

AUDITOR GENERAL

Halifax Regional Municipality



Management of Winter Operations Audit

June 2025

June 11, 2025

The following audit of **Management of Winter Operations**, completed under section 50(2) of the Halifax Regional Municipality Charter, is hereby submitted to the Audit and Finance Standing Committee of Regional Council.

Respectfully,

Original signed by

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Table of Contents

Audit Overview	3
Audit Results	4
Winter Service Standards: Performance Not Measured.....	4
Public Works does not assess performance against standards	4
No other winter operations performance measures developed	6
Service standards assigned to roads and sidewalks	7
Poor Contract Management	7
Appropriate terms and conditions, but minimal monitoring	7
Operational issues and deficiencies not tracked	8
No support showing post-season repair work reasonably completed.....	10
Contract requirements not always obtained	11
Improvements Needed to In-House Winter Operations.....	13
Many in-house operations management processes informal	13
Process to assign service requests; some gaps noted.....	16
Gaps in training and documentation; not centrally tracked	17
Other – Data & Documentation	18
Service request data has gaps to support monitoring	19
Some gaps in information; staff said due to email retention policy	20
Background	21
About the Audit.....	23
Appendix 1 – Recommendations and Management Responses	25
Appendix 2 – Winter Operations Service Standards.....	29
Appendix 3 – Snow & Ice Clearing Contracts	30
Contact Information.....	31

Management of Winter Operations Audit

HRM IS NOT EFFECTIVELY MANAGING WINTER OPERATIONS TO ENSURE SNOW & ICE CLEARING IS CONSISTENT WITH SERVICE STANDARDS



Winter Operations Performance Not Assessed

- No formal assessment of contractor or in-house operations against service standards
- No other performance measures developed

HRM Declared Weather Events
2022-23: 17 events
2023-24: 18 events

Nine Contract Snow & Ice Clearing Zones – \$30 Million Annually

Contractor Performance Not Appropriately Monitored

- Mostly informal, no documented guidance
- No tracking of performance issues
- No monitoring to confirm complaints are addressed in a timely manner
- Lack support post-season repair work completed



HRM does not effectively manage the contracts to ensure adequate service is received and terms and conditions are met



In-House Operations Management Processes Mostly Informal

- Lack formal monitoring to assess performance
- No documentation to show complaints addressed
- Most snow damages repaired in timely manner
- Gaps in staff training, but all had licenses

Seven In-House Snow & Ice Clearing Zones – Annual Cost Not Known

Auditor General Halifax Regional Municipality

June 2025

Audit Results

Winter Service Standards: Performance Not Measured

Public Works does not measure performance against Council's approved winter operations service standards for either in-house operations or contractors and has not established other performance measures for the winter operations program. There is no way to know whether winter operations meet the standards as management does not collect the information necessary to measure this.

In 2020, Regional Council approved winter operations service standards. The service standards establish when clearing begins, and the expected road and sidewalk conditions at the end of a weather event, including when clearing should be completed. This helps plan winter clearing efforts to improve safety and accessibility and minimize the risk of hazards and accidents. Streets and sidewalks with a greater safety risk, such as main roads and emergency routes, would be prioritized for snow clearing.

While operations crews clear snow and ice from roads and sidewalks, there also needs to be appropriate monitoring to ensure clearing efforts are consistent with the winter service standards. These standards are intended to ensure residents and service providers, such as emergency vehicles and transit operators, can safely access roads and sidewalks. Failure to monitor that this is occurring puts all those services, along with residents, at an unnecessarily increased risk.

Public Works does not assess performance against standards

Monitoring of snow and ice clearing operations is mostly informal and does not assess in-house or contractor performance against the winter operations service standards.

Public Works assigns supervisors to monitor in-house and contractor snow and ice clearing operations. However, they are not required to formally assess and report against winter service standards. Management told us both in-house and contract supervisors complete summary reports after a weather event, but we found these are not adequate to measure against standards. The reports do not define what information needs to be collected as the template is simply a text box for staff to add notes on the event, with little guidance provided.

For 10 HRM-declared weather events from the audit period, we reviewed three in-house and three contract clearing zones and found 22 of 30 expected in-house supervisor reports and 29 of 30 contract supervisor reports were completed.

For the completed reports, there was no formal or consistent assessment of operations. While the notes may contain information on road conditions and occasionally reference the standards, it was not sufficient to determine what was monitored or confirm if standards were met.

