2025 Winter Maintenance Program Follow-Up

Status of Auditor General's Previous Recommendations

June 26, 2025

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AUDITOR GENERAL TORONTO

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Executive Summary

City Council requested the Auditor General conduct additional audit work of winter maintenance operations

In March 2025, Toronto City Council adopted a motion, prompted by the Mayor, requesting the Auditor General to consider adding, as part of the Auditor General's 2025 Work Plan, an audit of the following:

a) the City of Toronto's handling of the February 2025 major winter storm, taking into consideration prior audits of this winter service contract and provide recommendations for improving winter maintenance during significant winter storms;

b) whether previous Auditor General recommendations related to winter maintenance operations were enacted by City management ahead of the February 2025 winter storm;

c) the City's snow removal system to determine whether it was activated in a timely and effective manner;

d) the City's sidewalk plow fleet to determine whether they are the optimal equipment based on local winter conditions, whether the plows are maintained in accordance with the manufacturer's recommended practices, the average percentage of the plow fleet that is in service throughout a major snow event and whether all warranties from the manufacturer have been leveraged to limit the City's cost of sidewalk plow maintenance; and

e) the 2021 Negotiated Request for Proposals awards that resulted in the current suite of winter maintenance contracts to determine if they were awarded in a fair and competitive manner;

and recommend improvements to the City's winter maintenance contracts.

City Council requested the City Manager conduct a full review of winter maintenance operations

In addition, City Council requested the City Manager conduct a full review of the winter maintenance operations. This review is to include: a forensic audit of the 2022–2029 contract procurement; investigating gaps between resident complaints and reports from the City on sidewalk clearing; reviewing contractor compliance and renegotiation options; and assessing equipment readiness and snow clearing priorities.

City Council also requested the General Manager, Transportation Services review jurisdictional best practices and how to leverage new technologies — such as artificial intelligence (AI), machine learning, and real-time data — to improve snow clearing; enhance contractor oversight and their equipment; assess whether contractors had appropriate and adequate equipment; better articulate service levels; provide ward-specific analysis of service issues; and review snow clearing priorities on residential streets without sidewalks to better support pedestrians.

City Council's decisions on March 26 and 27, 2025 are available at: Agenda Item History - 2025.EX21.1

This report updates the status of recommendations from three prior Winter Maintenance reports and responds, in part, to City Council's March 2025 request

This follow-up review assesses whether the Transportation Services Division (the Division) implemented the outstanding recommendations from the Auditor General's previous Winter Maintenance reports. It also directly addresses **part b) of the March 2025 motion adopted by City Council**, which asks if the Division implemented the Auditor General's past recommendations related to winter maintenance operations prior to the February 2025 winter storm.

The table below summarizes our assessment, which is further detailed in the **Follow-up Results and Findings** section of this report. Of the 19 recommendations that management reported as fully implemented this follow-up cycle, we have assessed eight as fully implemented, two as not applicable and closed, and nine as not fully implemented. During our follow-up work, we also made additional observations which have resulted in three new recommendations in this report.

Report	Total Number of Recs	Recs Closed in 2023	2025 Follow-up Cycle Results		
			Fully Implemented	No Longer Applicable	Not Fully Implemented
Winter Road Maintenance Program - Phase One Audit (October 2020)	22	9	5	-	8
Winter Road Maintenance Program - Phase 2 Analysis (June 2021)	4	2	-	2	-
Winter Road Maintenance Program Follow-Up (June 2023)	4	-	3	-	1
Total	**30**	**11**	**8**	**2**	**9**

Auditor General will revisit City Council's requests after the City Manager completes broader operational review

The Auditor General will revisit **parts a), c), and d) of the March 2025 motion adopted by City Council** after the City Manager completes a broader operational review of the Winter Maintenance program. Once the review is complete, the Auditor General will consider the City Manager's findings and recommendations and assess whether additional audit work is necessary.

Auditor General's 2023 audit of the procurement of Winter Maintenance contracts

Part e) of the March 2025 motion adopted by City Council asked whether the 2021 Negotiated Request for Proposals (NRFP) awards for winter maintenance contracts were made in a fair and competitive manner. This was addressed in our 2023 audit report, *A Review of the Procurement and Award of the Winter Maintenance Performance-Based Contracts*, and through Council's request for the City Manager to conduct a forensic audit of the procurement. The audit report made 16 recommendations to improve the City's procurement processes, including clarifying evaluation criteria, helping to retain more suppliers throughout the procurement process, and achieving better outcomes and value for the City.

This follow-up review does not constitute a performance audit conducted in accordance with Generally Accepted Government Auditing Standards (GAGAS). However, we believe that we have performed sufficient work to validate management's assertions on the implementation of recommendations.

Background

New performance-based winter maintenance contracts

In 2021, the City entered new performance-based winter maintenance contracts for 2022–2029, replacing the previous 2015–2022 unit-priced contracts.[1] The goal was to enhance accountability, operational efficiency, and service quality.

The Auditor General's 2020 (Phase One) and 2021 (Phase Two) recommendations were made under the previous unit-priced contracting model. The 2023 winter maintenance follow-up report and current 2025 follow-up review assess whether management implemented outstanding recommendations in the context of these new performance-based contracts, and whether internal processes have been effectively updated to reflect this new model.

Under the new contracts, contractors are responsible for delivering winter services across assigned geographic areas, including expressways, arterial, collector and local roads, sidewalks[2], bike lanes, and multi-use trails. Contractors must also determine the appropriate quantity and type of equipment[3], plan routes, and deliver services within defined service-level timelines. The City pays contractors a fixed daily rate for ensuring the availability of equipment and operators, and an additional operating rate when they are actively deployed during winter events.[4] The contracts also include provisions for liquidated damages and performance-based price adjustments to enforce accountability.

[1] The Auditor General's 2020 and 2021 reports did not recommend changing the procurement method or contracting model. Instead, they focused on improving contract language, management, and performance monitoring. These changes can be implemented regardless of the procurement or contracting approach. Holding contractors accountable to ensure the City receives the services it pays for applies equally to all contract types, whether performance-based or unit-priced, and regardless of whether they are procured through an RFQ, RFP, or NRFP.
[2] Beginning with the 2022–2029 contract cycle, Transportation Services took over responsibility for clearing some sidewalks and expanded the program to include more areas. Our review did not include sidewalk clearing performed in-house by Transportation Services.
[3] "Equipment" and "vehicles" are used interchangeably throughout this report to generally refer to snow clearing equipment and other vehicles that are provided by winter maintenance contractors.
[4] A winter event is defined as any City-initiated activation for work to be completed by the contractor, including salting, plowing, de-icing, etc.

City and contractor roles and responsibilities

Transportation Services is responsible for ensuring contractors meet service-level requirements and for verifying that payments align with contract terms. The Division's responsibilities include activating contractors for winter events, validating equipment readiness and availability, conducting field inspections and audits, managing data through the Enterprise Work Management Solution (EWMS), and reviewing GPS tracking data to confirm route completion and timing.

Contractors must supply all labour, equipment, and materials needed to deliver services in accordance with their contracts. They must also maintain equipment in good repair, provide mechanical fitness certificates, calibrate salting and de-icing equipment, submit work orders for the City's vendor to install and repair GPS tracking devices, and adhere to equipment signage and documentation requirements.

Contractors are also responsible for correcting service deficiencies within prescribed timelines and are subject to liquidated damages and performance-based price adjustments if they fail to meet the contract terms and requirements.

Service level standards and contractor accountability

The 2022-29 contracts set performance expectations for different type of roads, sidewalks, cycle lanes, bus stops and pedestrian crossovers. Contractors are required to achieve specified pavement outcomes within specified timelines (also known as Maximum Operating Time)[5], which are based on the Council-approved service levels. The service-level expectations specified in the contracts are included in **Exhibit 4**. These service levels are also communicated on the City's website so that residents are aware of what to expect throughout the winter season.[6]

To enforce contractor accountability, the contracts include two key financial mechanisms: liquidated damages and performance-based price adjustments.

- **Liquidated damages**[7] are imposed when a contractor fails to meet certain contract requirements, such as delayed deployment, missing documentation, or failure to meet safety or equipment standards.

[5] Maximum Operating Time means the maximum time required to perform operations to meet the applicable service level requirements. For example, contractors are required to achieve certain desired pavement outcomes ("Bare Pavement," "Centre Bare," or "Safe and Passable") within the number of hours specified in the contract and the Council-approved service levels (refer to **Exhibit 4**). For the definition of pavement outcomes, refer to **Exhibit 5**.

[6] Salting & Plowing Roads – City of Toronto

[7] When a contractor fails to meet certain contract requirements and deliverables, the City can charge liquidated damages for non-performance. Liquidated damages are amounts specified in the contract that are payable by the party that breaches the contract terms, to compensate the other party for their pre-estimated losses. For example, any delay by the contractor in commencing plowing operation may cause public safety risks such as accidents or may impact service levels. Refer to **Exhibit 6** for the list of liquidated damages.

- **Performance-based price adjustments** are calculated based on contractor compliance with service levels, rewarding high performance with financial incentives and applying financial disincentives when the contractors fail to meet the service levels. For example, contractors must complete winter maintenance activities on time, as directed, and with the quality required by the City's service levels.

Figure 1 below describes how these price adjustments are calculated and outlines how Transportation Services will determine contractor compliance with service level requirements.

