convoys that open curb lanes fully on the first pass. By linking towing and removal beats in real time, the City can reduce repeated backtracking and better maintain storage capacity for successive snowfalls.

Recommendation 1D: Develop a Towing Plan and Readiness



Photo Source: MVU Site Tour

Relates to Core Issue(s):

MSERP, Snow Removal

Timing:

This recommendation is in progress and is expected to take 1-4 months to implement. More information about the status of this implementation can be found in Section 4.4.3.

Description:

Even with parking bans in effect, plowing and snow removal operations in dense urban streets can be severely slowed by vehicles that remain parked on-street, whether illegally or legally but still obstructing curb-to-curb clearing. This reality forces plow operators and blower crews to navigate around cars, leaving behind windrows that re-freeze, block catch basins, and add unnecessary time and cost to snow removal work.

To address this, the City should secure expanded standby towing capacity for the 2025/26 winter season. The City must also explore arrangements for temporary free parking to support residents who normally rely on permitted on-street parking. Designating municipal lots, Green P garages, or other available spaces during major snow events can encourage voluntary compliance with parking bans and reduce the number of vehicles left in removal zones. Implementation will require close coordination with the Toronto Parking Authority, clear eligibility rules, signage, and resident communications.

In the MSERP workstream, a towing strategy for major snow events will be defined, including activation triggers and logistics. The response plan will specify how to step up towing as the

event progresses, detailing the necessary resources, timelines, and roles. This workstream focuses on the operational readiness of those towing needs that will be defined in the MSERP so that the City is fully equipped to execute on towing when the snow event response plan is triggered.

The towing strategy will be most effective when developed and implemented in tandem with parking recommendations described, so that both systems work in sync to keep roadways clear.

Outputs

Outputs include a clear Towing Strategy outlining activation triggers, towing capacity, roles, and communication protocols, supported by pre-arranged resources and staging areas. Its effectiveness will rely on coordination with the City's parking strategy to keep streets clear during snow events.

Lead and Stakeholders:

This recommendation is being led by MVU (as per engagement) with support from Transportation Services (Operations). Other stakeholders include SPEC, Fleet Services, TPA, TTC, Toronto Police (Parking Enforcement), Senior Management (EOC members) and Procurement.

Risks:

Risks that may be incurred in implementing this recommendation include:

- Reputational: Risk of negative public reaction to towing operations or perceived unfair enforcement. Mitigate by communicating parking restrictions clearly in advance, offering temporary parking options, and emphasizing safety and service benefits.
- Operational: Risk of insufficient towing capacity or coordination breakdown between Parking Enforcement, contractors, and operations crews. Mitigate by securing standby towing agreements, clarifying responsibilities, and testing activation procedures.
- Safety: Risk of unsafe conditions if vehicles obstruct plows, or towing occurs in congested or low-visibility areas. Mitigate by coordinating towing with plowing schedules, enforcing safety zones, and ensuring trained personnel are deployed.
- Compliance / Corporate Liability: Risk of liability claims from vehicle owners due to towing errors or damage. Mitigate by using licensed, insured towing providers in compliance with City contracts, and maintaining clear documentation for all towed vehicles as required.
- Financial: Risk of unplanned towing costs or insufficient budget coverage. Mitigate by estimating towing demand based on prior events, setting budget contingencies, and tracking costs during activations.

Recommended Steps:

1. Confirm towing needs for major snow events and secure access to sufficient towing capacity through existing or new contracts.
2. Finalize contract updates to include explicit “snow event” language, activation procedures, and rate structures.
3. Develop and document the operational protocol for linking towing crews with snow removal operations, ensuring curb lanes are cleared in real time.
4. Define the legal, liability, and communication procedures for towing both illegally and legally parked vehicles during a declared event.
5. Identify and formalize temporary parking options (municipal lots, Green P garages, or alternative sites) to support residents during bans.
6. Coordinate with the Toronto Parking Authority, Parking Enforcement, and towing partners to align activation, communication, and dispatch protocols.
7. Integrate the towing plan within the MSERP framework and train staff and contractors on activation procedures.
8. Monitor towing operations during initial snow removal events to evaluate performance, resolve coordination challenges, and refine the plan.

Resources and Costing:

MVU is working with the City to develop and implement the Towing Plan . In a major snow event, as many as 1,000 vehicles could potentially require towing, with total towing costs ranging from \$200,000 to \$300,000, although this degree of activity (especially in first rolling out the new plan) is unlikely in practice. These costs would be relatively marginal compared to the overall response costs.

For further consideration, the cost to the City of not towing obstructing vehicles can be significantly higher, as parked vehicles delay contractor operations and extend the duration of removal work, significantly increasing contractor response costs.

Ease of Implementation:

Significant changes required, multiple stakeholders involved, prompt timing (1-4 months), higher cost

Benefit:

Significant service enhancement, major efficiency improvement, addresses multiple core issues

4.4.1. Status of Towing Plan Completed to Date

There has been extensive engagement across multiple City divisions and partners including Transportation Services, SPEC, Fleet Services, the Toronto Parking Authority, TTC, and Procurement to discuss towing contracts and capabilities.

Also, several focused discussions have occurred with Toronto Police (Parking Enforcement) on potential solutions and strategies. Here the focus has been on improving coordination, contract alignment, and operational preparedness.

- Parking Enforcement has collaborated with the project team to explore how existing towing contracts can be leveraged to increase capacity during declared snow events.
- Internal and external communication protocols have been emphasized as a pivotal success factor.
- Contract language is being drafted and reviewed, to formally include “snow event” provisions within towing agreements.
- Discussions are underway with tow providers to confirm their interest, available equipment, and hourly rates. This will support the creation of a pre-qualified roster of tow operators for use during major snow events, with an aim to develop a clearer understanding of towing market capacity.

Regarding the development of alternate and preventive on-street parking solutions, consultation and collaboration with TPA was carried out to devise a plan for temporary accommodation of friendly tows or alternate parking during major snow events, to prevent illegally parked cars and help get cars out of the way for removal and clearing. The City has identified priority snow routes, defined activation criteria, and developed procedures for towing and enforcement in coordination with Toronto Police and towing partners. Public communication tools are in place, including Green P app pop-ups, temporary deactivation of parking locations, meter stickers, and messaging across Toronto Parking Authority platforms. Roles across divisions have been clarified, and preliminary cost and logistics assessments are complete. The framework is now aligned with the MSERP for final refinement before the 2025/26 winter season.

4.4.2. Outputs

TPA has developed a City-Declared Snow Event Plan, that outlines coordinated actions to be implemented to ensure public safety, operational efficiency, and clear communication with customers. The draft plan outlines a coordinated approach to managing parking operations during a declared snow event:

- The document outlines designated snow routes across the city where temporary parking bans would be implemented to support effective plowing and snow removal. Mapping and signage approaches have been developed, aligning with winter maintenance priority networks.
- Criteria for declaring a City-wide Snow Event have been drafted, linking activation to forecasted or active conditions that exceed normal operational thresholds.
- The plan identifies the enforcement process for implementing temporary parking bans, including coordination with Toronto Police Parking Enforcement and towing partners. Procedures for staged enforcement, public notice, and escalation have been mapped.
- A Public Notification and Communications approach has been outlined for timely, accessible, and consistent messaging across platforms. This includes:
 - Activation of a digital pop-up message through the Green P app when a snow event is declared.
 - Temporary deactivation of location IDs on designated snow routes to prevent parking during bans.
 - Deployment of meter stickers to notify customers in advance.
 - Coordinated messaging across all TPA digital platforms and City communication channels.
 - Preliminary operational and financial parameters for towing have been developed, including estimated per-tow costs, total potential event costs, and recognition of towing's role in reducing costly operational delays.
 - Roles and responsibilities across Transportation Services, Parking Enforcement, Fleet Services, and Emergency Management have been identified to ensure coordinated activation and decision-making.
 - Coordination protocols and communication processes have been developed and aligned with the City's corporate emergency response framework.

Communication and enforcement tools are being tested and refined in partnership with the TPA to ensure operational readiness for the 2025/26 winter season.

4.4.3. Outstanding Implementation Steps

For towing, remaining steps likely include guiding and assisting the City in:

- Finalizing updated towing contract language to formally define "snow event" provisions, activation procedures, and rate structures.
- Confirming availability, capacity, and pricing of additional tow operators to establish a pre-qualified roster for surge towing during major snow events.

- Developing and documenting clear escalation and communication protocols between Parking Enforcement, Transportation Services, and towing contractors for event activation and coordination.
- Integrating towing workflows into the broader MSERP and training materials.
- Testing communication and coordination procedures through tabletop exercises or the first major snow events to identify operational refinements.

For enabling enhanced parking, the next steps include integrating new parking considerations into the MSERP for implementation and training before the 2025/26 winter season.

5. Other Recommendations

A refined set of recommendations has been developed for improving the City's winter maintenance program. Eleven recommendations have been developed, each with defined actions, ownership, timelines, resource needs, leads, stakeholders, associated risks, and prioritization.

Beyond launching the MSERP, the following sections present the remaining ten recommendations that will continue to build systemwide capacity and resilience, both during a major snow event and in everyday winter operations.

5.1. Recommendation: Refine 311 Protocols for Major Snow Events (Blackouts)

The MVU Winter Review Report found that temporary service request hold periods cause confusion and frustration, particularly for multi-day, multi-storm events. In some cases, residents wanted to report issues from a previous storm event but were unable to because a new storm resulted in another blackout.

The MVU Winter Review Report identified an opportunity related to the temporary service request hold periods that has been refined into Recommendation 2, described in further detail below.

Recommendation 2: Refine 311 Protocols for Major Snow Events

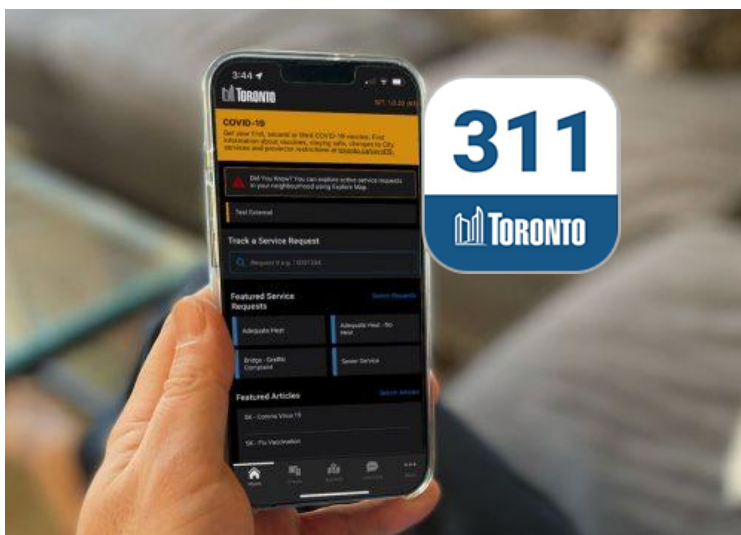


Photo Source: www.toronto.ca

Relates to Core Issue(s):

Communication and Expectations

Timing:

This recommendation should begin soon (this winter season) and is expected to take 1-4 months to implement.

Description:

To reduce public confusion while maintaining control over the influx of service requests during major snow events, the City should consider discontinuing 311 blackout periods and adopting alternative methods to educate the public and channel urgent messages, while managing call volumes.

During major snow events, 311 should remain available to the public, but:

- Snow-related calls or online requests could trigger pre-recorded/pre-filled messages and automated responses that provide needed information and address common questions, without the need to create an SR.
- Internal mechanisms should restrict or defer non-urgent requests, with clarity to the requester.

Internally, operational “quiet zones” should be maintained, where new requests are queued or held while staff remain fully engaged in winter operations rather than responding to individual calls.

This approach preserves the operational benefits of blackout periods, fewer new inputs during peak activity, while eliminating public frustration and confusion caused by the perception that 311 is unavailable.

Outputs

A robust plan to discontinue 311 blackout periods while increasing public education, including internal mechanisms to ensure there is no increase/surge of SRs to operations, while urgent requests are channeled accordingly.

Lead and Stakeholders:

This recommendation is being led by the Customer Experience Division with assistance from an external consultant. Other stakeholders include the Technology Services Division, 311 and SPEC.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Operational: Transportation Services is already taxed fully during winter operations, increasing SRs into the division will increase frustration for both the public and staff, and may not add to any efficiency or response. Processes may not be fully defined; operators are not fully knowledgeable about new processes. Mitigation is a deeply vetted revised process for discouraging non-urgent SRs being created before removing the blackouts, 311 training and effective scripts to inform and educate the caller/requester. Co-develop the revised workflow, updating training materials, and running a simulation before launch.
- Reputational: Misaligned expectations. Mitigation is to ensure scripts are appropriate, suitable, detailed and provide 311 training.
- Safety: Risk of urgent safety-related calls being misclassified or delayed. Mitigate by defining clear escalation rules for urgent service requests and emphasizing them in 311 staff training.

Recommended Steps:

1. Workshops with Transportation and 311 on new process for snow-related calls during snow events, and options on other ways to process urgent reports while minimizing 311 calls. Define & approve overall revised process and journey map.
2. Review and update 311 call menu structure to include a dedicated snow event option.
3. Draft and pre-approve standard pre-recorded snow event messages with clear, plain-language explanations of what is happening and what the process intent and timelines. 45-60 second intro that must be listened to first (cannot bypass hitting '0'). Then, "If we haven't answered your questions, whatever reason will allow them to move forward, stay on the line and an agent will assist you."
4. Configure interactive voice response (IVR) to automatically play event-specific messages for snow-related calls.
5. Define and document deferred request categories for non-urgent snow-related issues. Adjust CRM rules to queue deferred requests without triggering immediate operational response.
6. Train 311 staff on tagging snow-related requests, explaining deferrals to callers, and referencing pre-recorded messages. Striving to limit creation of service requests (SRs). "We won't be following up with you because it is the storm right now". "If this is still a problem in x hours, please call us back".
7. SRs are not reacted to unless coded as 'urgent'.

8. Create a different process for these SRs that are not urgent, in the traditional blackout period, so that the caller can't track progress.
9. Coordinate messaging across all channels (website, social media, Councillor communications, and email alerts) to ensure consistency.
10. Establish an event communications protocol outlining update triggers, responsibilities, and message refresh frequency.
11. Conduct a pre-season simulation then implement at the start of winter and monitor call volumes, listen rates, and public feedback, reporting results post-season.

Resources and Costing:

Staff resources are estimated to require 200-250 hours across all stakeholders (such as time for consultation, templates and documentation, training).

An active consulting assignment is also already underway.