HRM-Declared Weather Event

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Public Works declares a weather event for:

- Snowfall of two or more centimeters
- Freezing rain more than 30 minutes but less than two hours

(Source: HRM Public Works)

Management said they cannot measure against the standards because they do not have the required technology. While manually assessing the conditions of all roads and sidewalks in HRM would not be feasible, there are alternative approaches that would allow management to conclude whether standards are being met. For instance, selecting a sample of roads and sidewalks to monitor and document during each storm. Then ensuring sufficient information is retained to show the state of each of those roads and sidewalks as compared to Council's service standards. Currently, there is no organized and consistent approach to measure against the standards and assess if they are achieved. Without this information, it is unclear how Public Works can effectively manage winter operations. It also undermines the value and importance of Regional Council's winter service standards.

Recommendation 1

Public Works should develop and implement a process to monitor in-house and contractor snow clearing operations against the service standards. This information should be documented and retained for each event.

Management Response

Agree. Public Works will create a process to measure service standard adherence for both in-house and contracted winter maintenance for each declared snow event. Public Works will work with the Asset Management Office to explore capacity within Cityworks to develop a reporting tool. This will allow specific information to be collected and retained centrally.

No other winter operations performance measures developed

Public Works management has not developed any other performance measures for the program area. In 2020, an external consultant recommended HRM implement specific and measurable key performance indicators (KPIs) to assess performance against the winter service standards and recommended potential KPIs. Management told us they did not implement them.

Public Works does not assess winter operations costs by area or kilometers cleared. The consultant recommended Public Works assess the winter control costs per household. Management told us they do not calculate the cost of in-house winter operations each season. While some in-house snow and ice clearing costs are captured centrally, staff salaries and fleet equipment costs are not included. Without tracking this information, management does not know the cost of in-house versus contracted snow clearing. Additionally, it becomes impossible to discuss the value or cost of changing the service standards.

There are also no performance measures related to service requests and complaints. Residents can submit requests related to snow clearing, damages, and other general compliments or complaints through the customer contact centres. While we found there are some timelines for response established, Public Works does not monitor against them. Additionally, there is no analysis of service requests. This information could potentially highlight performance issues, for example if a specific area receives a higher number of requests related to snow clearing issues. While additional monitoring would be required, this information could support where further improvements are needed.

Lastly, there is no analysis of fleet equipment downtime. While this data would be managed by Corporate Fleet, it could also be useful to inform winter operations performance.

Recommendation 2

Public Works should determine what data is needed to assess winter operations program performance, develop and implement processes to collect it, and measure and report on the results.

Management Response

Agree. Public Works will develop a policy to identify which data will be collected, the process to collect the data and the KPI's to be measured.

Service standards assigned to roads and sidewalks

Infrastructure Maintenance & Operations (IMO), the division within Public Works responsible for winter operations, has a process to maintain a current inventory of roads and sidewalks that require snow and ice clearing. We found updates were provided from other HRM business units or divisions during the audit period to identify new and changing inventory, and inventory changes were tracked in a spreadsheet. We sampled 13 additions and found they were communicated to the appropriate group responsible for snow clearing (in-house or contract zone).

In addition, the winter service standards are applied to public roads and sidewalks in an online mapping system. A priority rating is applied to the roads and sidewalks, which outlines the clearing timeline and conditions expected after a weather event. We tested 13 additions from the tracking spreadsheet and 13 additions from an exchange agreement with Nova Scotia Public Works, and found they were all in the online mapping system with a winter service standard applied.

While establishing service standards and applying them to roads and sidewalks is important, as we noted earlier, we expected management would also assess operational performance against these standards.

Poor Contract Management

Snow and ice clearing contract management practices are poor. HRM outsources most road and sidewalk snow and ice clearing services outside of the downtown core areas (Halifax and Dartmouth). In 2023-24, this cost approximately \$30.4 million. We identified significant gaps including:

- No formal policies and procedures to support contract monitoring activities.
- Contractor performance issues and deficiencies are not tracked.
- No complete list of repair work tracked and monitored.
- Lack of support for releasing final invoice payments.
- Many contractually required reports are not obtained.

Overall, Public Works is not effectively managing the contracts to ensure adequate service is received and terms and conditions are met.