Figure 1: Thresholds for Evaluating Price Adjustments Excerpted from the New Winter Maintenance Contracts

Performance Metric per Contract Area	Formula for Determining Compliance with Service Level Requirements	Threshold Per Winter Event
Routes Completed within Maximum Operating Time	(cumulative number of kilometres of infrastructure requiring service for which Operations were activated) **minus** (cumulative number of kilometres of infrastructure serviced by Vendor within Maximum Operating Time)	Less than or equal to 1 kilometre
Compliance with Desired Pavement Outcome	(cumulative kilometers of roadways inspected by City) **minus** (cumulative kilometers of infrastructure inspected by City that meet the Desired Pavement Outcome)	Less than or equal to 1 kilometre

Follow-up Results and Findings

This report summarizes findings from our 2025 follow-up review

This section of the report presents the results of our follow-up work on the implementation status of recommendations from our two previous reports on the City's Winter Maintenance program, as well as our 2023 follow-up report:

1. Audit of Winter Road Maintenance Program - Phase One: Leveraging Technology and Improving Design and Management of Contracts to Achieve Service Level Outcomes (October 2020)

   This report made 22 recommendations aimed at modernizing Transportation Services' management of winter operations, improving the program's efficiency and effectiveness, resolving contract and performance issues, and establishing better mechanisms for measuring service levels.

2. Winter Road Maintenance Program - Phase 2 Analysis: Deploying Resources (June 2021)

   This report included four recommendations, concluded that outsourcing winter services delivered better value than in-house service delivery (under the then-current pricing and unit-based contracting model), and identified opportunities to optimize the deployment and utilization of the contractor fleet.

3. Winter Maintenance Program Follow-Up - Status of Previous Auditor General's Recommendations & Processes to Hold Contractors Accountable to New Contract Terms (June 2023)

   This report reviewed progress made on implementing the earlier recommendations and added four new recommendations to further strengthen contractor oversight and accountability under the City's new performance-based contracts.

11 of 30 recommendations from the Phase One, Phase Two, and Follow-up reports previously closed

Table 1 below summarizes the status of 30 recommendations from our three previous reports. The Auditor General's 2023 follow-up report verified that 11 of the 26 recommendations from our previous reports had been fully implemented and included four new recommendations.

9 of 30 recommendations are not fully implemented

In this follow-up cycle, management reported that the remaining 19 recommendations were fully implemented. As outlined in **Table 1**, we verified that eight are fully implemented, two are no longer applicable and closed, and nine are still in progress and are not fully implemented.

- **Exhibit 1** lists the recommendations that are fully implemented.
- **Exhibit 2** outlines the two recommendations that are no longer applicable.
- **Exhibit 3** details the nine recommendations that are not fully implemented, and provides management's comments on their status, action plans, and timelines for completion.

Table 1: Implementation Status of Auditor General Recommendations from Winter Maintenance Reports for Phase One, Phase Two, and 2023 Follow-up

Report	Total Number of Recs	Recs Closed in 2023	2025 Follow-up Cycle Results		
			Fully Implemented	No Longer Applicable	Not Fully Implemented
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Winter Road Maintenance Program - Phase 2 Analysis (June 2021)	4	2	-	2	-
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3 new recommendations to improve Winter Maintenance program

Based on our follow-up review, we identified areas for further improvement and made three new recommendations in this report. **Appendix 1** lists these recommendations, together with management's comments and action plans, and completion timelines.

Progress on previous recommendations

Since our last review, Transportation Services has made progress on our report recommendations. Staff now use a GPS watchdog report, which is run twice daily to confirm that GPS devices are functioning properly, and that the equipment is available. If the equipment is shown as available, it is eligible to receive the daily rate. However, staff still need to ensure that equipment IDs listed on the daily rate sheets match those on the watchdog report to confirm eligibility.

Additionally, the Division developed a Winter Maintenance Contract Administration Manual, outlining staff and contractor responsibilities and 32 standard operating procedures (SOPs), along with checklists and forms. These tools are intended to support key program aspects, including operational monitoring, GPS compliance, contractor performance, and payment processing. For these tools to be effective, the Division should ensure procedures are implemented in practice consistently across all contract areas.

Transportation Services also worked with its GPS vendor, winter maintenance contractors, and Fleet Services to implement a more structured process for installing, maintaining, and repairing GPS devices on equipment that are paid a daily rate.

Further improvements needed in monitoring service levels

Although the Division introduced a contractor performance scorecard to summarize key data from each winter event (e.g., route completion, liquidated damages, field audit results, and equipment operation times), its effectiveness and reliability is limited by ongoing GPS dashboard issues and insufficient details recorded in field audit reports.

Transportation Services is working with its vendor to improve the GPS dashboard. However, the dashboard, used to monitor whether routes were completed within the contracted timeframe and service levels, is still not effective three years into the new performance-based contract model.

Reliability issues with the GPS dashboard and contractor delays in submitting updated route maps have hindered the Division's ability to efficiently use GPS as intended for contractor monitoring, detecting areas that may not have received the required service, enforcing contract terms, and applying performance-based price adjustments. This is further discussed in Section A.

Although key performance indicators (KPIs) have been developed as part of the performance-based contract model, recurring problems with GPS dashboard reliability continue to reduce the effectiveness of live monitoring, public performance reporting, and overall accountability.

Deficiencies are identified through 311 service requests and field audits. Work orders are tracked in the Enterprise Work Management Solution (EWMS), but the following challenges remain:

- More information needs to be recorded in staff field audits to better assess and enforce contractor performance;
- Difficulties continue in tracking vehicle breakdowns, deploying spare equipment, and maintaining an up-to-date master equipment list; and
- Better analysis of 311 service request data is needed to understand the root causes and nature of service issues related to contractor performance.

This is further discussed in **Sections B** and **C**.

Addressing these issues is essential to strengthening the Winter Maintenance program and improving service delivery.

9 previous recommendations remain outstanding

3 new recommendations are included in this report

Fully implementing the remaining nine recommendations from our previous reports, along with the three new recommendations in this report, will help management more efficiently and effectively monitor contractor performance, report on service level achievement, and apply liquidated damages and price adjustments in accordance with the terms of the new winter maintenance service contracts.

It has been between two to five years since these previous report recommendations were issued. Combined with the challenges the City faced during the 2025 winter storm, it is critical for management to expedite fully implementing these 12 recommendations.

This report provides a summary of the main issues that need to be addressed by Transportation Services through the remaining 12 recommendations.

A. Strengthening Real-Time Monitoring and Verification Using GPS Technology

2020 audit recommended using GPS technology to monitor contractor performance

The Auditor General's previous reports on winter maintenance included several recommendations aimed at improving the use of GPS technology to monitor contractor performance, verify route completion, and enhance reporting.[8]

These recommendations highlighted the need to strengthen the City's ability to:

- Efficiently monitor and verify route completion; and
- Effectively leverage GPS data and reporting tools to assess contractor performance and service levels.

The following sections summarize our follow-up observations related to these recommendations, with a particular focus on efficient GPS use to monitor and report on contractor performance and service delivery.

A.1. Manually Verifying Route Completion is Not Efficient

The Winter Maintenance program aims to ensure timely and complete service delivery by contractors, particularly for snow clearing (salting and plowing) on designated routes. Accurately verifying whether routes are complete is critical for monitoring contractor performance and enforcing contract terms, including financial disincentives for non-compliance.

Significant manual efforts spent on route verification

During our follow-up, Transportation Services staff reported that they verify whether routes were completed within the specified time by manually comparing expected routes with GPS information. This process is both labour-intensive and time-consuming, especially given the frequency of winter events and the program's geographic scope. Staff complete this work manually due to the ongoing reliability issues with the GPS dashboard, which are discussed further below.

[8] See Recommendations #1, 5, 9, 14, 20, and 21 in the Auditor General's 2020 report, Audit of Winter Road Maintenance Program - Phase One: Leveraging Technology and Improving Design and Management of Contracts to Achieve Service Level Outcomes.

Insufficient documentation to confirm route completion within the allotted time

While the operating logs used by staff captured vehicle start and end times, they did not record how much of a route was completed (i.e., the number of kilometres covered) within the allotted time specified in the contract and service levels achieved (as summarized in **Exhibit 4**). In addition, there was insufficient documented evidence that route maps had been formally or consistently compared to GPS data. This creates a gap in demonstrating effective oversight of contractor accountability for performance according to contracted service-level expectations. We could not verify whether routes completed by contractors were within the one-kilometre tolerance[9] set by the contract.

Ongoing GPS dashboard reliability issues hinder the Division's ability to monitor contractor performance

The Auditor General originally recommended in 2020 that Transportation Services adopt real-time exception reporting to streamline and strengthen the verification process. However, progress on this front has been limited due to ongoing problems with the GPS dashboard since the pilot was first launched in February 2023.

The dashboard was developed by a third-party service provider contracted through the City's GPS vendor, as the vendor indicated they did not have the tools to meet City requirements at that time. It was intended to use telematics to deliver real-time route completion reports, enabling Transportation Services to monitor contractor performance and ensure compliance with service-level targets for snow clearing and salt application.