Ease of Implementation:

Moderate changes required, multiple stakeholders, prompt timing (1-4 months), low cost

Benefit:

Moderate service enhancement, moderate efficiency improvement, addresses one core issue

5.2. Recommendation: Improve Communications

The MVU Winter Review Report found several issues related to communications including:

- Communications during the February 2025 storm events were routine and lacked a sense of urgency. Relying on routine, overly optimistic or generic messaging during a severe event can erode public trust and cause confusion.
- Many of the updates that were issued to the public and members of Council during the storm event focussed on effort rather than quality or routes completed rather than results. Communicating the number of rounds of snow clearing provided a false sense of the actual condition of the roads, sidewalks and cycling infrastructure.
- Councillors prefer summaries of key points and progress maps during major snowstorm events. Many Councillors also reported they want more information including a live map, progress to-date, and actions being taken by staff. Furthermore, there was some inconsistency in the messaging, what was included and who it was sent by.

The MVU Winter Review Report included a number of opportunities related to improving communications that have been refined into the following recommendations:

- Recommendation 3A: Communicate Significant Weather Events as Emergencies
- Recommendation 3B: Communicate Results Rather than Effort
- Recommendation 3C Improve Consistency of Councillor Communications

Each of these recommendations are described in further detail.

Recommendation 3A: Communicate Significant Weather Events as Emergencies



Photo Source: 2022-2029 Winter Services Procurement Presentation

Relates to Core Issue(s):

Communication and Expectations

Timing:

This recommendation should begin immediately (before winter) and is expected to take 5-12 months to implement.

Description:

During a major snowstorm event, clear emergency messaging is essential to help residents understand the real risks, changing conditions, and what specific actions they must take to stay safe. While routine winter operations may rely on standard, reassuring service updates ("crews are out plowing, please be patient"), a severe storm with heavy accumulation, blowing snow, and freeze-thaw cycles demands a shift to more direct, proactive emergency communications. This includes using plain language to outline road closures, parking bans, towing, sidewalk hazards, and priority routes. When the public receives timely, unambiguous information about what services are suspended or delayed, they can plan travel, avoid hazards, and reduce unnecessary 311 requests. Strong emergency messaging also helps coordinate resident actions, such as moving parked vehicles or assisting neighbours, which directly supports operations crews working under difficult conditions.

To maintain trust and support effective decision-making during major storms, the City should establish a more direct and robust communications framework that clearly distinguishes between day-to-day updates and the more urgent, transparent messaging needed when a severe snowstorm condition is declared. The City should have clear protocols for how and when this shift happens. Note that this recommendation must be synergized with the Communications Plan in the MSERP (Recommendation 1A).

Outputs

The City would have in hand a Major Snow Event Communications Toolkit consisting of several tangible, ready-to-use components. This would include a communications protocol defining the formal "switch" from routine to emergency messaging and the process for activating it in alignment with the MSERP. It would also include a set of pre-approved plain-language templates for 311 updates, social media, Councillor briefings, media releases, and website alerts, covering parking bans, towing, suspended services, and safety risks. Staff across key divisions would be trained in using these templates and adapting tone and content for different audiences. The toolkit would also include an activation checklist integrated within the MSERP and a post-event debrief framework to review messaging effectiveness after each major storm and continuously refine materials and practices.

Lead and Stakeholders:

This recommendation should be led by SPEC with support from Transportation Services and Emergency Management. Primary stakeholders include SPEC, 311, Operations, Emergency Management and secondary stakeholders include Councillors' Offices, Legal, Mayor's Office and Corporate Leadership.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Reputational: Risk of loss of public trust if messaging is delayed, inconsistent, or overly reassuring during severe events. Mitigate by defining clear activation criteria, pre-approving emergency message templates, and ensuring consistency across all channels and spokespeople.
- Operational: Risk of confusion or mixed messaging between divisions, 311, and SPEC during event escalation. Without early buy-in, the "switch" mechanism may be inconsistently applied, undermining the entire approach. Overly complex criteria for the "switch" leading to hesitation in triggering emergency messaging. Mitigate by aligning the "switch" process with MSERP activation phases and training all communications leads on timing and responsibilities.
- Operational: The ability for SPEC to get real time information so they can translate this into public messaging during a storm. Mitigation is to develop a formal mechanism through the MSERP/EOC to ensure that timely and accurate information is paramount and can be effectively communicated out to all stakeholders and the public.

Recommended Steps:

1. Convene initial workshops with stakeholders including Transportation Operations, SPEC, 311, Emergency Management, to define the "switch" from routine to emergency-style messaging for major snow events, considering alignment with activation phases of the MSERP.
2. Collaboratively develop plain, urgent language templates for 311, social media, Councillor briefings, media releases, and website updates, emphasizing severity, suspended service levels, and safety risks. Pre-draft messaging content that explains operational constraints and limits, using realistic targets for addressing the snow.
3. Train staff from all involved departments in applying the templates, tailoring language for different audiences, and avoiding overly optimistic or generic statements.
4. Build into the MSERP and Communications Plan.
5. After each major event, run a multi-stakeholder communications debrief to identify gaps, refine templates, and strengthen actions for future storms.

Resources and Costing:

Approximately \$1.4 M dollars in operating funds to develop the plan and messaging with external resources. This is already covered in the existing TS operating budget.

Staff resources are estimated to require 500 -600 hours across all stakeholders (such as time for consultation, developing templates and strategy, training, and documentation).

Ease of Implementation:

Moderate changes required, multiple stakeholders involved, moderate timing (within 1 year), low cost

Benefit:

Moderate service enhancement, moderate efficiency improvement, addresses one core issue

Recommendation 3B: Communicate Results Rather than Effort



Photo Source: 2024 Councillor Information Session Presentation

Relates to Core Issue(s):

Communication and Expectations, Reporting Tools

Timing:

This recommendation should begin immediately (this winter season) and is expected to take 1-4 months to implement.

Description:

During or after major snow events, in addition to reporting "first round complete" or "crews working around the clock", the City should communicate other reporting metrics that indicate

quality rather than only effort, communicated through the lens of the public/end user (rather than the City). Extensive data is recorded through patrolling and contractors, which may be utilized for more realistic reporting. For example, reporting might include the following messages:

- Realistic status update (e.g. "We have been there twice, but we may need to return, or the clearing activities are still ongoing").
- Which road classes, sidewalks, or bike lanes are actively being worked on (e.g. "Crews are active on local roads in Ward 5").
- Remaining expected and realistic timelines (e.g. "If weather conditions don't change, sidewalks are estimated to be safe and passable in 24 hours").
- Careful choice of terminology for road classes that will be the most easily understood (e.g. expressways vs. arterials).
- Reminders that multiple passes may be needed, weather conditions can degrade progress, and some roads are prioritized due to criticality, speed, and traffic volume (if applicable).

It should also be noted that the public may perceive "snow clearing" as snow removal. Re-education, re-branding, or shifts in terminology may be considered.

Outputs

A condition-focused reporting framework for both internal and public communication, linked to Recommendation 4: Improved Quality Monitoring. The City would have a clear reporting protocol that helps operations staff consistently capture and interpret condition data and communicate those results in plain, accurate terms. Standardized templates and terminology would be developed for internal coordination, 311 updates, PlowTO, and Councillor briefings, ensuring that all audiences receive consistent, fact-based information. Staff would be trained to use available operational data to explain progress and limitations transparently, supported by pilot-tested message examples and post-event review tools.

Lead and Stakeholders:

This recommendation should be led by SPEC and stakeholders include Transportation Services, Council and 311.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Reputational risk if messaging is not comprehensive. Risk of public backlash if reported results appear inconsistent with observed conditions or are perceived as minimizing problems. Mitigate by using plain, factual language, setting realistic expectations, and testing messages with SPEC and Councillors before release.

- Operational: Risk of staff uncertainty about what data to report or how to describe progress. Mitigate by defining clear reporting standards, training staff on data interpretation, and standardizing terminology across all communication channels, including training.
- Safety: Risk of miscommunication leading residents to assume conditions are safe when they are not. Mitigate by including clear qualifiers and safety reminders in all public updates.
- Compliance / Corporate Liability: Risk of exposure if inaccurate or misleading status reports contribute to unsafe conditions or delayed responses. Mitigate by vetting data sources, requiring supervisory approval for updates, and maintaining a record of reported conditions.

Recommended Steps:

1. Convene multi-stakeholder workshops to discuss what condition information is available (regular winter and during a storm), what's missing, and what the public and Councillors most want to know.
2. Define what to report to whom.
3. Once 'what to report' is defined, develop clear definitions and terminology for reporting that are easy for the public to understand, avoiding technical or misleading terms (e.g., "plowed" when still snow-covered). Include all channels - PlowTO, social media posts, website, media bulletins, etc.
4. Design and test communication templates for the public and Councillors that report observable results or service outcomes, along with caveats and explanations of limitations.
5. Train staff on interpreting available data, applying consistent language, and explaining operational constraints transparently.
6. Pilot new condition-focused reporting in a simulated event or low-risk storm, refine templates and messaging based on feedback.
7. Make adjustments and launch the new reporting.
8. Establish a post-event review process to evaluate how well the communication was received, or if adjustments to language or format are required.
9. In the future, explore use of maps, icons, and status categories that reflect current conditions rather than effort (number of passes or rounds).

Resources and Costing:

No significant operating or capital costs are expected.

Staff resources estimated to require 130-150 hours across all stakeholders, not including

Council workshops, and including time for workshops, developing templates, training and documentation.

Ease of Implementation:

Moderate changes required, multiple stakeholders involved, prompt timing (1-4 months), low cost

Benefit:

Little to no service improvement, moderate efficiency improvement, addresses two core issues

Recommendation 3C: Improve Consistency of Councillor Communications



Photo Source: 2024 Councillor Information Session Presentation

Relates to Core Issue(s):

Communication and Expectations

Timing:

This recommendation should begin immediately (before winter) and is expected to take 1-4 months to implement.

Description:

The City should investigate opportunities for streamlining updates to members of Council into a single concise and timely format that includes, where possible:

- A concise high-level overview, such as "It is actively snowing, and as of 7:00 p.m., 68% of arterial roads, 45% of collector roads, and 12% of local roads city-wide have been treated at least once".
- Icons where suitable, for easier quick scanning
- Still image of a progress dashboard or GIS layer showing progress by ward or road type, even if it's a snapshot from internal systems. Councillors requested this explicitly.
- Added service outcome language, such as "Arterial salting in Toronto East York began at 5:45 p.m. and is expected to restore travel lanes to bare pavement within 4 hours (weather dependent)."

Outputs

This recommendation would produce a standardized Council update format that delivers concise, high-level snow operation information with clear language, key metrics, and simple visuals such as icons and progress maps. A defined workflow and communication protocol would guide who prepares, reviews, and issues updates, supported by automated data inputs from weather, fleet, and 311 systems. A static GIS or dashboard snapshot would provide a visual summary by ward or road type, while a short style guide would ensure consistency in tone and format.

Lead and Stakeholders:

This recommendation should be led by SPEC and stakeholders include Transportation Services, Councillors, and 311.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Reputational: Some Councillors may prefer the previous format. Risk that Councillors view the new format as oversimplified or less informative. Mitigate by involving Councillors early in the design process, testing the new format, and adjusting content based on feedback.
- Operational: Risk of inconsistent or delayed updates if staff roles for preparing and approving communications are unclear. Mitigate by defining a clear workflow, assigning responsibilities, and pre-establishing triggers for updates.

Recommended Steps:

1. Host workshops internal to Transportation Services, with SPEC input, to discuss standard content (City-wide progress %, forecast vs. actual snow, 311 protocols, ops schedule, service outcomes), while considering results of previous Council surveys and SPEC exploration..
2. Set tone/style (concise, plain language, clear visual icons).
3. Standardize email format and structure for all updates.

4. Identify and connect to data sources (weather, 311, GPS fleet tracking, winter ops schedule), and automate data extraction where possible.
5. Figure out GIS/dashboard view capabilities for static progress maps by ward/road type - or PlowTO.
6. Design email template with high-level summary first, icons for quick scanning, embedded map snapshot.
7. Establish workflow for drafting, reviewing, and sending updates (responsible staff, timing, triggers).
8. Pilot the new format in mock scenario and adjust based on councillor feedback.
9. Rollout templates and provide training.

Resources and Costing:

No significant operating or capital costs are expected.

Staff resources are estimated to require approximately 100 hours plus Councillor feedback time (including time for consultation, developing templates, training, and monitoring success).

Ease of Implementation:

Minor changes required, few stakeholders involved, prompt timing (1-4 months), low cost

Benefit:

Moderate service enhancement, minor efficiency improvement, addresses one core issue

5.3. Recommendation: Improve Quality Monitoring

The MVU Winter Review Report found that current monitoring does not always collect, connect, or report the quality data required to hold providers accountable, to confirm that service standards are being met, or to demonstrate a quality service to the public.

Accurate real-time monitoring and condition verification are essential to closing the long-standing gap between effort-based reporting and actual outcomes on the ground. The City's investment in AVL and GPS technologies has been valuable for tracking where plows travel and when beats are logged as complete. However, as the February 2025 storm demonstrated, this only verifies that equipment made a pass, not that the road, sidewalk, or bike lane is actually clear, safe, and passable.

The MVU Winter Review Report included opportunities related to quality monitoring and patroller reporting that have been refined into the Recommendation 4, described in further detail.

Recommendation 4: Improve Quality Monitoring, Tools, and Deficiency Reporting



Photo Source: Status Update Major Snow Event February 16, 2025 Presentation

Relates to Core Issue(s):

Communication and Expectations, Reporting Tools

Timing:

This recommendation should begin soon (this winter season). Although short-term options

may be implemented in a few months, the long-term solution for improving quality monitoring is likely to take two to three years.

Description:

The City should enhance its monitoring to include direct condition validation, built from existing tools and data wherever possible, and enhanced by new technology when needed. Patrollers should be equipped with processes and user-friendly tools that allow them to collect and submit condition observations of each road segment travelled. Innovations may include photo-verified reports, voice logging, or geo-tagged condition ratings/notes on barriers such as parked cars, drifting, or reburial (like 'dropping a pin' on a digital map). These inputs should flow into a centralized repository or dashboard linked to AVL and contractor reports so that supervisors see not just what routes were driven but whether the clearing standard was achieved.

These types of projects can take many years to perfect and implement, but there may be minor modifications to current systems or off the shelf products that can be purchased and their implementation prioritized to ensure their availability for the 2025/26 winter season.

The City should also review the workforce model for road condition patrolling and service request investigation to ensure both functions are adequately staffed and consistently delivered, without one drawing resources away from the other.

The City should ensure that all quality data collected through patrols, sensors, and service requests is actively analyzed and trended to identify emerging patterns, recurring problem areas, and localized issues that may be overlooked or require immediate attention. Data should not only be gathered but routinely interpreted and acted upon to inform operational decisions, prioritize responses, and support continuous improvement in winter maintenance performance.