Appropriate terms and conditions, but minimal monitoring

The nine snow and ice clearing contracts have adequate terms and conditions to protect public interest and achieve value-for-money. There are four road and sidewalk clearing contracts and five sidewalk-only clearing contracts. We found all contracts had terms and conditions which clearly outline the contractors' responsibilities and include appropriate penalties and clauses if adequate service is not received.

However, Public Works has not developed formal policies and procedures to ensure consistent and effective monitoring of contractor performance. For most processes, we had to inquire with management and staff to understand how they monitor the contracts and found it was mostly informal. There is no requirement to document monitoring activities outside of post-weather event reports. Management said contract supervisors keep their own notes, but there is no formal requirement to document monitoring activities or retain the information.

Vendor evaluations were completed for all nine contracts during the audit period and each had positive ratings with few issues noted. Management said liquidated damages (an amount paid by the contractor if they do not meet a requirement) have not been applied to snow and ice clearing contractors since 2019. With informal monitoring, and a lack of appropriate records to support contract requirements have been met, Public Works cannot support these assessments, nor could we determine if the evaluations were reasonable.

Recommendation 3

Public Works should define the level of monitoring required to ensure vendors comply with the contract terms and develop and implement procedures to support snow and ice clearing contract monitoring activities.

Management Response

Agree. Public Works will develop a policy which will define the contract monitoring process. This will include procedures to standardize winter maintenance contract monitoring activities.

Operational issues and deficiencies not tracked

Public Works does not have a process to centrally track and manage contractor performance issues or deficiencies related to snow and ice clearing operations. We expected Public Works would have formal processes to manage and assess contractor performance. This information helps management identify recurring issues, track to ensure prior noted deficiencies are addressed, and assess overall performance.

As detailed earlier in this report, Public Works does not assess contractor performance against the winter operations service standards. In addition, many reports prepared by contract supervisors lacked information needed to support what was monitored, including if deficiencies were identified and if the contractor addressed them. Management said if there were issues with contractor performance it would be documented in the post-event summary reports. While we found a template for these reports, it contains no meaningful guidance on providing information necessary to measure contractor performance.

Of the 29 post-event summary reports reviewed, we found only eight reports documented gaps or deficiencies, of which three documented how they were addressed. The remaining reports did not comment on contractor performance outside of broadly commenting on road conditions. This level of monitoring does not provide sufficient information to assess contractor performance or compliance with service standards.

There is also no information to support that Public Works monitored and was satisfied with contractor performance on non-weather event dates. There may be safety issues to address on these days, for example icy conditions from sudden changes in temperature or hazards caused from prior snow clearing efforts. We reviewed 20 non-weather event dates from the audit period in three contract zones and found there was no information retained

to support monitoring for any of them. Management said monitoring is informal; supervisors are expected to review the daily reports and follow up with contractors as required. We expected there would at least be a process to document if follow up was required, including if the contractor appropriately addressed any concerns.

Non-Weather Event Date

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A date during the winter contract season (typically mid-November to early May) where weather conditions do not fit the criteria for HRM to declare a weather event. There may still be routine winter maintenance required, including addressing small snow accumulations and icy conditions.

There is no formal monitoring to confirm contractors address urgent and non-urgent complaints and requests. All nine contracts require the contractor to investigate and respond to complaints and inquiries. The contracts also detail the timelines for contractors to acknowledge and resolve complaints; for instance, safety complaints need to be resolved in two hours. Despite those requirements there is no formal monitoring to confirm the complaints are addressed, nor is there a requirement to document if contractors respond in a timely manner. Public Works' process is to close these requests in the system after they are sent to the contractor, unless a response is requested, and management said there is no requirement to add comments after they are closed. The contracts say HRM will routinely monitor contractor response times, and their performance will be a factor considered in the annual review process. It is not possible for management to assess this with the information retained.

Recommendation 4

Public Works should develop and implement a process to centrally track and document contractor deficiencies. The information retained should be sufficient to assess vendor performance and apply penalties and damages as appropriate.

Management Response

Agree. Public Works will standardize the process to track and retain contract deficiencies to assess vendor performance. This will occur through a reporting tool which will allow the collected data to be stored in a centralized location.

No support showing post-season repair work reasonably completed

Contractors are responsible to address damages caused by snow and ice clearing activities by June 1st. However, Public Works has not implemented processes to confirm this work is satisfactorily completed.