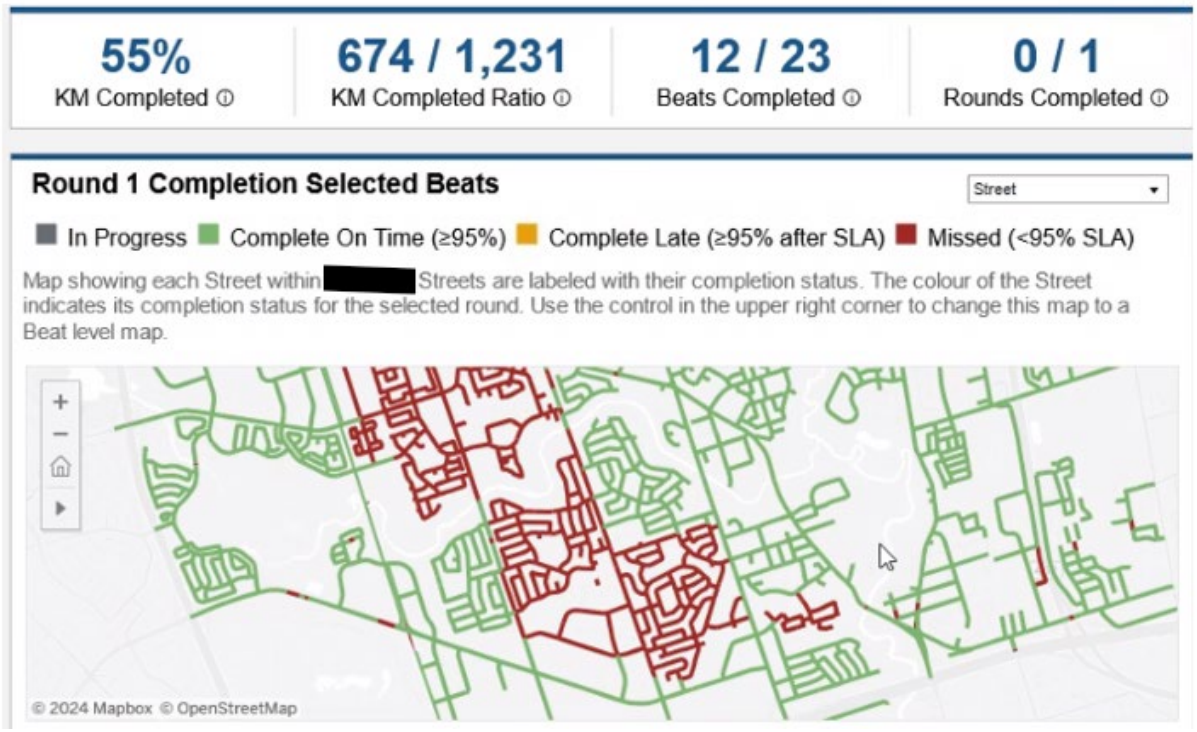
Although Transportation Services management communicates regularly with the service provider to address ongoing problems, the GPS dashboard has experienced persistent challenges since its launch in 2023—most notably, inaccurate data, slow performance, and overall unreliability.

Despite ongoing meetings and significant investment, some of these problems remain unresolved, even though the City is now over three years into the performance-based winter maintenance contracts. This hinders the Division's ability to efficiently monitor contractor performance and compliance with service level standards and the effectiveness of contractor oversight.

Figure 2 below illustrates an example of where the GPS dashboard shows that entire neighbourhoods were missed. This does not necessarily mean these neighbourhoods were missed but demonstrates the lack of reliability of this dashboard tool.

[9] Refer to **Figure 1**, which describes how the price adjustments are calculated and outlines how Transportation Services determines contractor compliance with service-level requirements. It also describes the kilometer tolerance set by the contract for route completion within the time specified.

Figure 2: GPS Dashboard Showing Missed Neighbourhoods



Given the program's performance-based contract model, combined with challenges during the 2025 winter events, it is critical that Transportation Services resolves reliability issues with the GPS dashboard before the next winter season.

Impact of GPS Dashboard Reliability on City's Ability to Monitor Contractor Performance and Apply Performance-Based Price Adjustments

$43K in liquidated damages and $381K in disincentives in 2023-24

For the 2023-24 winter season, Transportation Services applied approximately $43,000 in liquidated damages, primarily due to contractors departing late. An additional $380,900 in performance-based price adjustments (disincentives) was applied for missed sidewalks and streets during winter events.

$63K in liquidated damages and $195K in disincentives in 2024-25 (as of January 2025)

As of January 2025, Transportation Services had applied approximately $62,800 in liquidated damages and $195,450 in disincentives for the 2024-25 winter season. As of June 10, 2025, liquidated damages and disincentives for the remainder of the 2024-25 winter season were still under review or being finalized.

Because of dispute resolution processes in the contracts, it can take a long time to finalize liquidated damages and disincentives. As a result, Transportation Services has not been able to provide us with a reconciliation of the final amounts received by the City.

While Transportation Services has applied some disincentives based on manual processes performed by Transportation Services staff to compare GPS data with route maps, this is an inefficient, unsustainable, and unreliable method for consistently detecting all non-compliance.

Without a reliable and automated route completion verification process, Transportation Services cannot always efficiently and effectively apply disincentives or validate operating rate payments. This creates operational risks and can make it challenging for Transportation Services to hold contractors accountable. It is possible that the disincentive amounts could be higher if staff could more efficiently and effectively monitor route completion. It also impacts how Transportation Services measures and publicly reports on service-level-target achievement, as discussed below.

GPS Dashboard Issues Hindered Public Reporting on Winter Maintenance KPIs

Key Performance Indicators are not tracked and publicly reported

While Transportation Services developed key performance indicators (KPIs) and a scorecard to monitor contractor performance and service levels, they have not been publicly reported for 2022-23, 2023-24, and 2024-25. This is primarily due to ongoing issues with the GPS dashboard, which hindered accurate performance tracking and public reporting — an important concern given the significant public interest in winter maintenance services.

Given the size, complexity, and performance-based design of the winter maintenance contracts, Transportation Services must implement a robust and efficient GPS-based verification system. This system should be supported by reliable technology and proper documentation to ensure value for money, enforceable contract terms, and consistent delivery of high-quality winter maintenance services to residents.

A.2. Route Map Updates Were Delivered Late

Contractors are responsible for designing route maps for equipment

With the performance-based contracts, contractors are responsible for designing route maps using updated Geographic Information System (GIS) data provided by Transportation Services, which are to be uploaded to the GPS dashboard for real-time monitoring. The route maps don't just provide a visual for staff of the route each piece of equipment should take, they are also used for prioritization related to required service levels by road type and are critical in monitoring contractor performance.

Although the GPS dashboard includes route maps from the previous winter season, the contractors may change their routes each season. For example, contractors may reassign equipment to a different route, so it is important that updated route maps be received from contractors prior to the start of each winter season.

GPS dashboard did not have updated route maps

During the 2024-25 winter season, we found that contractors did not provide updated route maps until January 2025. As a result, staff had to assess, by road type, overall route coverage for the entire geographical area for each of the 11 contracts, instead of being able to efficiently verify whether each piece of equipment completed its specific route (using about 1,200 route maps) and whether those routes collectively covered the entire geographic area. This made the process less precise and more difficult to monitor in real time.

Updated route maps are needed for greater accountability – especially when areas are not properly serviced

The lack of detailed, route-wise tracking of equipment meant that staff could not effectively and efficiently monitor contractor performance or quickly trace the source of a delay or incomplete coverage (e.g., missed snow clearing for a segment of road/sidewalk) to specific operators or equipment.

Because the route maps were not updated, staff used contract area maps by road type for the 2024-25 winter season instead of individual equipment route maps. If the GPS dashboard is using outdated route maps, as was the case in 2024-25, then the actual route assignments won't match what's shown in the system. This can cause the dashboard to incorrectly flag service gaps or fail to flag them, as it doesn't recognize when different equipment (that has been re-assigned, replaced, or substituted) completes the work.

In addition, when equipment is moved between contract areas or when spares are deployed without appropriate notification, it creates gaps in visibility for Transportation Services staff. As a result, staff often need to contact the contractor to clarify which equipment covered which areas. If spares or reassigned equipment operate a route they are not originally assigned to, the GPS data for those pieces of equipment may not align with the designated route map and the dashboard may show gaps in service.

Recommendation:

1. **City Council request the General Manager, Transportation Services Division to implement a structured process for managing route map updates to improve accountability and enable effective real-time monitoring throughout the season by:**

    a. **providing updated GIS data and infrastructure changes to contractors in advance of the winter season;**

    b. **requiring contractors to submit finalized route maps incorporating these updates before the start of the season; and**

    c. **ensuring the finalized route maps are uploaded to the GPS dashboard before winter operations begin.**

B. Improving Field Audits for More Effective Oversight of Contractor Performance

Rigorous field audits are critical for Transportation Services to assess whether expected outcomes are being achieved by contractors

Given the change to a performance-based contract model, rigorous field audits are critical for Transportation Services to be able to assess whether the outcomes are achieved by contractors. Contractors are responsible for determining the number and types of equipment they use, designing the route maps, and assigning the appropriate equipment for each road type to these routes, in order to achieve the required service levels of the contract.

The GPS dashboard and field audits are the two main tools that Transportation Services uses to hold contractors accountable for achieving the required service levels and to determine whether any performance-based price adjustment needs to be applied.

Transportation Services conducts field audits of 20 street segments per contract area to verify whether the contractor has met the specified pavement outcomes

The Auditor General's 2023 follow-up report recommended that Transportation Services staff conduct the field audits required by its contracts and retain sufficient and appropriate documentation to support the application of price adjustments.[10]

The contract requires Transportation Services staff to complete field audits for 20 randomly selected street segments to verify whether the contractor has met the specified pavement outcomes — "Bare Pavement," "Centre Bare," or "Safe and Passable". For more details, refer to Recommendation #2 in the Auditor General's 2023 Follow-Up Report.

[10] See Section B.2 and Recommendation #2 in the Auditor General's 2023 report, Winter Maintenance Program Follow-Up - Status of Previous Auditor General's Recommendations & Processes to Hold Contractors Accountable to New Contract Terms.