Outputs

Implementing this recommendation would produce an upgraded condition monitoring system with patroller tools for real-time field validation and centralized visibility of road conditions. It would establish a Data Analysis and Action Framework with standardized protocols for reviewing and trending patrol, sensor, and service request data, supported by dashboards highlighting recurring issues and localized problems. Clear escalation triggers and regular trend summaries would enable faster operational responses and data-driven planning, ensuring information collected in the field is consistently analyzed and used to improve performance.

Lead and Stakeholders:

This task may be led internally by Transportation Service (Operations) or by a consultant, and

stakeholders include Operations and Technology Services Division.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Operational Risk: New/modified tools or processes may reduce efficiency or may not integrate effectively with existing systems (e.g., AVL, Maximo), reducing usability or creating duplicate workflows. Mitigation includes conducting integration testing before rollout, engaging the Technology Services Division early, aligning tool selection with existing data architecture, and staying aligned with the overall goal to increase quality awareness (not add process or systems).
- Financial Risk: Technology costs could rise if off-the-shelf tools require customization or new licenses. Mitigation includes starting with pilot programs and prioritizing scalable, configurable tools over custom builds.
- Compliance Risk: Inconsistent or incomplete condition reporting could weaken documentation required under the Minimum Maintenance Standards (MMS). Mitigation includes training patrollers on data capture expectations and standardizing reporting templates to ensure MMS alignment.

Recommended Steps:

1. Starting with first principles, hold a workshop with key stakeholders to re-confirm what the goals and challenges are (contract management versus quality management versus compliance to MMS). This includes discussion of collecting the right information on how the service is perceived by the public.
2. Review all current data sources (AVL, patrol logs, contractor updates, weather feeds) to understand what each can and cannot reliably show about actual road, sidewalk, and bike lane conditions. Explore short- and longer-term options to capture data for metrics most suited for reporting.
3. Convene a workshop with operations, patrol staff, 311, GIS/data teams, Technology Services Division, SPEC, and contractors to identify ways to better capture and share live condition information using existing AVL, GPS, and Maximo tools. Include demonstrations of current patrol workflows and technology to pinpoint underused features and quick wins for the upcoming winter season. Brainstorm long-term options such as voice-to-text logging, mobile app pin drops, photo capture, and integration of patrol observations with AVL traces for real-time dashboards.
4. Discuss potential pilots that can be implemented immediately using current equipment, alongside longer-term opportunities such as AI-based image recognition and automated condition monitoring.

5. Document and prioritize the most feasible short-term and long-term solutions, with clear next steps for testing and implementation.
6. Integrate solutions with Patroller Reports.

Resources and Costing:

Staff resources estimated to require 500 hours across all stakeholders (such as time for consultation, research, pilots, procurement, documentation, and training). Staff resources to enhance the patrolling and investigation of service requests is not included. Additional capital investments in new tools or technology may also be incurred, depending on the results of the exploration. An active consulting assignment is also already underway.

Ease of Implementation:

Moderate changes required, multiple stakeholders involved, extended timing (more than 1 year), may involve higher costs depending on tools.

Benefit:

Significant service enhancement, major efficiency improvement and addresses two core issues

5.4. Recommendation: Improve Current Contracts

The MVU Winter Review Report found that the City's performance-based winter maintenance contracts are built to deliver efficient plowing and salting for routine storms but are less effective at addressing the unique demands of multiple major storms in rapid succession. The contracts lack specified snow removal resources and have no contractual obligation for stand-by capacity. These issues are largely addressed through a separate snow removal contract (Recommendation #1B) and improvements to future winter maintenance contracts (Recommendation #6). However, there are some improvements that can be negotiated with the current contracts.

The MVU Winter Review Report included a number of opportunities related to the current contracts that have been refined into Recommendation 5, described in further detail.

Recommendation 5: Negotiate Improvements with Current Contracts



Photo Source: 2024 Councillor Information Session Presentation

Relates to Core Issue(s):

Contract Design

Timing:

This recommendation should begin immediately (before winter) and is expected to take 1-4 months to implement.

Description:

Transportation Services has developed a listing of minor improvement areas that they feel need adjusting in the current performance contracts. They should proceed to begin to negotiate improvements with the current winter maintenance contracts where it is feasible and makes financial sense.

Outputs

The output of implementing this recommendation is an updated set of winter maintenance contracts reflecting negotiated improvements and adjustments.

Lead and Stakeholders:

This recommendation should be led by Transportation Services (Operations) and stakeholders include Contract Management, Legal and the Contractors.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Operational Risk: Contractors may resist or delay agreeing to changes, limiting the City's ability to implement improvements before winter. Contractors may be unwilling or unable to make the requested changes. Mitigation includes prioritizing feasible adjustments, maintaining open communication, and leveraging contractual performance incentives where applicable.
- Financial Risk: Negotiated amendments could result in higher pricing or claims for additional compensation. Mitigation includes conducting cost-benefit analysis before negotiations and pursuing cost-neutral adjustments whenever possible.
- Reputational Risk: Perception that the City cannot effectively influence or manage its contractors if negotiations stall or fail. Mitigation includes documenting all negotiation efforts, communicating rationale for any deferred changes, and highlighting successfully implemented improvements.
- Corporate Liability Risk: Ambiguous or informal agreements with contractors could create disputes or liability if performance expectations are unclear. Mid-contract changes made without formal amendments could breach procurement or legal requirements. Mitigation includes full collaboration with legal and purchasing divisions, maintaining formal records of all negotiated changes, updating internal contract management systems, and confirming mutual understanding in writing.

Recommended Steps:

1. Review the existing list of minor improvement areas identified by Transportation Services, plus any additional staff suggestions.
2. Prioritize improvements based on feasibility, operational benefit, and financial impact.
3. Engage contract management and legal teams to prepare negotiation positions.
4. Meet with each contractor to present proposed changes and explore willingness to adopt adjustments mid-contract.
5. Identify quick wins that can be implemented without contract amendments (e.g., clarifications, operational tweaks).

6. For changes requiring amendments, negotiate terms and confirm pricing or cost-neutral arrangements.
7. Document all agreed improvements and update internal contract management records.
8. Monitor the impact of implemented improvements and capture lessons learned for future contract drafting.

Resources and Costing:

Staff resources estimated to require 190 hours across all stakeholders (such as time for internal meetings, contractor meetings and negotiations, document updates, monitoring success).

Additional costs through the contracts are possible depending on the magnitude/scope of the negotiated changes.

Ease of Implementation:

Moderate changes required, negotiations with multiple Contractors, prompt timing (1-4 months), moderate costs anticipated

Benefit:

Moderate service enhancement, moderate efficiency improvement, addresses one core issue

5.5. Recommendation: Identify and Prepare for Improvements for Future Contracts

The MVU Winter Review Report presented a number of findings with regards to the current winter maintenance contracts, including:

- The City's performance-based winter maintenance contracts are built to deliver efficient plowing and salting for routine storms but are less effective at addressing the unique demands of multiple major storms in rapid succession. The contracts lack specified snow removal resources, and have no contractual obligation for stand-by capacity for removal. This left gaps in accountability and hindered the City's ability to direct additional trucks, operators, or haulage when right-of-way storage was exhausted.
- The previous RFPs did not prevent vendors from bidding on multiple areas, so the resulting 11 contracts involve only five vendors, and three of those five are intertwined in a joint venture, further limiting capacities. This has resulted in an overreliance on a small number of vendors and has exacerbated staffing, equipment and other resource availability issues.
- Under the existing contracts, contractors are responsible for determining the required equipment to complete the required servicing. This was a decision made to encourage innovation. However, it has resulted in a lack of control by the City with regards to equipment selection. A more balanced approach whereby the contract specifies equipment types may be preferable.
- Under the current performance-based model, contractors propose their own routing strategies, which has limited the City's ability to influence service allocation, respond to operational issues, or prioritize critical infrastructure such as transit stops, school zones, and accessibility routes.
- New contracts should consider the inclusion of a robust snow removal operation that could restore the City back to functional within 10 to 14 days balancing risk and financial implications.

The MVU Winter Review Report included a number of opportunities related to improvements for the new contracts that have been refined into Recommendation 6, described in the further detail in the following pages.

Recommendation 6: Identify and Prepare Improvements for Future Contracts



Photo Source: 2024 Councillor Information Session Presentation

Relates to Core Issue(s):

Contract Design, Snow Removal

Timing:

This recommendation should begin later (2026+) and is expected to take more than one year to implement.

Description:

The City should begin identifying and preparing for improvements to future winter maintenance contracts well in advance. These improvements should include, but not be limited to:

- Limit the number of Contracts one contractor may bid on / be awarded
- Identify type and amount of equipment
- Provide more input on routes and beats and priorities
- Inclusion of snow removal

Outputs

The output of this recommendation is expected to include new winter maintenance contract documents reflecting updated requirements.

Lead and Stakeholders:

This recommendation should be led by Transportation Services (Operations) and stakeholders include Legal and Contract Management.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Operational Risk: Poorly defined or overly restrictive contract requirements could reduce bidder participation or create delivery challenges. Mitigation includes engaging industry stakeholders early, testing draft clauses, and balancing performance requirements with market capacity.
- Financial Risk: Consultant or procurement process costs may exceed estimates, particularly if extensive consultant or legal review is required. Mitigation includes defining a clear project scope, using phased deliverables, and aligning consultant work with internal resources.
- Reputational Risk: Perception of bias or reduced competition if procurement adjustments appear to disadvantage existing contractors, or to return to the former service model with many contractors. Mitigation includes communicating the policy intent clearly, publishing evaluation criteria, and providing debriefs to unsuccessful bidders.
- Corporate Liability Risk: Weak contract language could expose the City to claims for non-performance, disputes, or cost escalation. Contract changes that limit the number of awards per contractor or adjust procurement criteria may face legal or fairness challenges. Mitigation includes conducting legal review of all new terms, documenting rationale for policy changes, ensuring procurement transparency, drafting detailed performance clauses, defining dispute-resolution mechanisms, and maintaining strong contract oversight procedures.

Recommended Steps:

1. Engage a consultant with relevant experience with this type of assignment to lead the development of the new contracts.
2. Host internal workshops to identify contract improvements including, but not limited to, those outlined below.

Limit Number of Contracts Per Contractor:

1. Hold internal policy workshops to define principles for vendor caps and zone size adjustments. Evaluate and map service areas to determine optimal zone size for encouraging medium/small contractor participation.
2. Develop and model scenarios for splitting existing large zones into smaller, more manageable areas.
3. Draft future procurement rules to: Limit the number of zones/contracts a vendor can hold, encourage subcontracting with smaller/local contractors, create pre-qualified vendor pools for peak-event mobilization.

4. Integrate leading practices from other municipalities (Montreal).
5. Establish a process to provide transparent feedback to unsuccessful bidders after each tender.
6. Include new policy requirements in future RFP/RFT documentation and procurement training for staff.

Identify Type and Amount of Equipment:

1. Hold a technical requirements workshop with operations staff to define optimal equipment mix for clearing/salting/removal.
2. Review current contractor-supplied equipment lists to identify gaps or misalignments with service goals. (must be addressed short-term, see Opportunity 16)
3. Develop draft contract specifications that: Define required equipment for specific tasks or infrastructure types, establish clear naming/definitions for equipment categories, set ratios of equipment per infrastructure class (e.g., per lane km or sidewalk km).
4. Explore inclusion of AI-enabled service verification tools (e.g., Rubicon photo & ML-based deficiency flagging).
5. Integrate Vision Zero safety requirements, such as mandatory side guards for large vehicles.
6. Define spare equipment requirements and repair/replacement protocols to ensure continuity of service.
7. Include new requirements in future RFP/RFT documentation.

Provide More Input on Routes and Beats and Priorities:

1. Review current contractor-proposed routing strategies to identify gaps in service to high-priority areas (e.g., transit stops, school zones, accessibility routes, overlap/gap areas mentioned by Vince).
2. Hold cross-departmental workshops with operations, transportation planning, and accessibility teams to define priority locations.
3. Develop City-defined routing and priority templates that can be embedded in future contracts.
4. Draft "direction clauses" allowing the City to adjust routes and beats mid-season in response to operational needs.
5. Create a GIS-based master routing database to track and manage assigned beats and critical infrastructure.
6. Ensure contract language clearly preserves City authority to direct routing changes.
7. Train contract managers and field supervisors on how to monitor and enforce routing requirements.
8. Include new requirements in future RFP/RFT documentation.

Resources and Costing:

Consulting fees of \$300,000 - \$500,000 are estimated for drafting the new contracts.

Staff resources estimated to require 840 hours across all stakeholders (such as time for workshops, drafting terms of reference, internal reviews with procurement, GIS templates and routing).

Ease of Implementation:

Significant changes required, multiple stakeholders, extended timing (more than 1 year), higher cost

Benefit:

Significant service enhancement, major efficiency improvement, addresses two core issues

5.6. Recommendation: Develop and Implement Preventive Winter Parking Compliance Strategies

The MVU Winter Review Report found that plowing and removal operations were often hampered not just by the volume of snowfall, but by the physical limitations of the built environment and parked cars. As snow accumulated through successive events, the limited storage space within the right-of-way became one of the most persistent operational barriers in the winter response.

Legally Parked Vehicles:

Even when parked in accordance with regulations, on-street parking during or after a snowfall prevented plows and removal equipment from operating effectively, especially on streets with parking on both sides. In situations where snow is already stored along the curb or in windrows, the presence of parked cars significantly reduced the maneuvering room available for equipment. This often results in narrower cleared lanes, unplowed curbside sections, and reduced access for emergency vehicles. Parked vehicles became further buried by plowed snow, which also delayed sidewalk and curb clearing, and in some cases, create localized drainage or accessibility issues as windrows hardened and blocked crossings or curb cuts.

Illegally Parked Vehicles:

Vehicles parked in contravention of winter parking rules (such as parking on designated snow routes during a major snowstorm condition) presented direct obstructions. These vehicles caused delays, forced inefficient re-routing, or necessitated towing operations before clearing could proceed.

The MVU Winter Review Report included a number of opportunities related to preventatively managing parked cars that have been refined into the following recommendations:

- Recommendation 7A: Improve Public Notification of Parking Restrictions
- Recommendation 7B: Enhance Parking Bylaws

Each of these recommendations are described in further detail in the following pages. In addition to these recommendations, please note that parked cars are also addressed through the development of a Towing Plan (Recommendation 1D).

Recommendation 7A: Improve Public Notification of Parking Restrictions



Photo Source: Status Update Major Snow Event February 16, 2025 Presentation

Relates to Core Issue(s):

MSERP, Snow Removal

Timing:

This recommendation should begin soon (this winter season) and is expected to take more than one year to implement.

Description:

Transportation Services should explore opportunities for improving public notifications of:

- Snow routes in the winter season and
- Parking bans triggered for snow removal activities.
- This may include:
 - Audit and redesign of parking restriction signage.
 - Leveraging existing signage or notice boards, such as traffic-related digital message boards.
 - The use of an app with push notifications to alert residents of upcoming emergency work and parking bans. This could be a feature built into PlowTO, where residents sign up for alerts.
- Enhancements to PlowTO, the City's website and social media posts. These could display parking ban zones with timeframes, real-time countdowns to two start times, and a 'check my address' lookup tool (the current address reference links to an outdated pdf of alphabetical street segments).
- 311 recordings and scripts that repeat relevant parking ban information.

- Enhancements to Parking Authority processes during a major snow event, to apply decals to ticket machines (to prevent paying for parking in snow routes), to display an overall notice in the parking app about parking restrictions in effect, and potentially an app restriction to pay for parking in zones that are snow routes.

Currently, information is shared across multiple channels including the City's website, 311, social media, and PlowTO, but public awareness and compliance remain inconsistent, particularly in areas where on-street parking is heavily relied upon.

Outputs

The output of this recommendation is expected to include an improved public notification system for snow routes and parking bans, including updated signage, digital communication tools, and enhancements to PlowTO, 311 messaging, and Parking Authority processes.

Lead and Stakeholders:

This recommendation should be led by Transportation Services and stakeholders include TPA, SPEC, GIS and Technology Services Division.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Reputational Risk: Poor or inconsistent public communication during parking bans could lead to frustration, confusion, or loss of trust. Mitigation includes testing message clarity with residents, synchronizing updates across all platforms, and emphasizing transparency in timing and rationale.
- Operational Risk: Failure to align messaging between departments (Transportation, 311, SPEC) may result in contradictory or outdated information. Mitigation includes establishing a centralized communications protocol and ensuring all channels draw from the same verified data source.
- Financial Risk: Development and integration of app features or signage redesign may exceed planned costs or timelines. Mitigation includes phased implementation, clear project scoping, and cost control through pilot-based refinement before citywide rollout.
- Corporate Liability Risk: Inadequate or misleading notifications could result in resident claims related to ticketing, towing, or vehicle damage. Mitigation includes maintaining timestamped records of notifications, verifying legal adequacy of communications, and implementing appeal tracking for enforcement consistency.

Recommended Steps:

1. Signage Audit & Redesign: Conduct field reviews of permanent and temporary winter parking restriction signage across representative neighbourhoods to assess visibility, clarity, and consistency. Host an internal workshop with Transportation Services, Parking

Enforcement, Legal, SPEC, and Accessibility staff to identify pain points and brainstorm enhanced designs, in conformance with Ontario Traffic Manual Book 5. Develop standardized design prototypes and test for comprehension with resident focus groups, including people with visual or cognitive impairments.

2. **Technology Integration & Digital Alerts:** Hold a technical workshop with PlowTO developers, GIS, and SPEC to define requirements for push notifications, address-based lookup, real-time countdowns, and zone-specific maps, with special consideration of existing notification methods. Where feasible, can existing digital boards be used in a major snow event, such as overhead digital message boards on the Gardiner? Are new mobile boards a consideration? (Montreal's rolling ban signage is an example). Prototype and test enhancements with a sample of residents before rollout. Remember to include results of benchmarking review, document transferable practices, and present findings in an options workshop for Toronto.
3. **Multi-Channel Communication Alignment:** Convene a communications planning session with 311, social media teams, and field operations to map out messaging flows before, during, and after snow events. Ensure that web pages, social channels, and 311 scripts are updated simultaneously and link to the same authoritative data source. Include specific features such as alternate parking maps, borough/zone progress tracking, and e-alert signup systems.
4. **Evaluation & City-Wide Rollout:** Host a post-pilot debrief workshop with all stakeholders to review data, lessons learned, and design refinements. Prepare a phased rollout plan with cost estimates, procurement needs (signage, IT), and performance indicators.

Resources and Costing:

A consultant is recommended to complete the signage audit and redesign for an estimated cost of \$250,000. Staff resources estimated to require approximately 590 hours across all stakeholders (such as time for workshops, inventory support, communication planning, and rollout). This doesn't include the staff resources that may be required for public notification during major snow events.

Ease of Implementation:

Significant changes required, multiple stakeholders involved, extended timing (more than 1 year), higher cost

Benefit:

Significant service enhancement, moderate efficiency improvement, addresses two core issues

Recommendation 7B: Enhance Parking Bylaws



Photo Source: Status Update Major Snow Event February 16, 2025 Presentation

Relates to Core Issue(s):

MSERP, Snow Removal

Timing:

This recommendation should begin soon (this winter season) and is expected to take more than one year to implement.

Description:

Bylaws that govern parking and enforcement directly influence the City's ability to clear and remove snow efficiently during major events while maintaining fairness and clear communication with the public. The City should consider enhancing and modernizing its parking rules and bylaws to better balance operational needs, clearing vehicles to support intensive snow clearing and removal, with the practical realities of notifying, accommodating, and considering inconvenience for those who park on-street.

Many of these initiatives are closely aligned with the MSERP (and towing plan) and would support its successful implementation by enabling safe and efficient snow operations when major snow events are declared.

Establish Overnight Parking Bans:

Transportation Services should assess the feasibility of implementing overnight parking bans on designated roads/segments during major snow events to facilitate uninterrupted plowing and snow removal operations. Considerations should include operational planning,

enforcement capacity, the availability of alternative parking opportunities, and public education to ensure awareness and compliance.

Establish Alternate Side Parking:

Transportation Services should explore the feasibility of implementing alternate side parking restrictions on space-constrained streets where parking is normally permitted on both sides, to enable more effective snow removal during major events (or also more effective regular clearing). This approach would allow crews to access both sides of the street in a coordinated manner, improving service levels and reducing the need for repeat visits. Implementation feasibility would require consideration of year-round public education and clear signage, targeted notification activated during snow events (which could include an app or other targeted notices), and the logistical framework needed to inform and accommodate vehicle movements. Effective communication and operational coordination will be important in achieving compliance and minimizing disruption.

Align Parking Bylaws City-wide:

Parking bylaws related to winter maintenance and major snow events remain partially fragmented across former municipal boundaries. The City should undertake a comprehensive review of all existing winter-related parking regulations to identify inconsistencies, eliminate outdated or legacy provisions, and establish a fully harmonized bylaw framework. A unified set of winter parking rules would improve operational clarity, enforcement consistency, and public compliance across all areas of Toronto.

Outputs

The output of this recommendation is expected to include a unified winter parking bylaw and implementation plan to support efficient snow clearing.

Lead and Stakeholders:

This recommendation should be led by Transportation Services and stakeholders include TPA and SPEC.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Reputational Risk: Residents may perceive new parking restrictions as inconvenient or unfair, especially during early implementation. Mitigation includes proactive public education, clear communication of benefits for winter safety and mobility, and early consultation with affected communities.
- Operational Risk: Poor coordination between bylaw changes, enforcement, and snow operations could lead to inconsistent compliance or ineffective snow removal. Mitigation includes collaboration with Toronto Parking Authority and enforcement, synchronizing

bylaw rollout with enforcement planning and ensuring operational staff are trained on the new rules.

- Financial Risk: Costs for signage, public education, and enforcement may exceed projections if implementation requires wider coverage. Mitigation includes phasing implementation by priority zones and integrating communication costs within broader winter operations outreach budgets.
- Corporate Liability Risk: Improperly enforced or inconsistently applied parking restrictions could expose the City to legal or claims risk. Inadequate signage or unclear notifications could result in enforcement challenges or disputes. Mitigation includes collaboration with Toronto Parking Authority and enforcement, documenting enforcement procedures, verifying legal sufficiency of new bylaws, and standardizing enforcement protocols city-wide.

Recommended Steps:

1. Initiation & Discovery: Form cross-department project team, hold discovery workshop, and review findings, recommendations, objectives for change, and other cities' practices.
2. Data & Impact Assessment: Analyze snow event and parking data, map problem areas, and identify streets for restrictions.
3. Option Development: Draft criteria for overnight bans, design alternate side parking protocols, and identify overflow parking options.
4. Stakeholder Engagement: Consult residents and businesses, test operational scenarios, and refine proposals based on feedback.
5. Bylaw Drafting & Harmonization: Draft and review amendments, harmonize winter parking rules, remove outdated provisions, and seek Council approval.
6. Implementation Planning: Finalize enforcement approach, communications, and signage, and train relevant staff.
7. Evaluation: Monitor compliance and performance and refine before city-wide rollout.

Resources and Costing:

A contractor is recommended to supply and install new signage for an estimated cost of \$250,000-\$750,000 (depending on volume and scope of signage changes).

Staff resources are estimated to include approximately 740 hours across all stakeholders (such as time for consultation, research, drafting bylaws, Council reporting, training, rollout, and contractor meetings).

Ease of Implementation:

Significant changes required, multiple stakeholders involved, extended timing (more than 1 year), higher cost

Benefit:

Moderate service enhancement, moderate efficiency improvement, addresses two core issues

5.7. Recommendation: Strategize Improvements and Procure Equipment to Improve Sidewalk Clearing

The MVU Winter Review Report and widely publicized news media found that following the major snow event in February 2025 many sidewalks remained impassable for days. Key issues included:

- Limited snow storage on narrow rights-of-way.
- Unreliable equipment (machines frequently broke down or underperformed).
- When sidewalks were cleared first, but main roads, local streets, and cycling lanes were still being plowed, heavy road plows pushed snow back onto freshly cleared sidewalks.
- Reporting discrepancies resulted in systems showing route completion even when sidewalks were reburied or missed.
- Accessibility challenges, especially for curb ramps and pedestrian crossings.

The MVU Winter Review Report included a number of opportunities related to improving sidewalk clearing that have been refined into the following recommendations:

- Recommendation 8A: Strategize Starting Times for Sidewalk Plowing
- Recommendation 8B: Explore Alternate Opportunities for Sidewalk Clearing Equipment
- Recommendation 8C: Increase Spares for Sidewalk Clearing Equipment

Each of these recommendations are described in further detail.

Recommendation 8A: Strategize Starting Times for Sidewalk Plowing



Photo Source: Status Update Major Snow Event February 16, 2025, Presentation

Relates to Core Issue(s):

MSERP

Timing:

This recommendation should begin soon (this winter season) and is expected to take 1-4 months to implement.

Description:

The City's decision to lower the sidewalk plowing activation threshold from 8 cm to 2 cm reflects a strong commitment to equitable service and accessibility, particularly for seniors, assisted device users, parents with strollers, and others who rely on safe, passable sidewalks as soon as possible. In smaller or moderate storms, this standard works well, crews can keep up, routes are cleared quickly, and sidewalks stay passable with minimal interruption.

However, in large, high-volume storms, especially when multiple snow events arrive back-to-back, this lower threshold can create unintended consequences. When sidewalks are cleared first, but main roads, local streets, and cycling lanes are still being plowed, heavy road plows push snow back onto freshly cleared sidewalks. This refills curb lanes, blocks driveways and bus stops, and buries sidewalk edges with new windrows.

Meanwhile, because sidewalk operators are already dispatched at the first sign of 2 cm, they may reach their maximum allowable operating hours (typically 13 hours under the Highway

Traffic Act and labour regulations) before the storm cycle is fully over. Once they are legally required to take an 8-hour break, there may be no surge crews left to redo sidewalks buried by road plows, leaving pedestrians facing snowed-in routes for hours until crews can legally return.

To address this, the City should maintain the 2 cm threshold for smaller events but adopt a more flexible, dynamic sidewalk clearing strategy for major snow events:

- **Staged Activation:** For large storms (e.g., 15+ cm forecast), align sidewalk clearing with road plowing progress. Deploy sidewalk plows to follow directly behind road plows where possible, preventing fresh windrows from re-burying sidewalks.
- **Split Routes and Priority Zones:** Use split-beat route planning so that sidewalks near transit stops, schools, hospitals, and high-priority pedestrian corridors are cleared first, with less critical areas sequenced to match road clearing completion.
- **Surge Capacity and Staggered Shifts:** Strengthen the pool of standby or on-call sidewalk operators to rotate fresh crews in when initial operators reach the 13-hour legal limit. This ensures follow-up clearing is available if sidewalks are buried again.
- **Integrated Coordination:** Improve cross-team coordination so road, cycling and sidewalk plows operate in sync, supported by real-time updates and a centralized storm operations dashboard.

A more strategic activation approach respects the needs of people with mobility challenges and the real limits of operators and equipment. It avoids wasted passes, repeat burial, and long wait times when operators are forced off shift mid-event. The result is a fairer, more reliable service that keeps sidewalks genuinely passable during extreme weather, not just briefly cleared and then buried again.

Outputs

The output of this recommendation is expected to include a comprehensive sidewalk clearing strategy during major storm events.

Lead and Stakeholders:

This recommendation should be led by Transportation Services (Operations) and stakeholders include the winter maintenance contractors.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- **Reputational Risk:** Residents or accessibility advocates may perceive delayed sidewalk plowing as reduced service priority. Community may feel the City is back to not prioritizing sidewalks. Mitigation includes clearly communicating the rationale for

staged activation, emphasizing improved long-term accessibility and fairness during major events (education campaign, not relying only on messaging during storms).

- **Operational Risk:** Misalignment between road and sidewalk plowing schedules could lead to service inefficiencies or repeated burial. Mitigation includes establishing synchronized plow sequencing, route coordination protocols, and centralized communication during storms.
- **Safety Risk:** Extended time before initial clearing in some areas could create slip and fall hazards for pedestrians. Mitigation includes prioritizing critical routes (schools, transit, hospitals) for early service and deploying surge capacity when conditions worsen.
- **Corporate Liability Risk:** Increased exposure to injury claims from uncleared or re-buried sidewalks. Mitigation includes maintaining detailed service records, compliance to MMS (including significant weather event requirements), documenting response timing, and ensuring clear public communication on service expectations.

Recommended Steps:

1. Collaborate with Contractors and clearly define changes (e.g. during major snow event do not plow sidewalks at 2 cm); define what makes sense so that sidewalks are plowed after roads.
2. Document changes as part of Major Storm SOP.
3. Train staff and Contractors on the updated procedure.
4. Monitor effectiveness of the changes and adjust accordingly.

Resources and Costing:

No significant operating or capital costs are expected.

Staff resources estimated to require 180 hours across all stakeholders (such as time for consultation, contractor meetings, training, and procedural updates).

Ease of Implementation:

Minor changes required, prompt timing (1-4 months), low cost

Benefit:

Significant service enhancement, major efficiency improvement, addresses one core issue

Recommendation 8B: Explore Alternate Opportunities for Sidewalk Clearing Equipment



Photo Source: 2024 Councillor Information Session Presentation

Relates to Core Issue(s):

MSERP

Timing:

This recommendation should begin soon (this winter season) and is expected to take 5-12 months to implement.