Limited Coverage of Overall Area and No Additional Risk-based Samples

Transportation Services' field audits provide minimal coverage of overall contract area

During this follow-up, we noted from our sample review that the kilometers assessed per field audit report ranged from 0.06 km to 1.36 km. The total kilometers assessed during a single winter event ranged from 6.45 km to 9.38 km per contract area—representing just under two per cent of the total pavement length of about 510 km, on average, per contract area (based on approximately 5,600 km across all areas).

Contract does not prevent the City from selecting longer road segments for their field audit samples

The contract does not specify how many kilometers each field audit should cover and does not prevent the City from selecting longer road segments for these samples. By increasing the length of road segments where field audits are performed, Transportation Services could increase the coverage and assess contractor performance more comprehensively.

Additionally, staff reported that road segments were randomly selected, as required by the contract. However, no additional risk-based samples were taken to conduct additional field audits for streets where the GPS dashboard indicated errors or incomplete route coverage.

Additional risk-based sampling could help to identify the need for deficiency work orders or substantiate that routes were not fully completed

Risk-based sampling can serve as a secondary control to detect both service deficiencies and incomplete route coverage. While the contract requires 20 random samples for the purpose of applying price adjustments related to compliance with the desired pavement outcomes, additional risk-based sampling could help to identify service issues that may warrant deficiency work orders[11] or substantiate that routes were not fully completed within the allotted timeframe in the contract.

These additional samples may also help confirm through physical observation whether work was performed on routes the GPS dashboard deemed incomplete, allowing staff to investigate further.

[11] Deficiency work orders are created by staff when they identify a deficiency that must be corrected by the contractor.

Risk-based sampling can also help to identify instances where equipment is used that cannot meet the required pavement outcome

Risk-based sampling can also help to identify instances where equipment that cannot meet the required pavement outcome is used. As part of our follow-up review, we reviewed videos, photos, and complaints received by a Councillor's office, which the Councillor's office had also provided to Transportation Services. One of the complaints was related to using equipment on a local road which was not able to meet the required pavement outcome, at least not with one pass. In this incident, the equipment not only did not achieve the pavement outcome, but also became stuck in the snow and needed to be pulled out by another piece of equipment. See **Figure 3** below.

Figure 3: Single Axle Truck Used for Local Road Plowing

We followed up with staff who informed us that this vehicle meets the City's technical specifications required for a single axle vehicle used on local roads, although under the previous contract model this type of vehicle was only used for salting, not plowing.[12]

[12] Our 2023 follow-up report found that Transportation Services accepted contractor substitutions of 69 triaxle and 37 tandem-axle trucks with lower-capacity single-axle trucks, without any reduction in daily rates applied based on the originally contracted, larger capacity tandem and tri-axle trucks. Refer to Table 6, Page 40-42 of the Winter Maintenance Program Follow-Up, 2023 report. As of March 14, 2025, according to Transportation Services' Equipment Master List for the new 2022–2029 contracts, the contractors had a total of 141 single-axle trucks across all contract areas.

Under the current performance-based contract model, Transportation Services no longer determines the specific equipment used, other than providing the required technical specifications. In this case, the contractor would need to make sure the equipment they chose to use continued to plow until the required pavement outcome was achieved.

This complaint was not the only one of this nature and is also an example of a potential trend in complaints that should have been identified, reviewed, and followed up with the contractor(s) (discussed in Section C.2). Transportation Services should also review whether this is a systemic issue with contractors using single-axle vehicles on local roads, ensure contractors achieve the required pavement outcomes within the time specified in the contract when single-axle vehicles are used on local roads, and apply performance-based price adjustments when contractors do not meet performance requirements.

Risk-based field audits, guided by analyzing complaint trends, can identify equipment issues

The above example is another reason why properly conducted risk-based field audits, guided by the analysis of complaint trends, may help with the early identification of contractor performance issues, especially when those issues result from the use of improper or inadequate equipment.

Field Audits Need to be Properly Documented

No field audit reports we reviewed documented any contractor deficiencies

We reviewed 100 field audit reports from five contract areas (20 from each area) and found none of them documented any contractor deficiencies. However, the limited detail in the reports raises concerns about the adequacy of the inspections and the quality of documentation.

Over half of the sampled field audits had one or more documentation issues

We found that four of the five contract areas had missing information in the field audit reports and over half of the reports contained one or more pieces of missing information. For example, missing inspection time and location, the total distance inspected, and the inspector's name and signature. We also noted inconsistencies between contract areas in how staff filled out the field audit reports. For example, we found no issues in one contract area, while the other four had multiple different issues.

Proper documentation is critical, as field audit reports are used to evaluate whether the desired pavement outcomes were achieved, which directly affects performance-based price adjustments (disincentives).

These records may also be used as evidence in legal claims arising from incidents such as slip-and-falls. It is important for Transportation Services to fully implement the outstanding recommendations and to address the new recommendations we've provided in this report.

Table 2 below summarizes the issues found in our review of field audit reports for each of the sampled contract areas. Figures 4 and 5 below are examples of incorrectly filled-out field reports.

Table 2: Summary of Issues in Field Audit Reports by Contract Area

Issue Type	Number of Reports with Issues				
	Contract 1	Contract 2	Contract 3	Contract 4	Total Issues
Missing Overall distance inspected (KM)	20	7	8	11	**46**
Missing Kilometres Assessed	20	-	-	-	**20**
Missing Street Names	20	-	-	-	**20**
Missing Signatures and/or Inspector Name	-	-	-	20	**20**
Missing or Incorrect Date/Time	20	1	-	-	**21**
Missing Report # (Report # not identified)	-	7	-	-	**7**
Total	**80**	**15**	**8**	**31**	**134**
Number of Reports with Issues	**20**	**8**	**8**	**20**	**56**

Note: Contract 5 had no issues.

Figure 4 – An example of an incorrectly filled-out field report (missing or incorrect information)

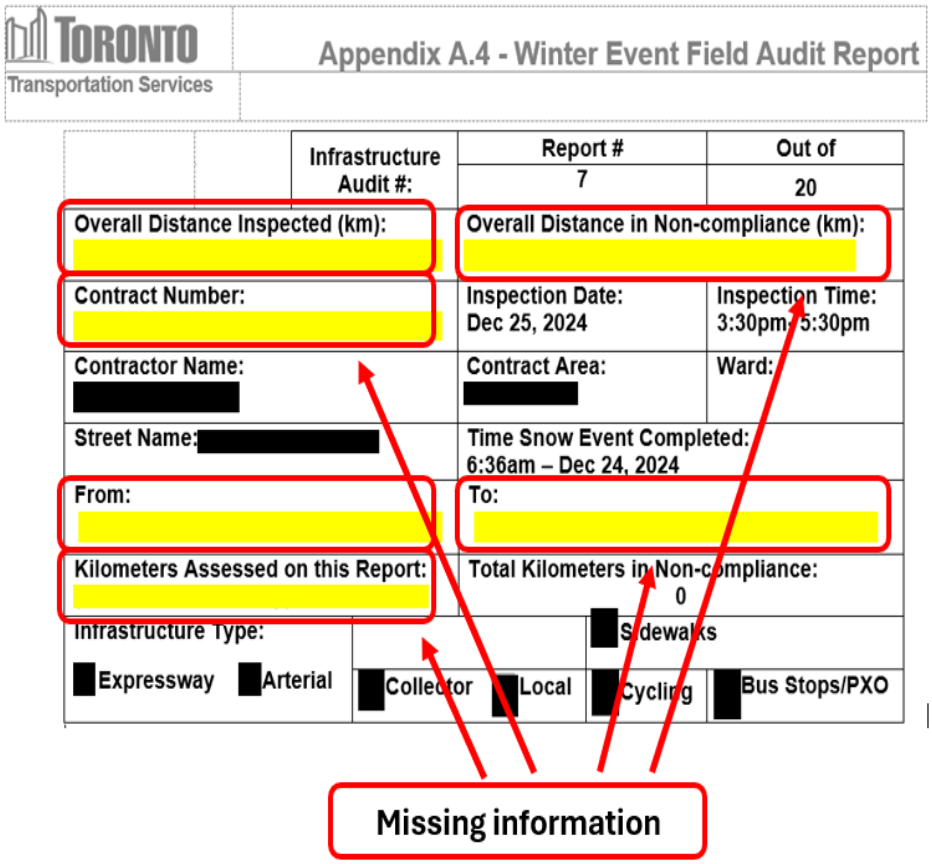
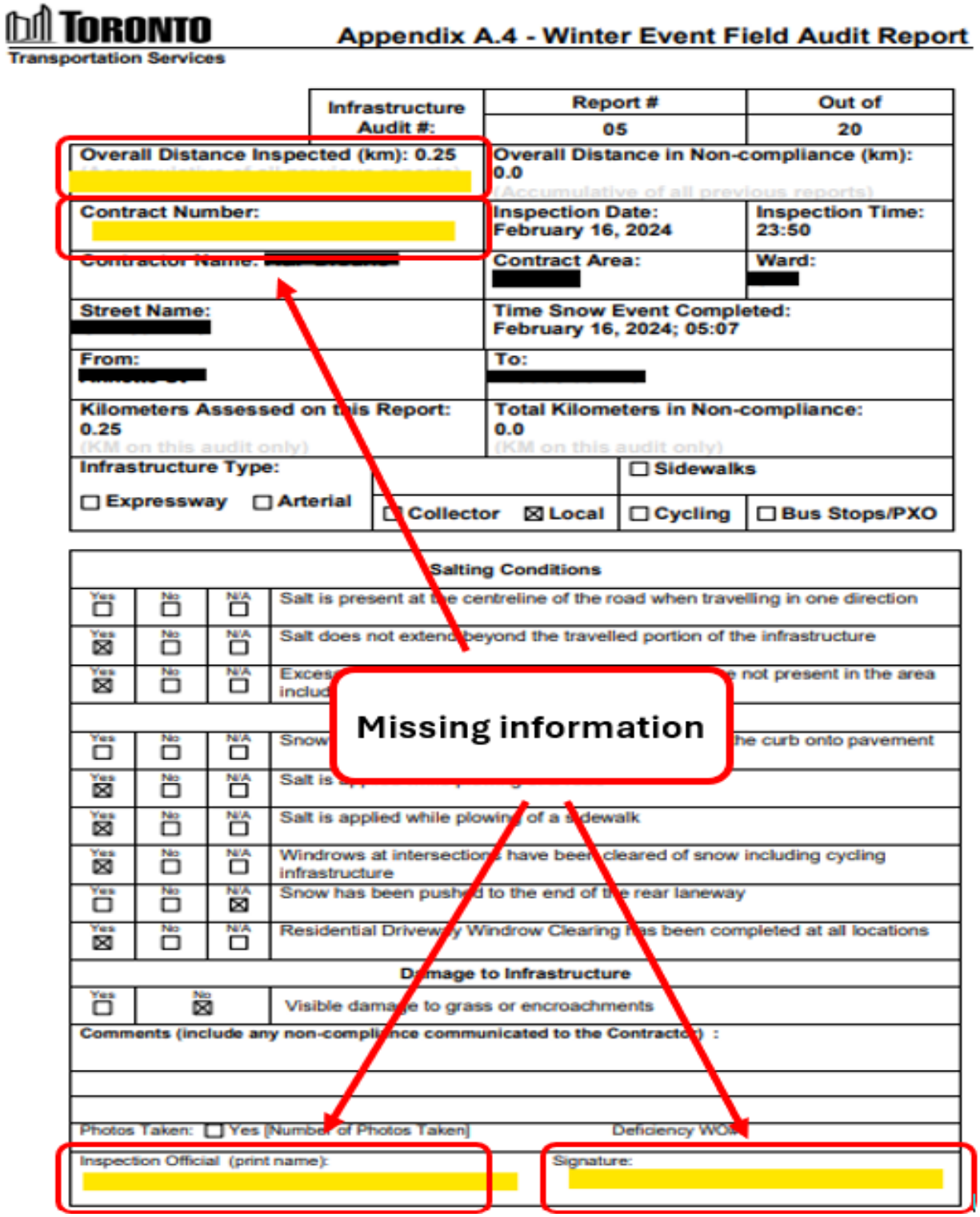