Description:

In 2020 when the mechanical sidewalk winter maintenance trial was undertaken, the 42-inch sidewalk plows the City procured were the only sidewalk plow available with dimensions small enough to be used in the City's narrow downtown streets. Transportation Services and Fleet Services staff should work with the Contractors and Vendors to explore if there are any new opportunities on the market for sidewalk equipment that would meet the City's unique needs.

Fleet and Transportation staff are already working on this initiative.

Outputs

The output of this recommendation is expected to include a sustainable, repairable, and efficient sidewalk clearing fleet.

Lead and Stakeholders:

This recommendation is being led by Fleet Services with support from Transportation Services (Operations). Other stakeholders include Procurement.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Operational Risk: New equipment may underperform or fail under Toronto's unique conditions (e.g., heavy accumulation, narrow sidewalks). Difficult to fully test units without real snow events; staged pilot is best but it extends duration of pilot. Mitigation includes structured pilot testing where possible across multiple snow conditions and documenting lessons learned before large-scale procurement.
- Financial Risk: Investment in new or alternative equipment could exceed budget if pilots reveal the need for higher-cost models or additional support equipment. Mitigation includes phasing procurement, setting cost ceilings, and using pilot data to inform full-scale acquisition.
- Reputational Risk: Public or political criticism if pilot results are perceived as another failed trial or continuation of past equipment issues. Mitigation includes transparent reporting of pilot objectives, performance metrics, and corrective actions taken from prior trials.
- Safety Risk: Testing or deploying unproven equipment could create safety hazards for operators or pedestrians. Mitigation includes conducting risk assessments before pilots, ensuring operator training, and maintaining manual fallback options.

Recommended Steps:

1. Consult front line staff, fleet staff, and other stakeholders to review failures from the 2021 pilot and reconfirm operational requirements including size, maneuverability, power, traction, and snow-handling capacity, while documenting last-mile constraints such as narrow widths, encroachments, and obstructions.
2. Explicitly incorporate lessons from the 2021 trial and the February 2025 storm, when sidewalk plows struggled with snow accumulations over 10–15 cm due to lack of power, traction, and frequent hydraulic failures. NOTE that the current units are designed to fail safe (breaking at the attachment or hydraulic level rather than damaging the engine), which protects the asset but limits performance.
3. Structure pilots to go beyond demonstration and include stress testing in multiple snow conditions: light events (<5 cm), moderate (5–10 cm), heavy (10–15 cm), and extreme (>15 cm). Track performance failures, downtime, repair costs, and operator feedback in each condition.
4. Test reliability under extended operation (back-to-back storms), measuring not only unit performance but the cost and time to return failed units to service.

5. Assess cost-effectiveness by combining equipment costs, spare parts, repair labour, and downtime replacement costs with service output (kilometres cleared per hour, equity routes completed).
6. Explore modular or alternate technologies (e.g., tracked units, robotic or remote-controlled options, lighter blowers) that can handle sections current machines fail, and include manual tools as part of a mixed-methods approach.
7. Pilot mixed-method clearing that uses mechanical plows where feasible and targeted manual or alternative equipment on narrow or obstructed segments, comparing time, cost, and safety outcomes to fully mechanized approaches.
8. Deploy phased expansion prioritizing sensitive areas and routes with operational benefits, while preserving budget flexibility to adapt if pilot results indicate higher costs or low reliability.
9. Strengthen equipment reliability with enhanced preventive maintenance and rapid repair protocols, but also capture pilot data on failure rates and component lifespan to inform future procurement specs.
10. Monitor pilot performance with reporting including real-world costs, service benefits, and reliability trade-offs.

Resources and Costing:

Capital cost for new fleet are dependent on the nature of the equipment that is specified.

Staff resources estimated to require 750 hours across all stakeholders (such as time for consultation, reviews, site visits, internal meetings, and procurement).

Ease of Implementation:

Moderate changes required, multiple stakeholders involved, moderate timing (within 1 year), higher cost

Benefit:

Significant service enhancement, moderate efficiency improvement, addresses one core issue

Recommendation 8C: Increase Spares for Sidewalk Clearing Equipment



Photo Source: 2024 Councillor Information Session Presentation

Relates to Core Issue(s):

MSERP

Timing:

This recommendation should begin later (2026+) and is expected to take 5-12 months to implement.

Description:

Transportation Services should consider the procurement of additional spare sidewalk plows. The Fleet Services After Action Report noted that it would be preferable to have more spare units available for Transportation Services. According to the Fleet Service After Action Report, the current spare ratio is about 10% for the sidewalk plows and the industry standard spare ratio is 15-20%.

Additionally, the addition of more spare parts to the sidewalk plow inventory should be explored. Fleet Services reported that approximately \$50,000 of spare parts were added to the inventory last year to prepare for the 2024/25 season. Fleet Services should continue to review lessons learned and add more spare parts as required.

Outputs

The output of this recommendation is expected to include a sustainable, repairable, and reliable sidewalk clearing fleet.

Lead and Stakeholders:

This recommendation is being led by Fleet Services. Stakeholders include Transportation Services (Operations) and Procurement.

Risks:

Risks that may be incurred in implementing this recommendation include:

- Financial Risk: Procurement costs may exceed estimates due to inflation, supply constraints, or vendor lead times. Mitigation includes confirming unit pricing early, staging purchases, and maintaining contingency in capital budgets.
- Operational Risk: Delays in procurement or delivery of new sidewalk plows or parts could limit readiness for the next winter season. Mitigation includes initiating tenders early, coordinating with Fleet and Procurement, and prioritizing critical components with long lead times.
- Reputational Risk: Service disruptions could draw continued public criticism if sidewalk clearing performance does not improve despite investment. Mitigation includes linking spare procurement to measurable performance metrics and communicating progress transparently to Council and residents.

Recommended Steps:

1. Analyze availability trends from the February 2025 storm to show how reduced availability directly impacts route completion, and establish operational thresholds that link unit downtime to reduced levels of service.
2. Compare Toronto's spare ratio with peer cities maintaining 15–20% ratios, document best practices for spare management including deployment strategies and storage capacity and acknowledge Toronto's unique downtown environment that may justify a higher ratio.
3. Determine the optimal number of additional spares to reach a 15–20% ratio and differentiate between spares needed for mechanical failures (e.g. mechanical failures such as hydraulics, 60% of downtime) versus operational incidents (broken parts due to intense use, 40%).
4. Expand inventory of high-priority parts such as hydraulics, tires, and attachments, stock ready-to-install subassemblies like pre-assembled hydraulic systems and compare the current \$50k investment against benchmarked standards. Especially related to the parts that 'fail safe' to protect the overall unit during major accumulation.
5. Prepare specifications, budget, and timelines for additional plows and parts, account for vendor lead times to ensure availability before the 2025/26 season. Stage procurement

to balance immediate needs with the equipment alternatives review (Recommendation 8B).

6. Align spare fleet and parts planning with broader winter operations readiness including snow storage, contractor support, and staffing, and demonstrate how higher spare availability strengthens Toronto's ability to respond to back-to-back or prolonged snow events.
7. Stage investment so that short-term spare units and parts reduce immediate operational risk, while keeping flexibility for long-term equipment changes being assessed.

Resources and Costing:

Tenders would be needed for new sidewalk units to increase fleet complement to include more spares. Cost of new spares estimated at \$600,000 (assuming an additional 6 units at \$100,000 each to bring spares to 20%).

Additional operating cost estimated at \$50,000 - \$75,000 to increase parts inventory and expanded maintenance.

Staff resources estimated to require 250 hours across all stakeholders (such as time for consultation, reviews, meetings, and procurement).

Ease of Implementation:

Minor changes required, moderate timing (within 1 year), higher cost

Benefit:

Significant service enhancement, moderate efficiency improvement, addresses one core issue

5.8. Recommendation: Optimize Winter Maintenance Activities Around Infrastructure

The MVU Winter Review Report found that there is a range of street-level features that require special equipment, specialized routes, and/or manual clearing techniques. These features can be both temporary and permanent, and include permanent patios, transit curb extension platforms, traffic calming infrastructure, poles and posts, retaining walls, fences, gates, and planters, to name a few. While essential to the function and character of the streetscape, their presence, especially in narrow or high-demand areas, can make snow clearing or removal more difficult in storms.

The MVU Winter Review Report included opportunities related to the design and management of temporary and permanent infrastructure that have been refined into the Recommendation 9, described in further detail.

Recommendation 9: Develop Winter Maintenance Best Practices for Infrastructure



Photo Source: https://x.com/TO_Cycling_Ped

Relates to Core Issue(s):

Not directly related to an identified core issue.

Timing:

This recommendation should begin later (2026+) and is expected to take 5-12 months to implement.

Description:

As the City continues to implement more complex infrastructure (e.g. cycle tracks, curb extensions, transit platforms), involvement of operational staff early and often may result in designs that do not pose winter maintenance challenges. This input can enable permanent installations to be maintained effectively during winter, including storms. Operational perspectives can inform key design elements such as snow storage zones, equipment access, and clearance requirements. Formally embedding an operational lens upstream in the design process can lead to infrastructure that performs reliably not only in ideal conditions, but also during the City's most challenging winter weather.

Transportation Services should document best practices and City-specific preferences associated with the design and management of both temporary and permanent infrastructure, as it relates to winter maintenance activities

Outputs

The output of this recommendation is expected to include documented best practices and design guidelines to integrate winter maintenance considerations into infrastructure planning and design.

Lead and Stakeholders:

This recommendation should be led by Transportation Services and stakeholders include Urban Design, Engineering, Solid Waste, TTC and Vision Zero.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Operational Risk: Lack of coordination between design and operations teams could delay construction, winter maintenance or cause avoidable service challenges. Mitigation includes formalizing review checkpoints and requiring operational input and sign-off before finalizing designs.
- Financial Risk: Design revisions or retrofits to accommodate winter maintenance could increase project costs. Mitigation includes integrating winter maintenance review early in design to minimize rework and budget impacts, and documenting service level targets (including maintainability and resilience).
- Reputational Risk: Public dissatisfaction if new infrastructure leads to poor functionality, snow clearing or accessibility issues. Mitigation includes incorporating winter operability standards into design and communicating the City's proactive approach to residents and stakeholders.
- Safety Risk: Poorly designed infrastructure may cause hazards for pedestrians, cyclists, or

maintenance staff during snow events. Mitigation includes embedding safety-focused design criteria and validating them through pilot reviews and staff feedback.

- Compliance Risk: Inadequate consultation could lead to non-compliance with accessibility or Vision Zero standards. Mitigation includes aligning best practices with City accessibility and Vision Zero guidelines and involving the appropriate divisions in review.

Recommended Steps:

1. Interdepartmental Workshop: Convene Transportation, Public Realm, Urban Design, Solid Waste, TTC, other stakeholders to review the current inventory and discuss priorities and procedures related to temporary and permanent infrastructure.
2. Design of Permanent Installations:
 - a) Establish a formal process for involving winter operations staff in the design and construction stages of new right-of-way infrastructure.
 - b) Process map for who gets notified when, debrief after winter, check in on design suitability, municipal benchmarking, etc.
 - c) Hold early design-phase workshops between operations, design, and engineering teams to identify potential winter maintenance challenges.
 - d) Create design review checklists focused on winter maintenance considerations (snow storage zones, equipment access, clearance requirements).
 - e) Require that operational sign-off be obtained before finalizing designs for street-level features.
3. Guidelines: Develop guidelines outlining winter maintenance best practices for permanent installations and seasonal management of temporary installations.
4. Evaluation & Integration: Evaluate results with staff and stakeholders, refine the approach, and update the guidelines as required.

Resources and Costing:

A consultant is recommended to facilitate the best practices compilation, and estimated costs are \$150,000 - \$200,000. Staff resources are estimated to require approximately 550 hours across all stakeholders (such as time for consultation, research, pilot, meetings, and documentation).

Ease of Implementation:

Moderate changes required, multiple stakeholders, moderate timing (within 1 year), moderate cost

Benefit:

Moderate service enhancement, major efficiency improvement, does not directly address core issues

5.9. Recommendation: Increase Capacity of Melting, Snow Depots and Works Yards

The MVU Winter Review Report found that:

- Staff reported that the melters were not used in 2025 as they are at the end of their useful life and one unit was broken down.
- The City operates five snow dump sites that are strategically located to receive, store, and sometimes melt collected snow under controlled conditions. These sites require a significant footprint not only for snow storage but also for safe maneuvering, unloading, and queuing of large trucks, activities that must be supported by the site layout. Two of the sites reached capacity during the February 2025 major snow event, raising concerns about long-term adequacy.
- The winter maintenance depots are facing growing space constraints, safety challenges, and redevelopment pressures that threaten the City's ability to deliver reliable and efficient winter services now and in the future.
- Insufficient storage space at snow dump sites, in combination with inadequate melting equipment, highlight potential risks to timely snow disposal during peak conditions.

The MVU Winter Review Report included a number of opportunities related to the melters, depots and yards that have been refined into the following recommendations:

- **Recommendation 10A:** Conduct a Depot Rationalization and Snow Dump Site Study
- **Recommendation 10B:** Improve Operability and Procure New Melting Technology

Each of these recommendations are described in further detail.

Recommendation 10A: Conduct Depot Rationalization and Snow Dump Site Study



Photo Source: 2024 Councillor Information Session Presentation

Relates to Core Issue(s):

MSERP & Snow Removal

Timing:

This recommendation should begin soon (this winter season) and is expected to take 5-12 months to fully implement.

This recommendation should be completed prior to issuing new winter maintenance contracts.

Description:

Transportation Services should engage a consultant to conduct a winter depot rationalization and snow dump site study to assess current and future operational needs.

Outputs

The output of this recommendation is expected to include a winter depot rationalization and snow dump site study report.

Lead and Stakeholders:

This recommendation should be led by Transportation Services (Operations) and stakeholders include Fleet Services and Create TO (Real Estate Division, Build Toronto, Toronto Port Lands Company).

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Operational Risk: Incomplete or inaccurate data or assumptions on depot and dump site usage could lead to poor recommendations or capacity shortfalls that impact service delivery. Mitigation includes conducting thorough field verification, data validation, requiring strict quality control on deliverables and recommendations, and corroboration with stakeholder interviews to ensure accuracy.
- Financial Risk: Study or implementation costs could exceed projections, especially if property acquisition or site redevelopment is recommended. Mitigation includes defining clear scope boundaries for the study, setting contingency budgets, and phasing implementation.
- Environmental Risk: Expansion or relocation of snow dump sites could raise environmental compliance issues related to runoff, salt, or contaminants. Mitigation includes reviewing and updating Environmental Compliance Approvals (ECAs) and conducting environmental impact assessments early in planning.
- Compliance Risk: Failure to account for zoning, land use, or permitting constraints could delay or invalidate recommendations. Mitigation includes coordinating closely with CREM, Planning, and Legal staff to confirm regulatory requirements.
- Safety Risk: Poorly maintained or undersized dump or depot sites may create traffic or on-site safety hazards. Mitigation includes assessing safety performance at each site and integrating improvements into recommended actions.

Recommended Steps:

1. Needs Assessment: Evaluate current and projected snow removal volumes; depot utilization rates; space needs for fleet, equipment, staff and contractors; and geographic coverage to determine short- and long-term capacity requirements, modelled with and without melters. Take new snow removal impacts into account and check Environmental Compliance Approvals (ECAs).
2. Site Inventory & Condition Review: Document all existing depot and snow dump locations, capacity with and without melters (to establish criticality), operational constraints, layouts, geographic coverage and safety and environmental concerns.
3. Benchmarking: Review snow storage, depot design, and snow melter use in comparable snow cities based on work to date or additional focused research that may include costing and indexed metrics.
4. Gap & Risk Analysis: Identify sites at or near capacity (with and without melters), sites at risk due to redevelopment pressures, areas with insufficient geographic coverage and other risks.
5. Options Development: Explore solutions including expanding existing sites, acquiring new properties, shared-use agreements, vertical storage solutions, seasonal satellite

sites, and investing in more reliable high-capacity snow melters (including lifecycle costs for State of Good Repair) as an alternative or supplement to additional land.

6. Feasibility & Impact Study: Assess each option's operational effectiveness, cost-benefit (including lifecycle costs for melters vs. land), land use compatibility, environmental impact, and alignment with long-term city growth.
7. Implementation Roadmap: Prioritize actions, secure funding, initiate property acquisition, site expansion, or melting technology procurement, and integrate with the City's broader winter maintenance and asset strategies.

Resources and Costing:

A consultant is recommended to complete the combination study, and estimated costs are \$300,000-\$500,000.

Staff resources to support the studies are estimated to require approximately 200 hours across all stakeholders (such as time for consultation, project management, and reporting).

Ease of Implementation:

Moderate changes required, multiple stakeholders involved, moderate timing (within 1 year), higher cost

Benefit:

Moderate service enhancement, major efficiency improvement, addresses two core issues

Recommendation 10B: Improve Operability and Procure New Melting Technology



Photo Source: <https://www.snowsystems.com/equipment-blowers-melters/>

Relates to Core Issue(s):

MSERP & Snow Removal

Timing:

This recommendation should begin soon (this winter season) and is expected to take 5-12 months to implement.

Description:

Transportation Services should explore opportunities related to snow melting equipment to ensure the long-term adequacy of snow removal and disposal operations. Current equipment is aging, in a poor state of repair, costly to operate, and difficult to maintain due to limited availability of contractors and replacement parts. Few melter repair contractors remain active, forcing reliance on local fabrication shops.

To address this, the City should engage a technical trainer for fleet technicians to build in-house repair capacity, with the goal of improving reliability and reducing downtime.

Transportation Services should also investigate long-term solutions, including both the reparability of existing units and the procurement of new melting technologies. Options should include mobile trailer-mounted units for operational flexibility as well as permanent in-ground, natural gas-powered systems. These technologies could improve energy efficiency, reliability, and service continuity. Coordinating this work with the City's procurement division will be

important to secure both immediate maintenance needs and future investment in modern melting infrastructure.

Outputs

The output of this recommendation is expected to include a sustainable, repairable, and efficient snow melting operation that supports uninterrupted snow removal operations and aligns with long-term asset management and climate objectives.

Lead and Stakeholders:

This recommendation should be led by Fleet Services. Stakeholders include Transportation Services.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Operational Risk: Melters may not be functional during major snow events if repairs or replacements are delayed. Mitigation includes conducting early condition assessments, securing spare parts (even if custom), and scheduling preventive maintenance before winter.
- Financial Risk: Procurement or repair costs may exceed estimates due to inflation, supply constraints, customization requirements (may be lack of parts available) or vendor availability. Mitigation includes validating cost assumptions, exploring multiple suppliers, and maintaining contingency funds.
- Environmental Risk: Inefficient or poorly maintained melters may increase fuel use, emissions, or contamination to the natural environment or sewers. Mitigation includes evaluating fuel efficiency and emissions performance criteria as part of procurement specifications.
- Safety Risk: Equipment failure or operator error during melting operations could cause on-site hazards (e.g., burns, fuel leaks, slips). Mitigation includes ensuring regular inspections, operator training, and adherence to health and safety protocols.
- Corporate Liability Risk: Accidents or damage resulting from malfunctioning equipment could lead to claims or legal exposure. Mitigation includes maintaining inspection records, ensuring insurance coverage, and documenting maintenance and operating procedures.

Recommended Steps:

1. For Winter 2025/26: Work with Fleet staff to get existing melters working, procure spare parts, and ensure a mechanic familiar with melters is available on standby and providing technical training for servicing.
2. Optional Condition Assessment: Inspect all existing melters to determine operational status, repair needs, remaining lifecycle needs, and remaining useful life, Repair vs.

Replace Analysis – Evaluate cost, timeline, and operational benefits of repairing current units versus procuring new ones, including consideration of lag times for purchasing.

3. Consider technology alternates – permanent melters, newer technology, leasing/renting, custom, etc. See airport examples.
4. Procurement Planning: If replacement is required, initiate procurement early to account for one-to-two-year lead times, including exploring multiple vendors and technology types.
5. Maintenance & Reliability Program: Establish preventive maintenance schedules, spare parts inventory, and operator training to maximize uptime.

Resources and Costing:

Overall capital cost for new melting technology is estimated at approximately \$4-6M, depending on nature of preferred technology.

In the short term, repair costs, spare inventory, and labour for rehabilitating existing melters estimated at \$200,000 to \$400,000.

Staff resources estimated at approximately 300 hours across all stakeholders (such as time for repairing existing melters as well as research, procurement, and consultation).

Ease of Implementation:

Minor changes required, few stakeholders involved, moderate timing (within 1 year), higher cost

Benefit:

Moderate service enhancement, major efficiency improvement, addresses two core issues

5.10. Recommendation: Establish a Dedicated Winter Services Unit

The MVU Winter Review Report found that when snow clearing, snow removal, contractor oversight, equipment readiness, communications, towing, parking enforcement, transit impacts and 311 all collide at once, Toronto's current structure, where winter is managed as a seasonal add-on within broader divisions, leaves coordination gaps that weaken the overall response.

A dedicated, year-round Winter Services Unit solves this by making winter maintenance someone's full-time, clear accountability, not just an add-on for a few months of the year. Instead of ramping up planning each fall and winding down each spring, the City would have a stable team responsible for planning, managing, monitoring, innovating and continuously improving winter operations every month of the year.

The MVU Winter Review Report identified Recommendation 11: Establish a Dedicated Winter Services Unit, which was refined following the MVU Winter Review Report and is described in further detail.

Recommendation 11: Establish a Dedicated Winter Services Unit



Photo Source: Winter Councillor Debrief Presentation 2023-24

Relates to Core Issue(s):

MSERP, Reporting Tools, Contract Design, Snow Removal, & Communication

Timing:

This recommendation should begin immediately (before winter) and is expected to take 1-4 months to implement.

Description:

Major snow response readiness cannot be treated as a seasonal project. Toronto should establish a dedicated, permanent Winter Operations Planning Unit to serve as the single point of accountability for ensuring that operational readiness, contracts, plans, technology, training, and inter-divisional coordination are maintained year-round.

This unit's responsibilities should include developing the MSERP, updating snow clearing and removal maps, coordinating procurement of specialized equipment and contract services, and organizing joint training exercises with other divisions, contractors, and emergency services. The unit should maintain ownership of monitoring tools and ensure all operators, supervisors, and patrollers are trained to use new reporting systems and technology effectively. This does not necessarily need to be a net new FTE ask, this can be accomplished through re-purposing some positions and looking at an overall re-structuring exercise.

This team would also be responsible for convening post-season after-action reviews, documenting lessons learned, updating public information materials, and briefing Council before each winter season.

Outputs

The output of this recommendation is expected to include the establishment of a permanent Winter Services Unit with a defined mandate, structure, and responsibilities for year-round snow operations planning and coordination.

Lead and Stakeholders:

This recommendation is being led by Transportation Services (Operations). Stakeholders include Human Resources.

Risks & Mitigation:

Risks that may be incurred in implementing this recommendation include:

- Compliance Risk: Breach of collective agreements or procurement rules when reassigning staff or modifying contracts. Mitigation includes involving HR early to confirm compliance with union and procurement frameworks.
- Financial Risk: Underestimated costs related to training, restructuring, or technology upgrades. Mitigation includes detailed cost planning, phased implementation, and use of existing FTE reallocations to control spending where possible.

Recommended Steps:

1. Define Mandate & Scope: Establish the unit's responsibilities, authority, and accountability for all aspects of winter operations, including planning, response, innovation, and continual improvement.
2. Organizational Design: Determine all-season reporting structure(s), staffing model, and skill requirements; identify positions to transition from seasonal roles or other divisions.
3. Resource & Budget Planning: Secure funding, equipment, technology tools, and operational facilities; allocate year-round staffing and training resources.
4. Integration & Coordination: Formalize coordination protocols with Transportation, Solid Waste, Parking Enforcement, 311, TTC, Emergency Management, and Climate/Sustainability teams, etc.
5. Year-Round Work Program: Build a continuous cycle for off-season analysis, scenario planning, contractor management, training, and pilot projects.
6. Implementation Plan: Set milestones for establishing the unit, recruiting, onboarding staff, acquiring resources, and transferring responsibilities before the next winter season.
7. Performance & Improvement Framework: Check in on actions, achievements, overall success of dedicated unit

Resources and Costing:

No significant capital costs are expected.

Establishing the unit is in progress through re-allocation of existing staff wherever possible.

Net new staff required to establish this year-round unit would result in operating costs to cover salaries and benefits based on appropriate bands within the compensation matrix.

Ease of Implementation:

Minor changes required, prompt timing (1-4 months), low cost

Benefit:

Moderate service enhancement, major efficiency improvement, addresses two core issues

6. Prioritization and Implementation

The final phase of this project involves translating recommendations into a practical, time-bound implementation plan detailing timelines, lead responsibilities, resource needs, and a performance monitoring framework. This section includes a detailed implementation plan that can serve as a roadmap to guide the City's operational and strategic improvements starting in the 2025–26 winter season.

The implementation plan provides a structured approach for launching the recommended actions, sequenced by relative ease, expected benefit, and alignment with the winter maintenance cycle, and considering realistic operational capacity. While the City has already advanced some actions to address immediate operational pressures and risks, these efforts complement rather than replace the broader implementation framework. The timelines presented in this plan continue to represent the recommended pacing and logical sequencing of work, recognizing that early progress may influence specific start points but not the overall strategy. Together, these steps establish a coordinated path that balances near-term stabilization with sustained, long-term improvement and performance verification.

6.1. Work In Progress

In light of the fast-approaching winter season and Transportation Service's application of lessons learned from 2025, staff have reported initiating effort in line with many of the recommendations, as listed below.

- 1A Develop and Implement a Robust MSERP
- 1B Develop a Snow Removal Framework and Readiness
- 1C Develop a Surge Plan and Readiness
- 1D Develop a Towing Plan and Readiness
- 2 Refine 311 Protocols for Major Snow Events
- 3A Communicate Significant Weather Events as Emergencies
- 3B Communicate Results Rather than Effort
- 3C Improve Consistency of Councillor Communications
- 4 Improve Quality Monitoring, Tools, and Deficiency Reporting
- 5 Negotiate Improvements within Current Contracts
- 7A Improve Public Notification of Parking Restrictions
- 8B Explore Opportunities for Sidewalk Clearing Equipment
- 8C Increase Spares for Sidewalk Clearing Equipment

- 10A Conduct a Depot Rationalization and Snow Dump Site Study
- 10B Improve Operability and Procure New Melters
- 11 Establish a Dedicated Winter Services Unit

6.2. Prioritization Results

The recommendations were plotted on a graph illustrating benefit (on the y-axis) versus ease of implementation (on the x-axis).

Table 2: Summary of Scores for Ease and Benefit

	Recommendation	Ease	Benefit	Total
1A	Develop and Implement a Robust MSERP	6	9	15
1B	Develop a Snow Removal Framework and Readiness	5	9	14
1C	Develop a Surge Plan and Readiness	5	9	14
1D	Develop a Towing Plan and Readiness	5	9	14
2	Refine 311 Protocols for Major Snow Events	8	6	14
3A	Communicate Significant Weather Events as Emergencies	7	6	13
3B	Communicate Results Rather than Effort	8	6	14
3C	Improve Consistency of Councillor Communications	9	5	14
4	Improve Quality Monitoring, Tools and Deficiency Reporting	4	9	13
5	Negotiate Improvements with Current Contracts	7	6	13
6	Identify and Prepare Improvements for Future Winter Maintenance Contracts (2029)	3	9	12
7A	Improve Public Notifications of Parking Restrictions	3	8	11
7B	Enhance Parking Bylaws	3	7	10
8A	Strategize Starting Times for Sidewalk Plowing	9	8	17
8B	Explore Alternate Opportunities for Sidewalk Clearing Equipment	5	7	12
8C	Increase Spares for Sidewalk Clearing Equipment	6	7	13
9	Develop Winter Maintenance Best Practices for Infrastructure	6	6	12
10A	Conduct a Depot Rationalization and Snow Dump Site Study	5	8	13
10B	Improve Operability and Procure New Melting Technology	6	8	14
11	Establish a Dedicated Winter Services Unit	9	8	17

Total scores were not used for ranking but provide a general indication of viability. Figure 6 displays the resulting scatterplot.

Figure 6: Scatterplot of Recommendation Priorities: Benefit vs. Ease



As can be seen from Figure 6, each recommendation was categorized into one of the following prioritization types based on its scoring (as described further in Section 3.1.3):

- Foundational
- Quick Win
- High Priority
- Medium Priority

These prioritizations helped to guide the creation of the Implementation Plan and also reiterate the importance of many of the initiatives that are already underway including the development of the MSERP, Snow Removal Framework, Surge Plan and Towing Plan (1A, 1B, 1C, and 1D as plotted on the graph).

6.3. Implementation Plan

Based on the team's consideration of scoring, prioritization, resource requirements and timelines associated with each recommendation, an Implementation Plan was developed. The Implementation Plan is illustrated in Figure 7 and a summary of the Implementation Plan timeline is shown in Figure 8.

Figure 7 illustrates the winter season in which each recommendation is expected to be fully implemented. In some cases, staff are undertaking short term actions to address immediate needs for the upcoming 2025/26 season prior to implementing a longer-term strategy for 2026 and beyond. This allows them to address immediate needs while working towards longer-term solutions.