Figure 5 – An example of an incorrectly filled-out field report (missing name and signatures)



Recommendations:

2. **City Council request the General Manager, Transportation Services Division to incorporate longer street segments and additional risk-based samples into field audit reports to improve coverage, enhance quality assurance, and identify contractor deficiencies.**

3. **City Council request the General Manager, Transportation Services Division to:**

    a. **review whether there is a systemic issue with contractor performance due to contractors using single-axle vehicles on local roads; and**

    b. **ensure contractors achieve the required pavement outcomes within the time specified in the contract when single-axle vehicles are used on local roads and apply performance-based price adjustments when contractors do not meet performance requirements.**

C. Enhancing Other Operational and Compliance Controls

Transportation Services faces other operational and compliance challenges that hinder effective service delivery. These include difficulties tracking vehicle breakdowns and spare equipment use; delays in updating daily rate sheets with new equipment identification (IDs); and the need for more robust analysis of 311 service requests to identify trends and root causes, and to inform contractor performance evaluations. Details on these issues are outlined in the sections below.

C. 1. Strengthening Tracking of Equipment Breakdowns, Spares, and Replacements

The Auditor General's previous reports on winter maintenance highlighted the need for improved monitoring of vehicle breakdowns and spare vehicle use. Refer to Recommendation #7 in the Auditor General's 2020 Phase One Audit Report for more detail.

Contractors did not always promptly notify the City of equipment breakdown or spare deployment

Contractors are required to promptly notify Transportation Services staff when a vehicle breaks down or spare units are deployed. We observed instances where incident reporting was delayed, and staff could not verify whether the contractor resumed operations within the contract's one-hour timeframe requirement.

GPS reports are not used to proactively monitor for equipment breakdowns

Although GPS reports that flag excessive stop times are available, staff do not use them proactively to identify potential breakdowns. There is not enough emphasis on staff proactively monitoring breakdowns using available GPS data. Furthermore, as discussed earlier, the GPS dashboard—which could serve as an additional tracking tool—is still not fully functional, making it difficult to determine how breakdowns or delays in deploying spare equipment may be affecting operations.

Additionally, staff reported that the information provided by contractors is not always consistent or compliant with the Standard Operating Procedures (SOPs) outlined in the contract. For example, spare units were not always clearly identified in operating logs and daily rate sheets, making it difficult for staff to efficiently verify completed work and causing payment processing delays.

Incorrect equipment IDs in daily rate sheets

In a few cases, equipment that was either discontinued, incorrectly set up in EWMS, or replaced with new units, continued to appear on the daily rate sheet—and payments were processed under the old equipment IDs. This occurred either because contractors failed to notify staff of equipment changes or because staff did not update the new equipment ID in EWMS. While this did not result in overpayments for those we sampled, these updates are necessary to ensure the daily rate sheets reflect the correct equipment in use. Staff are expected to compare daily rate sheets with the GPS watchdog reports—run twice daily—which shows the last known location of each unit.

C. 2. Improving 311 Service Request Analysis

The Auditor General's 2020 report highlighted the need for Transportation Services to regularly analyze 311 service requests and legal claims data to identify additional indicators where contractor performance requires closer monitoring.[13] For further detail, please refer to Recommendation #22 in the Auditor General's 2020 Phase One Audit Report.

Further trend analysis needs to be performed and used to inform actions to improve contractor performance and desired outcomes

While some steps were taken to address this recommendation, such as developing dashboards to track service request data and preparing some analysis of legal claims data, additional efforts are still required. Data must be further analyzed for trends, which should then inform actions to improve contractor performance and desired outcomes.

[13] For further detail, please refer to Recommendation #22 in the Auditor General's 2020 report, Audit of Winter Road Maintenance Program - Phase One: Leveraging Technology and Improving Design and Management of Contracts to Achieve Service Level Outcomes

311 Service Request Process for Deficiency Work Orders

A deficiency work order is created in the EWMS, directing the contractor to take corrective action if a 311 service request is confirmed to be a deficiency

According to staff, when a 311 service request indicates a potential contractor deficiency related to winter maintenance, such as plowing or salting that requires immediate action, it is reviewed by a field investigator. If the deficiency is confirmed, a deficiency work order is created in EWMS, directing the contractor to take corrective action.

Similarly, when a service request involves property damage caused by a contractor during winter service delivery, staff create a follow-up work order in EWMS for a contractor to complete property damage repairs by May 31, following the end of the winter season.

Staff informed us that concerns raised through 311 service requests are discussed with contractors during regular update meetings. In addition, a follow-up letter is sent to contractors listing outstanding work orders related to property damage and reminding them to complete the necessary repairs by May 31.

According to the 311 dashboard, Transportation Services received 24,718 winter maintenance-related service requests in February 2025, and almost 29,000 service requests in total over the entire 2024-25 winter season.

51 deficiency and 1,598 follow-up work orders were issued to contractors during the 2024-25 winter season

Staff reported that these service requests resulted in 51 deficiency work orders issued to contractors during the 2024-25 winter season, compared to 31 in 2023-24. Similarly, staff issued 1,598 follow-up work orders for plow damages in 2024-25, compared to 1,469 in 2023-24.

Overall, there was a comparable number of deficiency and follow-up work orders between the two years. The 2023-24 winter season received only 51 cm of snowfall, well below Toronto's seasonal average of 121 cm; whereas 2024-25 had more frequent winter events, including a significant storm in February 2025 that brought up to 45 cm of snow over just a few days.

Detailed analysis of 311 service requests is needed

While 98 per cent of 311 service requests were marked as resolved by March 27, 2025, a detailed analysis of how service requests were resolved was not available at the time of our review.