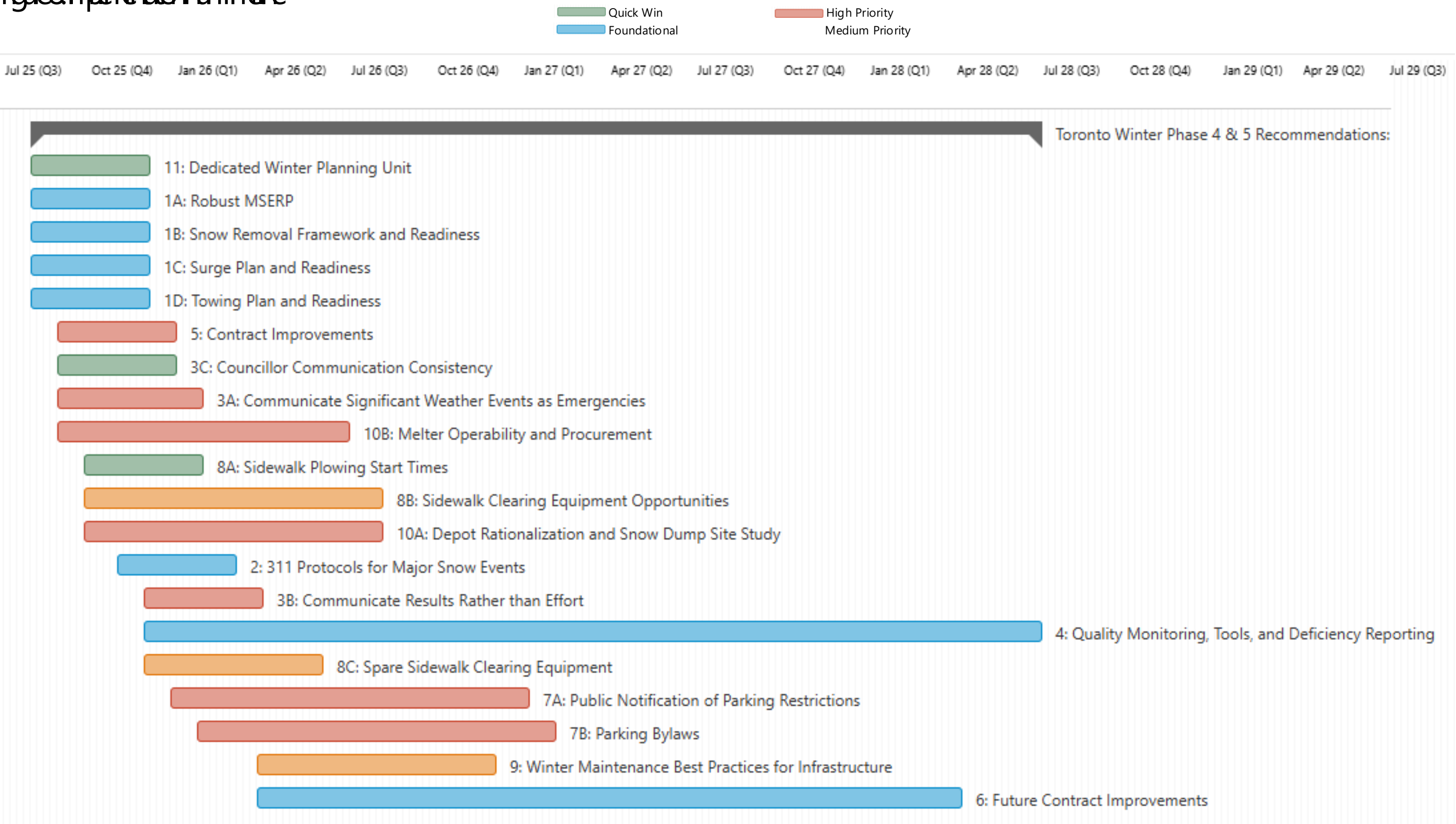
Figure 7: Implementation Plan Overview

Implementation Plan				
	Actions to be Completed Within 2025/26 Season	Actions to be Completed Before 2026/27 Season	Actions to be Completed Before 2027/28	Actions to be Completed in 2028/29 and Beyond
MSERP:	- Develop and Implement MSERP and Communications Plan (1A) - Develop Surge Plan and Towing Plan (1C, 1D) - Staff training and tabletop exercise	- Evaluate lessons learned from 2025/26 season - Update MSERP & maps as needed - Conduct annual tabletop exercise	- Evaluate lessons learned from 2026/27 season - Update MSERP & maps as needed - Conduct annual tabletop exercise	- Evaluate lessons learned from previous seasons - Update MSERP & maps as needed - Conduct annual tabletop exercise
Snow Removal:	- Develop Snow Removal Framework (1B) - Negotiate Improvements to Current Contracts (5) - Enhance Proactive Snow Removal	- POA to improve snow removal in current contracts, OR - Separate snow removal contracts	Based on decision for 2026/27 season	Based on decision for 2026/27 season
New Contracts:	N/A	Begin preparations for new contracts, document needs, develop strategy, etc. (6)²	Continue preparations and drafting new contracts	Finalize and award new contracts prior to 2029/30 season
Other Initiatives:	- Establish Dedicated Winter Services Unit (11) - Refine 311 Protocols for Major Snow Events (2) - Improve Communications - Councillor Updates, Emergencies, Results over Effort (3A, 3B, 3C) - Strategize Start Times for Sidewalk Plows (8A) - Pilot Sidewalk Clearing Equipment (8B)¹ - Improve Operability of Melters (10B)¹	- Implement KPIs (use 2025/26 season as baseline) - Improve Quality Monitoring (4)³ - Improve Notification of Parking Bans (7A)³ - Enhance Parking Bylaws (7B) - Conduct a Depot Rationalization & Snow Dump Site Study (10A)³ - Procure New Melting Technology (10B)^{1,3} - Explore Alternate Opportunities for Sidewalk Clearing Equipment (8B)^{1,3} - Increase Spares for Sidewalk Clearing Equipment (8C)³	- Continue to monitor KPIs and identify areas for improvement - Develop Winter Maintenance Best Practices for Infrastructure (9)	Continue to monitor KPIs and identify areas for improvement

Notes:

- Recommendations 8B and 10B are split over two years.
- Recommendation 6 extends over multiple years.
- Staff report that preliminary work has been initiated to address immediate risks; however, these recommendations may not be fully implemented until next season (2025/27).
- Refer to Table 6 for resource estimates associated with each recommendation (including staff hours, capital and operating expenses).

Figure 8: Implementation Plan Timeline



6.4. Resource Planning

Where feasible, resource estimates for fully implementing the recommendations were estimated, including staff time, capital costs, and operating costs, which are summarized in the following tableTable 3.

It should be noted that these are conceptual estimates for the sole purposes of assisting Council with deliberations and decision-making related to future winter operations. Further refinement of these estimates is required prior to budget inclusion. Appendix B provides additional implementation assumptions. MVU is working with the City on these initiatives. Refer to Section 4.1 for further details for:

- Recommendation 1A Develop and Implement a Robust MSERP,
- Recommendation 1B Develop a Snow Removal Framework and Readiness
- Recommendation 1C Develop a Surge Plan and Readiness
- Recommendation 1D Develop a Towing Plan and Readiness.

Table 3: Resource Planning Estimates for Other Recommendations

Recommendation		Staff Time (Hours)	Capital (\$)	Operating (\$/year)
2	Refine 311 Protocols for Major Snow Events	250		
3A	Communicate Significant Weather Events as Emergencies	600		
3B	Communicate Results Rather than Effort	150		
3C	Improve Consistency of Councillor Communications	100		
4	Improve Quality Monitoring, Tools and Deficiency Reporting	500	See Note 1	See Note 1
5	Negotiate Improvements with Current Contracts	190	See Note 2	See Note 2
6	Identify and Prepare Improvements for Future Winter Maintenance Contracts (2029)	840	\$300,000 - \$500,000	
7A	Improve Public Notifications of Parking Restrictions	590	\$250,000	
7B	Enhance Parking Bylaws	740	\$250,000 - \$750,000	
8A	Strategize Starting Times for Sidewalk Plowing	180		
8B	Explore Alternate Opportunities for Sidewalk Clearing Equipment	750	See Note 1	See Note 1
8C	Increase Spares for Sidewalk Clearing Equipment	250	\$600,000	\$50,000 - \$75,000
9	Develop Winter Maintenance Best Practices for Infrastructure	550	\$150,000 - \$200,000	
10A	Conduct a Depot Rationalization and Snow Dump Site Study	200	\$300,000 - \$500,000	
10B	Improve Operability and Procure New Melting Technology	300	\$4,200,000 - \$6,400,000	See Note 1
11	Establish a Dedicated Winter Services Unit			See Note 3
	TOTAL:	6,190	\$6,050,000 - \$9,200,000	\$50,000 - 75,000

- 1 Additional capital and/or operating costs are expected depending on type and volume of equipment/tools selected.
- 2 Additional costs through the contracts are possible depending on the magnitude/scope of the negotiated changes.
- 3 In progress through reallocation of existing staff where possible. Net new staff required would result in operating costs to cover salaries and benefits.

6.5. Performance Monitoring Framework

Implementing is not the end of the work. For long-term success, performance should be monitored each winter season to support continual improvement, measure long-term impacts and successes, identify any unintended consequences and support future decision making.

In addition to monitoring and documenting lessons learned each season, Transportation Services should also implement and track important data:

- A small set of Key Performance Indicators (KPIs) to measure true performance outcomes. KPIs should be limited to metrics that reflect service effectiveness and progress toward defined targets, recognizing that overuse can dilute their value.
- Demand statistics (factors outside the City's control, such as snowfall amounts or storm frequency) should be tracked to provide context and support normalization of performance results.
- Activity indicators should also be monitored to capture operational effort and workload levels.

Together, these three measure types, KPIs, demand statistics, and activity indicators, create a balanced view of winter operations performance. These metrics are listed below. Targets may also be developed based on historical data, risk, budgets, and public input.

Examples of KPIs

KPI: Service Reliability in Regular Winter Weather

Metrics:

- Percentage of winter maintenance operations meeting levels of service (LOS)
- Percentage of snow dump capacity available during peak periods

Technical Descriptions:

- Number of activations where response was initiated and completed in accordance with LOS (and required outcome was reached) divided by the total number of activations (across all modes)
- Average daily remaining capacity during highest 10% of seasonal load days. Indicates system resilience for snow disposal.

KPI: Service Reliability in Major Snow Event

Metrics:

- Average days to restore mobility after a Major Snow Event

- Average days to restore mobility to priority roads, bike lanes, streetcars, sidewalks
- Percentage of winter fleet available for deployment

Technical Description:

- Total number of days after major snow event declared for all modes to be functioning, averaged over all major snow events (or events per season), per cm of snowfall
- Average time from snow event end to full functional status for all priority routes, per cm of snowfall
- Number of fleet units ready for service / total winter fleet inventory. Reflects reliability of resources that deliver service.

Examples of Demand Statistics for Monitoring

- Seasonal snowfall: Total cm per season (Total accumulation of snowfall per season (cm))
- Frequency of major snow events: Number of major snow events per season (Average number of major snow events per season)
- Snowfall intensity: Snowfall per event (Average accumulation of snowfall per event (cm))
- 311 activities in major snow events: 311 calls during major snow events (Measures how many residents contact 311 about snow-related issues. Total number of calls per major snow event, categorized by call type)

Examples of Activity Metrics

- Amount of snow removed per cm of snowfall: Measures the efficiency of snow removal operations, calculated as total tonnes of snow removed divided by total snowfall (cm). Baseline to be set using February averages, improvements expected after MSERP implementation.
- Days of proactive snow removal: Indicates how proactively snow removal occurs between major snow events. Total days of removal work, not including removal during or immediately following major snow events.
- EOC activations: Tracks how often the City's EOC is activated for winter weather, number of activations per year.
- Vehicles towed during winter: Monitors towing activity, total number of vehicles towed due to snow-related restrictions per season. Should decline as public awareness improves.
- Parking tickets issued during winter: Tracks enforcement activity, total number of parking tickets issued for snow-related infractions per season. Should decline with better compliance.
- Vehicles towed per major snow event: Measures towing demand, average number of tows per major snow event or per cm of snowfall.

- Parking tickets per major snow event: Measures ticketing average number of tickets issued per major snow event, or per cm of snowfall.
- Councillor updates during snow events: Tracks internal communication, number of official snow-related updates sent to Councillors per event.
- Snow dump site capacity: Tracks dump site utilization collectively, percentage of available snow dump capacity remaining each day during the winter season, focusing on when capacity was most limited.

Appendix A: MSERP Outline

The MSERP framework was developed collaboratively by Municipal VU and City staff, with several sections to be authored or expanded by City staff. The plan provides a citywide operational framework to coordinate preparation, response, and recovery during major snow events that exceed the capacity of standard winter maintenance programs.

It aligns with the City of Toronto's Corporate Emergency Plan, Transportation Services' Winter Maintenance Program, and the Corporate Strategic Plan, which commits the Toronto Public Service to act through People, Partnerships, Performance, and Priorities to ensure a well-run, resilient, and equitable city. The MSERP functions as both an operational manual and a coordination tool, bridging tactical field actions, divisional responsibilities, and citywide governance. Estimated outline elements are provided below.

1. Introduction and Purpose

This chapter defines when and how the MSERP is activated and its role within Toronto's broader emergency management and winter operations frameworks. It sets the context for major event coordination and defines thresholds for activation.

Key Elements:

- Criteria for declaring a major snow event under City bylaws and policies.
- Alignment with the City's Corporate Emergency Plan and Emergency Operations Centre structure.
- Overview of City objectives during major events focused on safety, mobility, and public confidence.
- Clarification of the MSERP's relationship with divisional winter maintenance programs.

2. Guiding Principles

This chapter outlines the foundational principles that guide decision-making, resource prioritization, and communication during activation. The principles align directly with the City's Corporate Strategic Plan, which commits the Toronto Public Service to act through People, Partnerships, Performance, and Priorities to deliver a well-run, resilient, and equitable city.

Principles Include:

- **Safety:** Protection of life, property, and critical infrastructure, reflecting the City's commitment to public trust and confidence in essential services.
- **Accessibility:** Ensuring mobility for all residents, including emergency responders, transit users, and equity-deserving populations, in line with the City's inclusion and accessibility goals.
- **Mobility:** Supporting the Corporate Strategic Plan's Keep Toronto Moving priority by restoring safe and reliable movement of people, goods, and services as quickly as possible.

- Environment: Supporting the Tackle Climate Change and Build Resilience priority through environmentally responsible use of salt, fuel, and snow disposal practices.
- Efficiency: Advancing the A Well-Run City priority by coordinating resources across divisions, agencies, and contractors for maximum operational effectiveness.
- Communication: Upholding the City's values of transparency and accountability through timely, coordinated, and multilingual public information consistent with corporate communication standards.

3. Governance Model

This chapter outlines how governance and accountability are maintained throughout activation and recovery, ensuring consistency with the City's Emergency Management structure.

Key Elements:

- Relationship between Transportation Services, the Emergency Operations Centre, and the Office of Emergency Management.
- Decision-making hierarchy and reporting chain.
- Integration with the Corporate Emergency Plan's incident management system.
- Oversight roles for the Deputy City Manager, Infrastructure and Development Services, and Corporate Communications.
- Mechanisms for situational reporting, briefing notes, and escalation protocols.
- Alignment with the Corporate Strategic Plan's focus on performance and accountability in municipal operations.

4. Activation Criteria and Escalation Monitoring

This chapter outlines how the City monitors conditions, activates the plan, and coordinates response during a major snow event. The stages ensure an orderly escalation of effort and clear communication across divisions.

Phases Include:

- Monitoring Phase: The City increases weather monitoring, prepares staff and equipment, and notifies key partners of potential activation.
- Phase 1 – Storm Onset: Initial plowing and salting begin, with partial activation of coordination processes as conditions evolve.
- Phase 2 – Escalation: A Major Snow Event may be declared, triggering full coordination across divisions and enforcement of emergency measures.
- Phase 3 – Citywide Response: Resources are deployed citywide to protect mobility and critical access, with sustained operations until conditions stabilize.

- Recovery/Demobilization: Operations gradually return to normal, resources are stood down, and a multi-division debrief captures lessons for improvement.

5. Roles and Responsibilities

This chapter defines core responsibilities and coordination expectations among key divisions and agencies.

- Defines clear accountability and coordination for snow event response across Transportation, Fleet, Communications, Procurement, Emergency Management, and others.
- Establishes an incident management structure consistent with the City's Corporate Emergency Plan, with escalation to the EOC for major events.
- Includes a one-page RACI chart showing who is responsible, accountable, consulted, and informed for key actions such as event declaration, plowing, removal, and communications.
- Aligns roles with existing corporate, emergency, and communication plans to ensure consistency in decision-making and public messaging.
- Provides quick-reference visuals (org chart, escalation flow, contact hierarchy) for rapid navigation during events.

6. Operations Plan – Plowing and Salting

This chapter will document the City's detailed operational plan for plowing and salting during major snow events. It will consolidate and reference existing standard operating procedures, route maps, and resource deployment plans already in use by Transportation Services and its partners.

- Describes how operations scale under a Major Snow Event and how service levels adjust once the MSERP is activated.
- Outlines how plowing and salting are prioritized to protect safety, maintain essential mobility, and preserve access for emergency and transit services.
- Provides a framework for coordination between City divisions, contractors, and supporting agencies, without replacing existing field procedures.

7. Operations Plan – Snow Removal

This chapter will document the City's detailed operational plan for snow removal, including activation triggers, resource deployment, and coordination across divisions. It will draw directly from the City's existing procedures, disposal site management practices, and logistical frameworks.

- Defines how snow removal operations are initiated once accumulation or storage constraints warrant escalation.
- References existing standards for priority zones, timelines, and environmental controls.

- Describes how snow removal equipment will be coordinated through existing maintenance and dispatch systems.

8. Public Communication Plan

- In alignment with SPEC documents, outlines how the City communicates with residents, media, Councillors, and staff before, during, and after snow events.
- Defines communication objectives for each phase: pre-event awareness, during-event updates, and post-event recovery information.
- Establishes message templates for advisories, parking restrictions, snow removal operations, and safety notices to ensure consistency and clarity.
- Details approval workflows and spokesperson roles to align with corporate communication protocols and ensure timely, coordinated releases.
- Identifies communication channels, including website updates, social media, email alerts, media releases, and 311 integration.
- Where appropriate, may incorporate multilingual outreach tools to reach diverse communities and ensure equitable access to information.
- Sets media coordination protocols for briefing schedules, key messages, and response procedures during major snow events.
- Provides a one-page communications flow diagram showing message approval, release timing, and escalation triggers.

9. Enforcement and Bylaw Adjustments

This chapter documents bylaw adjustments that may be required including temporary parking bans, towing strategy and any necessary bylaw exemptions required (e.g. noise). It will outline required bylaw amendments or temporary provisions, activation procedures, and coordination steps as required.

10. Resource Inventory

This chapter lists equipment, staff, contractors, works yards, snow dumps and other relevant contacts that may be required during a major snow event, linked to the Surge Plan. It will include links to categorized inventories, contact lists, standby arrangements, and links to fleet and contract databases to support activation.

11. Health, Safety, and Staff Welfare

This chapter outlines the City's commitment to the health, safety, and welfare of staff during prolonged operations. Likely to include reference to:

- Maximum shift lengths and required rest periods.
- Warm-up and rest area provisions.

- Meal delivery and hydration protocols.
- Personal protective equipment standards.
- Critical incident stress management and reporting procedures.
- Reflects the Corporate Strategic Plan's People commitment to a safe, healthy, and supported workforce.

12. Recovery and Debrief

- Describes procedures for transitioning from emergency response to normal winter operations once service levels are restored.
- Outlines steps for post-event assessments, including equipment inspections, material restocking, and data review.
- Establishes requirements for documenting performance, resource use, and operational challenges following each major event.
- Provides guidance for conducting debriefs with staff, contractors, and partners to capture lessons learned and improvement actions.

13. Plan Administration

- Establishes the governance process for maintaining, testing, and updating the MSERP to ensure it remains current and effective.
- Defines roles responsible for plan ownership, updates, and approvals.
- Sets an annual review and validation schedule, including post-season debriefs and simulation exercises to test readiness.
- Specifies version-control and documentation protocols to track revisions and maintain a clear record of changes.

14. Appendices

The appendices include route maps, priority locations, contact directories, communication templates, equipment and supply inventories, and policy references.

Appendix B: Implementation Plan Development

ID	Recommendation	Priority	Implementation Winter Season	Start Month	Duration (months)	Financial Resources (Operating & Capital Notes)	Staff Resources (Hours)	Capital Costs (\$) ³	Operating Costs (\$/year)
1. Increase major snow event readiness									
1A	Develop and Implement a Robust MSERP and Communications Plan.	Foundational	2025/26	Sep-25	4	MVU is working with the City on these initiatives - refer to details in report			
1B	Develop a Snow Removal Framework and Readiness	Foundational	2025/26	Sep-25	4	MVU is working with the City on these initiatives - refer to details in report			
1C	Develop a Surge Plan and Readiness	Foundational	2025/26	Sep-25	4	MVU is working with the City on these initiatives - refer to details in report			
1D	Develop a Towing Plan and Readiness	Foundational	2025/26	Sep-25	4	MVU is working with the City on these initiatives - refer to details in report			
2. Refine 311 protocols for major snow events									
2	Refine 311 Protocols for Major Snow Events (Blackout Changes)	Foundational	2025/26	Dec-25	4	An active consulting assignment is already underway.	250		
3. Improve communications related to winter maintenance activities									
3A	Communicate Significant Weather Events as Emergencies	High Priority	2025/26	Oct-25	5	No significant operating or capital costs are expected.	250		
3B	Communicate Results Rather than Effort	High Priority	2025/26	Jan-26	4	No significant operating or capital costs are expected.	150		
3C	Improve Consistency of Councillor Communications	Quick Win	2025/26	Oct-25	4	No significant operating or capital costs are expected.	100		
4. Improve quality monitoring									
4	Improve Quality Monitoring, Tools, and Deficiency Reporting	Foundational	2025/26, 2026/27	Jan-26	24	An active consulting assignment is already underway. Additional capital investments in new tools or technology may also be incurred, depending on the results of the exploration	500	See Note 1	See Note 1
5. Improve current contracts									
5	Negotiate Improvements with Current Contracts	High Priority	2025/26	Oct-25	4	Additional costs through the contracts are possible depending on the magnitude/scope of the negotiated changes.	190	See Note 2	See Note 2
6. Identify and prepare for improvements with future contracts									
6	Identify and Prepare Improvements for Future Winter Maintenance Contracts (2029)	Foundational	2026/27	May-26	24	Optional consulting fees estimated at \$300,000 - \$500,000 Additional costs dependent on contract and procurement details	840	\$300,000 - \$500,000	
7. Develop and implement preventive winter parking compliance strategies (also see 1D - Towing Plan)									
7A	Improve Public Notification of Parking Restrictions	High Priority	2026/27	Feb-26	12	Optional consulting fees estimated at \$250,000	590	\$250,000	
7B	Enhance Parking Bylaws	High Priority	2026/27	Mar-26	12	Contractor to supply and install new signage estimated at \$250,000-\$750,000 (depending on volume and scope of changes)	740	\$250,000 - \$750,000	



ID	Recommendation	Priority	Implementation Winter Season	Start Month	Duration (months)	Financial Resources (Operating & Capital Notes)	Staff Resources (Hours)	Capital Costs (\$) ³	Operating Costs (\$/year)
1. Increase major snow event readiness									
8. Strategize improvements and procure equipment to improve sidewalk clearing									
8A	Strategize Starting Times for Sidewalk Plowing	Quick Win	2025/26	Nov-25	4	No significant operating or capital costs are expected.	180		
8B	Explore Alternate Opportunities for Sidewalk Clearing Equipment	High Priority	2025, 2026	Nov-25	10	Capital costs are dependent on nature of equipment that is specified	750	See Note 1	See Note 1
8C	Increase Spares for Sidewalk Clearing Equipment	High Priority	2026/27	Jan-26	6	New fleet (additional spares) estimated at \$600,000 Additional operating cost estimated at \$50,000 - \$75,000 to increase parts inventory and expanded maintenance.	250	\$600,000	\$50,000 - \$75,000
9. Optimize winter maintenance activities around infrastructure									
9	Develop Winter Maintenance Best Practices for Infrastructure	Medium Priority	2027/28	May-26	8	Optional consulting fees estimated at \$150,000 - \$200,000.	550	\$150,000 - \$200,000	
10. Increase capacity of melting, snow depots and works yards									
10A	Conduct a Depot Rationalization and Snow Dump Site Study	High Priority	2026/27	Nov-25	10	Optional consulting fees estimated at \$300,000 - \$500,000	200	\$300,000 - \$500,000	
10B	Improve Operability and Procure New Melting Technology	High Priority	2025/26, 2026/27	Oct-25	10	In the short term, repair costs, spare inventory, and labour for rehabilitating existing melters estimated at \$200,000 to \$400,000. New melting technology estimated at \$4 to 6 million.	300	\$4,200,000 - \$6,400,000	See Note 1
11. Establish a dedicated year-round Winter Services Unit									
11	Establish a Dedicated Winter Services Unit	Quick Win	2025/26	Sep-25	4	No significant capital costs are expected. In progress through re-allocation of existing staff where possible. Net new staff required would result in operating costs to cover salaries and benefits.			
TOTALS:							5840	\$6,050,000 - \$9,200,000	\$50,000 - \$75,000
	NOTES:								
	1. Additional capital and/or operating costs are expected depending on type and volume of equipment/tools selected.								
	2. Additional costs through the contracts are possible depending on the magnitude/scope of the negotiated changes.								
	3. It is assumed consulting fees would be funded through the capital budget.								

Appendix C: Assumptions & Limitations

Purpose and Use of Estimates: Conceptual cost and resource estimates have been developed solely to assist Council in evaluating options for future winter operations. These estimates are preliminary and will require further refinement before any inclusion in operating or capital budgets.

Event Frequency and Duration: Major snow events requiring full removal are assumed to occur only once every two winter season. For comparability, winters are assumed to follow a consistent level of severity across scenarios without adjustment for year-to-year variation. Average citywide clean-up durations are fixed at either 10 or 14 days depending on the modeled removal rate.

Standby Period and Contractor Availability: Each scenario includes a defined standby period during which contractors retain equipment and operators in a ready state and are paid regardless of activation. It is assumed that sufficient market capacity exists to meet these requirements and that contractors can provide all necessary resources under current market conditions.

Crew Structure and Operations: Crew composition, size, and equipment mix are fixed for each road type and remain consistent across scenarios. Production rates are standardized for each crew type, assuming uniform output across the city regardless of snow depth, haul distance, or local conditions. During active removal, all crews are assumed to operate full shifts at standard production rates, with no downtime, equipment failure, or mobilization inefficiencies.

Haulage and Disposal Capacity: For scenarios excluding haulage, the City's existing haulage program (SURG Plans and Transportation Services annual contract) is assumed to provide adequate truck availability when required, although availability risk is noted. Existing snow disposal sites are assumed to have sufficient capacity to handle the modeled removal volumes without expansion. Disposal costs are treated as part of the contractor's operating rate rather than modeled separately.

Cost Composition and Rate Assumptions:

- Cleanup costs represent active removal operations, inclusive of contractor labour and equipment.
- Standby costs reflect readiness payments for retained labour and equipment throughout the standby period.
- Total scenario costs are the sum of cleanup and standby values. Equipment and labour rates are fixed throughout the modelled contract term (2026 to 2029) with no inflation or escalation applied. All standby costs are incurred for the entire standby duration, regardless of whether activation occurs.

- The model is built using baseline data provided by the City, including contractor rates, equipment costs, and typical crew compositions. Work production rates for plowing, loading, and hauling are based on standard performance metrics supplied by the City.

Integration with Existing Operations: The model assumes that snow removal contracts operate efficiently alongside existing winter maintenance programs with no major duplication or overlap. City overhead, administration, and monitoring costs are excluded or assumed to be absorbed within existing divisional budgets.

Performance and Enforcement Assumptions: Contractor mobilization, supervision, and performance are assumed to meet all contract requirements under normal operating conditions. Effective parking enforcement and towing during major snow events are also assumed to occur, preventing operational delays that could extend removal timelines and increase costs.

Appendix D: End Notes

ⁱ City of Toronto. *Administrative Inquiry Response*. March 25, 2025.

ⁱⁱ City of Toronto. *Administrative Inquiry Response*. March 25, 2025.

ⁱⁱⁱ City of Toronto. *Financial Information Return*. 2023.

^{iv} City of Toronto. *Winter Services Guide*. 2024-2025.

^v Government of Canada. *Daily Data Report for February 2025*.

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[30&mlyRange=%7C&StationID=48549&Prov=ON&urlExtension=_e.html&searchType=stnName&optLimit=specDate&StartYear=2025&EndYear=2025&selRowPerPage=25&Line=1&searchMethod=contains&Month=2&Day=8&txtStationName=toronto&timeframe=2&Year=2025](https://climate.weather.gc.ca/climate_data/daily_data_e.html?hlyRange=2009-12-10%7C2025-06-30&dlyRange=2010-02-02%7C2025-06-30&mlyRange=%7C&StationID=48549&Prov=ON&urlExtension=_e.html&searchType=stnName&optLimit=specDate&StartYear=2025&EndYear=2025&selRowPerPage=25&Line=1&searchMethod=contains&Month=2&Day=8&txtStationName=toronto&timeframe=2&Year=2025)