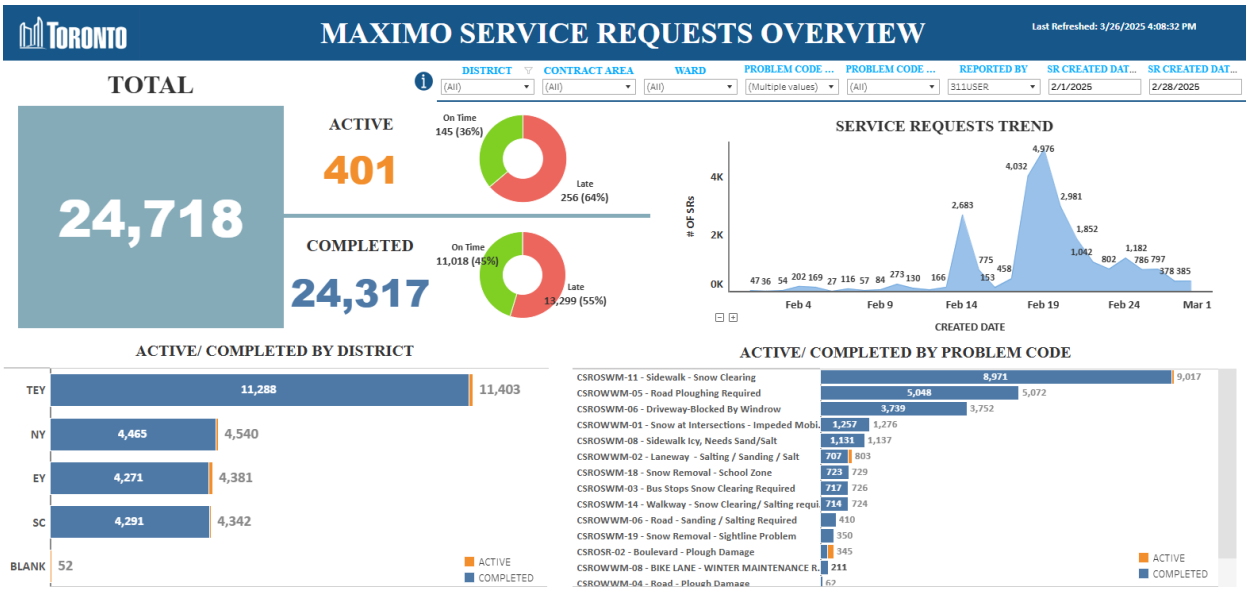
Figure 6 below illustrates the 311 winter maintenance service request dashboard for February 2025. Approximately 46 per cent of service requests originated from the Toronto and East York district (includes the downtown core) and about 36 per cent of the requests were related to sidewalk snow clearing.

While the dashboard provides some information, more detailed breakdowns were not readily available from this data to identify potential trends and route causes, such as:

- Which geographic areas had the highest complaints for road plowing and for sidewalk snow clearing, and what type of equipment was used to service these areas?

- What type of complaints were the highest for road plowing? (e.g., timeliness, pavement not cleared, equipment passed by without clearing to expected pavement outcome, improper vehicle to achieve coverage).

Figure 6: 311 Winter Maintenance Service Request Dashboard, February 2025



Thorough review of 311 data is necessary to ensure concerns are properly assessed and addressed

Using Data to Improve Contractor Performance Going Forward

Transportation Services should examine the reasons for the high volume of service requests, why so few led to formal deficiency work orders, and how these issues were resolved. While there may be valid explanations, such as duplicate complaints or the public being unaware of service levels, a thorough review is necessary to ensure concerns are properly assessed and addressed.

At a minimum, a comprehensive analysis of these service requests should include identifying:

- the most frequent or recurring service issues and in which geographic areas, routes, and road types;
- whether issues are linked to improper route planning, equipment failure, use of improper equipment types, or other reasons;
- whether complaints resulted in deficiency work orders or performance-based price adjustments (disincentives), and any gaps in follow-up, underreporting of deficiencies, or overreliance on “resolved” status without adequate verification; and
- discrepancies between resident complaints and GPS data (e.g., residents report no service or inadequate service because of equipment type, but GPS shows otherwise—or vice versa), which are critical for validating performance data.

A more robust analysis will help Transportation Services to improve contractor oversight, prioritize operational improvements, and reinforce public trust in the City’s ability to deliver reliable and responsive winter maintenance services.

Conclusion

Since our last follow-up review, Transportation Services has taken steps to address some of our recommendations. Improvements include providing staff with a GPS watchdog report to verify equipment availability for daily rate payments and introducing a Winter Maintenance Contract Administration Manual as a guide for key procedures. However, despite these efforts, several critical issues remain.

The 2022–2029 contracts set performance expectations for different types of roads, sidewalks, cycle lanes, bus stops, and pedestrian crossovers. Contractors are required to (1) complete their routes within the specified timelines and (2) meet specified pavement outcomes, as established by the City's service levels.

Transportation Services relies on GPS dashboards and field audit reports to ensure these two core requirements of the performance-based contracts are being met. However, we identified that improvements are needed to both key oversight and accountability mechanisms for the Division to effectively and efficiently evaluate whether contractors are delivering services as expected.

Specifically, the GPS dashboard intended for monitoring route completion is unreliable, and updates to route maps were delayed. In addition, field audit samples provided minimal coverage of the overall contract areas and did not consistently include sufficient detail to verify performance and pavement outcomes. As a result, Transportation Services continues to face challenges in efficiently and effectively monitoring contractor performance and ensuring accountability.

Additional risk-based field audit samples could help Transportation Services better assess whether service levels are being met and identify service issues that may warrant deficiency work orders. In addition, a more robust analysis of 311 service requests could identify additional indicators where contractor performance needs closer monitoring.

In response to City Council's 2025 motion requesting confirmation of whether past Auditor General recommendations related to winter maintenance operations were implemented prior to the February 2025 winter storm, we conclude that although Transportation Services has made progress, key recommendations necessary to assess contractor performance and service level compliance were not fully implemented by the time of the February 2025 winter storm.

Overall, nine recommendations from our previous winter maintenance reports remain outstanding.

Nine prior recommendations not yet fully implemented; three new recommendations

The remaining nine recommendations from our previous reports, along with the three new recommendations in this report, will help management more efficiently and effectively monitor contractor performance, and report on service-level achievement for winter maintenance.

We express our appreciation for the co-operation and assistance we received from Transportation Services management and staff.

Follow-up Scope and Methodology

Process for Following Up Previous Auditor General Recommendations

The Auditor General follows up on the status of implementation of outstanding recommendations from her audits, investigations, and other reports. The purpose is to verify that Auditor General recommendations have been fully implemented and that intended benefits have been achieved. The follow-up process provides accountability and transparency for City Council and the public, by reporting on the City's implementation of our recommendations.

Refer to the Auditor General's 2025 consolidated follow-up report for the methodology used for our follow-up work. This winter maintenance-related follow-up work has been reported out separately to clearly report back on the motion adopted by City Council in March 2025.

March 2025 motion adopted by City Council for the Auditor General to review whether previous recommendations had been implemented ahead of the February 2025 storm

On March 26 and 27, 2025, Toronto City Council adopted a motion requesting the Auditor General to consider reviewing the City's winter maintenance operations in response to public concern over how a major snowstorm in February 2025 was handled. Specifically, City Council requested that the Auditor General review, among other things, whether previous Auditor General recommendations related to winter maintenance had been implemented by City management ahead of the February 2025 storm.

This follow-up report addresses that request by assessing whether management has implemented outstanding recommendations from the Auditor General's prior audits and responds directly to the relevant part of motion adopted by City Council (part b).

Our methodology

To validate whether management fully implemented our recommendations and to address the relevant part of the March 2025 motion adopted by City Council, our procedures included, but were not limited to, the following:

- reviewing Transportation Services' Winter Maintenance Contract Administration Manual
- walkthroughs of systems that staff and management currently use, including the GPS system, the new dashboard reporting tool, and the newly implemented Enterprise Work Management Solution

- interviews with and inquiries of Transportation Services Division management and staff that directly oversee operations under the winter maintenance service contracts, to obtain a broad understanding of how winter operations contracts are currently managed

- reviewing a sample of daily rate sheets and operating rate sheets against information in the City's GPS system

- reviewing examples of other available documentation (both in hard copy and in electronic formats) including, but not limited to, field audit reports, payment packages, and GPS reports

Our scope

At the beginning of our follow-up work, Transportation Services reported 19 recommendations as fully implemented. Our Office included all 19 recommendations in the scope of our work.

Our follow-up review focused on management's practices and processes around managing the current winter contracts which is in its third year of operation. Our testing procedures focused primarily on 2024-2025 winter activities.

Limitations for follow-up process

Because the GPS dashboard was unreliable and route maps were updated late, we were unable to use GPS data to verify whether contractors completed their routes. We requested information from staff for the manual reviews they performed to check route completion, however sufficient documentation was not retained for us to verify.

The Auditor General's follow-up of outstanding recommendations does not constitute a performance audit conducted in accordance with Generally Accepted Government Auditing Standards (GAGAS). However, we believe that we have performed sufficient work to validate management's assertions on the implementation of recommendations, and for our new findings and recommendations.

Exhibit 1: Recommendations Fully Implemented (Status Determined by the Auditor General)

Report Title: Audit of Winter Road Maintenance Program - Phase One: Leveraging Technology and Improving Design and Management of Contracts to Achieve Service Level Outcomes, 2020

Rec #	Recommendation
#2	City Council request the City Manager, to: a. coordinate with Heads of Divisions for those using GPS technology, including Transportation Services, to ensure the contract with the City's GPS vendor meets the needs of the Divisions and City. b. forward this audit report to all other Heads of Divisions for those using GPS technology and centrally oversee that the City's Divisions are fully utilizing GPS technology and letting go of inefficient manual processes.
#8	City Council request the General Manager, Transportation Services Division, to: a. ensure all vehicles, including spares, are properly marked with vehicle identification numbers, b. conduct daily physical verification of contractor vehicles on standby, including spares, and document and compare the observations to contractor standby logs, and c. require the contractor to obtain prior approval from the contract administrator when a vehicle needs to go off-site for any reason and document the expected return date.
#11	City Council request the General Manager, Transportation Services Division, to reassess and document the rationale for liquidated damages amounts in the next contract cycle taking into account past claims against the City and other potential losses, to ensure that the liquidated damages amounts are fair and supportable.
#13	City Council request the General Manager, Transportation Services Division, to establish a formal process to: a. ensure GPS devices are installed and functioning in all contractor vehicles, including spares; b. track all GPS devices and monitor them regularly to ensure the devices are functioning properly; c. periodically reconcile GPS billings; d. monitor and ensure GPS functionality issues are being reported to the GPS vendor and repaired on a timely basis; and e. monitor the calibration and functionality of salt spreaders.
#18	City Council request the General Manager, Transportation Services Division, to ensure that the management and payment for services is consistent with the express terms of the contract for the next contract cycle.

Report Title: Winter Maintenance Program Follow-Up: Status of Previous Auditor General's Recommendations & Processes to Hold Contractors Accountable to New Contract Terms, 2023

Rec #	Recommendation
#1	City Council request the General Manager, Transportation Services Division to ensure all substituted equipment have been approved through the appropriate change order process, and ensure in future years, where the contractor requests the use of substitute equipment, that the Division ensures that the proposed rate is reflective of existing contract pricing, or if no existing contract pricing is applicable, comparable contract pricing for what the equipment can deliver.
#3	City Council request the General Manager, Transportation Services Division to ensure activations for each winter event are accurately captured electronically to support monitoring contractor compliance with contract requirements on equipment activations and mobilizations.
#4	City Council request the General Manager, Transportation Services Division to implement a process to ensure all contractor deficiencies related to winter maintenance services are captured in a timely manner in a central system that facilitates monitoring effective contractor performance.

Exhibit 2: Recommendations No Longer Applicable (Status Determined by the Auditor General)

Report Title: Winter Road Maintenance Program – Phase 2 Analysis: Deploying Resources, 2021

Rec #	Recommendation
#3	City Council request the General Manager, Transportation Services to: a. identify and remediate data entry errors and omissions in the Toronto Maintenance Management System database for its winter maintenance program as part of an ongoing quality control process; and b. implement system-based controls such as data edit controls to validate data entry and protect key fields in the Toronto Maintenance Management System database.
#4	City Council request the General Manager, Transportation Services to use the data from its Toronto Maintenance Management System database to measure and monitor contractor performance, analyze operational trends and inform decision-making.

Exhibit 3: Recommendations Not Fully Implemented (Status Determined by the Auditor General)

Report Title: Audit of Winter Road Maintenance Program - Phase One: Leveraging Technology and Improving Design and Management of Contracts to Achieve Service Level Outcomes, 2020

Rec #	Recommendation	Management Response
#1	City Council request the General Manager, Transportation Services Division, to fully utilize the GPS technology available, which includes real-time exception reports, notifications, and route completion and performance reports, to better monitor contractor performance.	A GPS-based Winter Maintenance Dashboard was created in 2023 and improved continuously since then but is still not fully functional. Transportation Services and Fleet Services have been continuously working with the vendors to rectify the two remaining outstanding issues. City staff commenced are aiming to have all issues resolved and the Winter Maintenance dashboard fully functional for use during the 2025/2026 winter season. The issues include data smoothing and better incorporation of the salt and plow sensors to improve the percentages that have actually been completed during activations. These final updates to the dashboard will improve staff's ability to use the tool for consistent performance monitoring. To address these gaps in the dashboard since 2023 and enable staff to monitor contractor performance during the winter season, they have been utilizing the route completion function in the myGeotab portal to verify if the routes were completed within the maximum operating time and checking the performance outcome with field audits. Timeline to completion: Q1 2026
#5	City Council request the General Manager, Transportation Services Division, to ensure staff use GPS information and reporting to monitor route completion, departure and return times, late starts, excessive stop times, and vehicle locations for operational as well as standby purposes, and assess liquidated damages where applicable.	In addition to the extensive training staff received at the outset of these contracts, additional staff training has been completed every year prior to the start of the winter season to improve their skill and comfort with the dashboard tool, communicate clear expectations for consistent use of GPS information to monitor route completion, departure and return times, late starts, excessive stop times and vehicle locations for operational as well as standby purposes and assess liquidated damages where applicable. The Winter Maintenance Dashboard has been created but is still not fully functional as described above in rec #1.City staff are aiming to have the dashboard fully functional for the 2025/2026 winter season. Additionally, the Standard Operating Procedure OM-SOP-W17 - Scorecard will be updated prior to the start of 2025-2026 winter season to incorporate suggested improvements from the AGO that will further improve oversight and communications. To support ongoing monitoring and address dashboard gaps since 2023, staff continue to use MyGeotab to track route completion, departure and return times, vehicle locations, and excessive stops. This helps verify performance, support standby oversight, and assess liquidated damages where applicable. Timeline to completion: Q4 2025

Rec #	Recommendation	Management Response
#7	City Council request the General Manager, Transportation Services Division, to improve how it documents and tracks vehicle breakdowns and the deployment of spare vehicles.	Transportation Services developed a training manual containing SOPs that was initially finalized and sent to staff on December 22, 2022. The updates to this training manual are delivered prior to the start of every winter season so that any new or modified practices can be consistently communicated. In addition to the annual distribution of an updated manual, direct training for staff is provided during the annual snow school training sessions. The processes and procedures that document and tracks both vehicle breakdowns and the deployment of spare vehicles is contained within the training manual. City staff will be using the exception reports in myGeotab portal to proactively track excessive stop times to identify vehicle breakdowns. City staff will continue to update the OM-SOP-W29 – Off-Site Vehicles and OM-SOP-W28 – Breakdown & Spares as improvements have been identified to improve the documentation and tracking. Timeline to completion: Q4 2025
#9	City Council request the General Manager, Transportation Services Division, to: a. improve documentation of assigned routes (and kilometers) and completed routes by contractor, as well as ensure explanations are documented for when routes are not fully completed, and b. examine the cases where routes do not appear to be completed for potential valid operational reasons and evaluate whether related issues need to be addressed.	The SOP to improve documentation of assigned routes (and km) and ensure explanations are documented for when routes are not fully completed was included in the training manual sent to staff on December 22, 2022. As with all other SOPs in the training manual, these are updated annually and distributed to staff prior to the start of every winter season. In response to this recommendation, staff will update the applicable SOP (OM-SOP-W12 – Field Audit) and ensure focused training on updates is provided during the 2025 Snow School sessions. Timeline to completion: Q4 2025

Rec #	Recommendation	Management Response
#14	City Council request the General Manager, Transportation Services Division, to: a. develop a policy and procedure manual for winter operations, including best practices for contract management, and best practices for assessing and charging liquidated damages; b. standardize processes and forms for monitoring contractor performance and for assessing and charging liquidated damages; and c. ensure staff verify and review contractors' operating and standby logs, using GPS data, for accuracy of timing and services provided before approving payment.	The SOP for liquidated damages was included in the training manual sent to staff on December 22, 2022, and has been updated annually since then. Based on the Auditor General's recommendations, staff will update the applicable SOP (CDDI-SOP-W23 – Price Adjustments and Deductions) and forms (OM-FM-WL09 – Liquidated Damage) prior to the 2025/2026 winter season. The review and verification of the Contractors operating/standby logs will be formalized in the SOPs. Re-training will occur at the 2025 snow school sessions. Timeline to completion: Q3 2025

Rec #	Recommendation	Management Response
#20	City Council request the General Manager, Transportation Services Division, to: a. develop meaningful Key Performance Indicators (KPIs) to measure the achievement of Council-approved service levels; b. develop performance metrics for the next contract cycle to measure and monitor contractor performance; c. improve processes and documentation to have relevant and readily available information to measure the KPIs; and d. publicly report on the KPIs on at least an annual basis.	The Performance metrics are going to be communicated via the budget notes that are published and will also be included in the annual winter report to Council starting July 2026 and every year moving forward. These KPIs show how often the service levels are met for each activation per specific road classification and are retrieved from the Transportation Dashboard at the end of each winter season. Timeline to completion: Q3 2026

Rec #	Recommendation	Management Response
#21	City Council request the General Manager, Transportation Services Division, to work with the GPS vendor to configure the: a. route completion report to provide accurate information, and develop other GPS reports for measuring contractor performance and service levels; and b. GPS system's geofencing feature to monitor contractors' adherence to their designated routes.	As described in the management response to # 1 above, additional updates to the Winter Maintenance Dashboard are underway and anticipated to be completed prior to the beginning of the 2025/2026 winter season. The issues include data smoothing and better incorporation of the salt and plow sensors to improve the percentages that have actually been completed during activations. These final updates to the dashboard will improve staff's ability to use the tool for consistent performance monitoring. The route completion will be based on the winter Vendor's snow clearing beats to ensure adherence to their designated routes, which will negate the need for geofencing. Timeline to completion: Q3 2025
#22	City Council request the General Manager, Transportation Services Division, to analyze legal claims information and 311 service requests on a regular basis to provide additional indicators of where contractor performance needs closer monitoring.	The SOP for Service Request/311 tracking (SOP CI-SOP-W21A – 311 SR Tracking) will be updated prior to 2025/2026 winter season and staff training will be conducted during the snow school training sessions. There is ongoing analysis of 311 requests being conducted by staff and the initial review of Service Requests received during the major snow event was included in the response to the administrative inquiry found at: https://www.toronto.ca/legdocs/mmis/2025/cc/bgrd/backgroundfile-254077.pdf Analysis of 311 requests will be conducted annually moving forward. Timeline to completion of SOP Update: Q4 2025

Report Title: Winter Maintenance Program Follow-Up: Status of Previous Auditor General's Recommendations & Processes to Hold Contractors Accountable to New Contract Terms, 2023

Rec #	Recommendation	Management Response
#2	City Council request the General Manager, Transportation Services Division to make the necessary updates to the Winter Maintenance Contract Administration Manual, provide continuing training, and ensure consistent and ongoing compliance over the duration of the contracts to ensure: a. Staff verify that equipment is at the designated City Depot in accordance with the contracted specified delivery mobilization and demobilization dates for every winter season and retain sufficient and appropriate records of such verification; b. Staff appropriately determine instances where liquidated damages should apply and to retain sufficient and appropriate records to support the Division's application of liquidated damages; and c. Staff perform the required field audits and retain sufficient and appropriate documentation of their observations to support the Division's application of price adjustments.	The SOP for equipment verification, liquidated damages and field audits was included in the training manual sent to staff on December 22, 2022. Prior to the start of every winter season, an updated manual is sent to staff and training for staff on the manual is provided during the annual snow school. Staff will update the applicable SOPs and forms prior to the 2025/2026 winter season. These include the following: • OM-SOP-W13 – Equipment Activation • OM-SOP-W17 – Scorecard • OM-SOP-W12 - Winter Field Audit Timeline to completion: Q3 2025

Exhibit 4: Winter Maintenance Service Levels Included in the 2022-29 Contracts

Winter Maintenance Service Levels

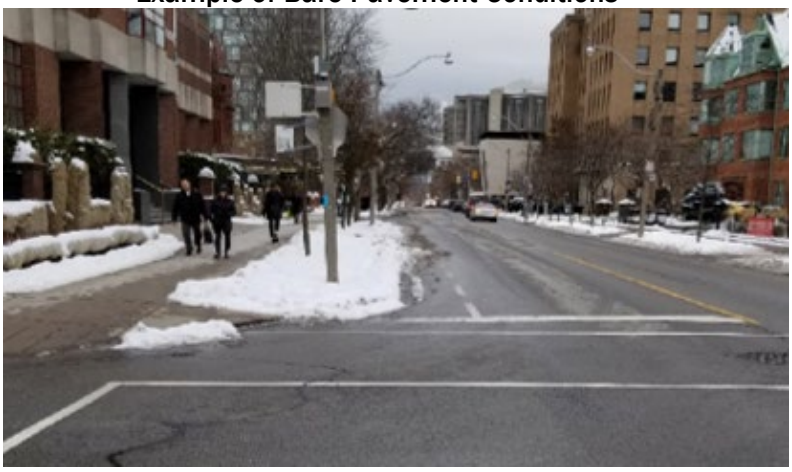
Activity	Initiation Level	Notification Period	Mobilization Period	Maximum Operating Time	Required Outcome
Direct Liquid Application					
Expressway / Arterials / Collectors	As Required	1 hour	30 mins	6 hours	Visible Salt Residue Per Lane
Salting Operations					
Expressways	< 2.5 cm	15 mins	30 mins	2 hours	Bare Pavement
Arterials	< 5 cm	15 mins	30 mins	4 hours	Bare Pavement
Collectors	< 8 cm	1 hour	30 mins	4 hours	Centre Bare
Local Roads	< 8 cm	1 hour	30 mins	8 hours	Safe and Passable
Laneways	24 hours from end of snowfall				Safe and Passable
Plowing Operations					
Expressways	2.5 cm	1 hour	30 mins	2 hours	Bare Pavement
Arterials	5 cm	1 hour	30 mins	6 hours	Bare Pavement
Collectors	8 cm	1 hour	30 mins	8 hours	Centre Bare
Local Roads	8 cm	2 hours	30 mins	14 hours	Safe and Passable
Windrow Clearing	Windrow height exceeds 25 cm	N/A	N/A	Same as adjacent roadway plus 2 hours	Safe and Passable
Combined Salting & Plowing Operations					
Sidewalks	2 cm	2 hours	30 mins	12 hours	Safe and Passable
Bus Stops & Pedestrian Crossovers	2 cm	2 hours	30 mins	12 hours	Safe and Passable
Separated Cycle Tracks & Multi-use Paths	2 cm	1 hour	30 mins	8 hours	Bare Pavement
On-road Cycle lanes				8 hours	Safe and Passable
Hand Crew		2 Hour	30 mins	Same as Work Area	

1. The City may initiate salting or plowing earlier than the indicated standard.
2. Following plowing operations on expressways, arterials, collectors, and locals, the Contractor is required to salt the infrastructure at no additional cost to the City.
3. Bare Pavement means pavement conditions whereby 90% of all pavement is free of snow, slush, and ice.
4. Centre Bare means pavement conditions whereby 90% of all pavement on the lanes adjacent to the centre line is free of snow, slush, and ice, and any remaining lanes must be safe and passable.
5. Safe and Passable for on-road cycle lanes (also known as non-separated bike lanes) means pavement conditions whereby all loose snow, slush and ice are pushed aside to provide a path with 60% of the infrastructure as Bare Pavement. Snow pack conditions may be present on those areas that are not required to be Bare Pavement.
6. Separated cycle tracks must be cleared by the Contractor as part of adjacent sidewalk Operations. Bare Pavement for separated cycle tracks means pavement conditions whereby 90% of all Pavement is free of snow, slush, and ice.

Exhibit 5: Definitions of Pavement Outcomes

Bare Pavement: Pavement conditions whereby 90% of all pavement is free of snow, slush, and ice.

Example of Bare Pavement Conditions



Centre Bare: Pavement conditions whereby 90% of all pavement on the lanes adjacent to the centre line are free of snow, slush and ice, and any remaining lanes, must be Safe and Passable, however, all loose snow, slush and ice on pavement must be pushed as close to the curb as possible and in no circumstances can any loose snow, slush and ice be more than 75 cm from the curb.

Example of Centre Bare Pavement Conditions

Safe and Passable: Pavement conditions whereby (i) all lanes are substantially cleared and have visible salt and/or windrow present from salting and/or plowing activities; (ii) all lanes must have less than 8 cm of remaining snow cover; and (iii) all lanes may have remaining loose snow, slush, and ice.

Example of Safe and Passable Pavement Conditions

Exhibit 6: Liquidated Damages Clauses Excerpted from the New Winter Maintenance Contracts

Item	Section Number	Event	Liquidated Damages Paid by Vendor	Cost Per Occurrence	Unit
1	2.7.2	Failure to calibrate all Equipment seven (7) days prior to the Winter Season; or failure to calibrate all Equipment on a monthly basis	$1,000.00 per day per piece of Equipment that is not calibrated in accordance with the Contract	$ 1,000.00	Day
2	2.6.10	Failure to provide verification to Contract Administrator that a GPS/AVL device is working	$400.00 per day per piece of Equipment	$ 400.00	Day
3	2.1	Failure to submit CVOR abstract in accordance with the Contract	$400.00 per day per piece of Equipment	$ 400.00	Day
4	3.1, 3.2	Failure to apply any required signage on a piece of Equipment	$1,000.00 per day per piece of Equipment	$ 1,000.00	Day
5	4.3.3	Failure to provide shift schedule to Contract Administrator in accordance with the Contract prior to October 15 each Winter Season	$100.00 per day	$ 100.00	Day
6	5.4.4	Failure to leave a Depot within the applicable Mobilization Period	$10 per minute and loss of Daily Rate per piece of activated Equipment in the Depot after the expiry of the Mobilization Period	$ 10.00	Minute
7	5.7	Failure to spread salt or pre-treated salt in accordance with the Contract	$360.00 per failure	$ 360.00	Each
8	5.11	Failure to correct a deficiency within 2 hours of notification by the Contract Administrator	$400.00 per hour starting two hours after notification	$ 400.00	Hour
9	5.12	Failure to repair damages to property prior to May 31 annually	$1,600.00 per day	$ 1,600.00	Day
10	7.2.7	Failure to submit a Depot plan in accordance with Contract	$100.00 per day	$ 100.00	Day

Appendix 1: Management's Response to the Auditor General's Report Entitled: "Winter Maintenance Program Follow-Up 2025: Status of Auditor General's Previous Recommendations"

Recommendation 1:

City Council request the General Manager, Transportation Services Division to implement a structured process for managing route map updates to improve accountability and enable effective real-time monitoring throughout the season by:

a. **providing updated GIS data and infrastructure changes to contractors in advance of the winter season;**

b. **requiring contractors to submit finalized route maps incorporating these updates before the start of the season; and**

c. **ensuring the finalized route maps are uploaded to the GPS dashboard before winter operations begin.**

Management Response: ☒ Agree ☐ Disagree
Comments/Action Plan/Time Frame: City staff will work with the contractors to ensure contract terms are satisfied related to route map updates as per the recommendation. Timeline to completion: Q4 2025

Recommendation 2:

City Council request the General Manager, Transportation Services Division to incorporate longer street segments and additional risk-based samples into field audit reports to improve coverage, enhance quality assurance, and identify contractor deficiencies.

Management Response: ☒ Agree ☐ Disagree
Comments/Action Plan/Time Frame: Staff will revise the field audit process, including generating longer street segments and to automate field audit forms that will identify completion issues prior to completion. Risk based samples will be added to the review based on problem spots identified by the SR dashboard to enhance quality assurance. Timeline to completion: Q4 2025

Recommendation 3:

City Council request the General Manager, Transportation Services Division to:

a. **review whether there is a systemic issue with contractor performance due to contractors using single-axle vehicles on local roads; and**

b. **ensure contractors achieve the required pavement outcomes within the time specified in the contract when single-axle vehicles are used on local roads and apply performance-based price adjustments when contractors do not meet performance requirements.**

Management Response: ☒ **Agree** ☐ **Disagree**
Comments/Action Plan/Time Frame: Utilizing field audits and service request data, staff will monitor the contract zones where single-axle equipment is providing winter salting and plowing services to ascertain that requirement performance outcomes are satisfied and share the information with the applicable contractors. Timeline to completion: Q2 2026

AUDITOR GENERAL TORONTO