Public Works has not defined how they assess whether post-season repair work is reasonably completed. There is no guidance for what is required to effectively monitor snow damage repairs, and no complete list of damages identified and tracked for each contractor. While requests received from residents are recorded in a system, staff said the contractor and contract supervisor may also identify damages and clean-up work, but these are not formally tracked or documented.

We reviewed 20 contractor-related snow damage service requests and found poor documentation to support appropriate repair work was completed and inspected.

- Seventeen requests were closed with limited or no details provided. Eight indicated simply the request was complete, while nine were closed without comments on completion.
 - For one of these, subsequent complaints from a resident identified incomplete work. Public Works are now planning to complete the repairs more than two years after the original request.
- One request is still open as it was originally incorrectly classed as in-house damages and was missed.
- Two requests said no repairs were required. One had detailed comments and appeared reasonable, the other lacked information to confirm how this was assessed.

Per the contracts, HRM holds back 10% of each invoice and will release the payments based on its verification that all damages are satisfactorily corrected. Management said they assess this based on professional opinion, but there is no documentation to support these opinions. They said supervisors are to inspect all public property damages, but do

not typically review or assess damage to private property. The contracts do not differentiate between public and private damages in releasing holdback funds.

We expected all required repairs and clean-up would be identified, tracked, and monitored for each contract to ensure work is satisfactorily completed before final payments are made on each contract.

Recommendation 5

Public Works should develop and implement a process to identify all required contractor post-season repair work, communicate it to the contractor, and track its completion. This information should be documented and retained.

Management Response

Agree. Public Works will develop a process to track all post-season repair work within Cityworks.

Recommendation 6

Public Works should define how they will monitor and assess post-season repair work has been satisfactorily completed. This information should be included and documented with procedures in Recommendation 3.

Management Response

Agree. Public Works will develop a process to confirm post-season repair work is completed and tracked within Cityworks. This will be included in the policy from Recommendation 3.

Contract requirements not always obtained

Public Works is not monitoring to confirm contract reporting requirements, and other non-performance related requirements, are obtained.

The reporting requirements for the nine snow and ice clearing contracts vary slightly but consistently include weather event-based reporting, as well as daily and weekly reports. For the 30 dates reviewed (10 weather events, 20 non-weather events), we found the daily morning reports were mostly (59 of 60) received but there were significant gaps for weather event reports and weekly updates.

Sample Results – Contractor Reports

Report	Applicable Contracts	Number of Reports Obtained*
Operational Plan (Weather event)	All	12/30
Operations Status (Weather event)	Sidewalk Only	0/10
Post Event Summary (Weather event)	Two Contracts	0/9
Morning Report (Daily)	Streets Only	59/60
Contractor Diary (Weekly)	All	58/90

*Note: We reviewed a sample of three contract zones per date, ensuring all contracts were tested. The total number of reports expected varies based on the applicable reporting requirement of each contract sampled.

The contracts also require contractors to provide monthly salt management reports. We assessed this for all nine contracts over the audit period (two six-month winter periods) and found most were received, only four of the expected 108 reports were not received.

Our testing showed that all nine contracts were missing at least one required report. The contracts all state that failure to meet the reporting requirements will result in the contractor paying a specified amount, known as a liquidated damage, for each occurrence. The amounts range from \$500 - \$2,000 depending on the contract. As previously mentioned, Public Works has not applied penalties or damages to contractors since 2019.

There were also some gaps noted in ensuring contractors complied with other contract requirements. We reviewed all nine contracts and found:

- Vendors for three contracts failed to submit annual hazard assessments.
- None had documentation to support Workers Compensation Insurance.
- All contract files had proof of commercial and general insurance (if required).

The contract requirements help protect HRM from financial and legal risks caused by the contractors' actions, as well as support appropriate monitoring. We expected Public Works would have implemented processes to ensure this information is obtained and taken steps to address missing requirements.

Recommendation 7

Public Works should determine what information they require from vendors to effectively manage and monitor snow and ice clearing contracts and implement a process to collect this information, including taking appropriate action if it is not provided.

Management Response

Agree. Public Works will review existing contract reporting requirements and revise the required reports contractors need to submit. A process will be implemented to centrally track reporting compliance.

Improvements Needed to In-House Winter Operations

Public Works also has in-house teams responsible for street and sidewalk snow and ice clearing operations, mostly in the downtown cores. We found many processes to manage in-house operations were informal, including monitoring and addressing complaints (service requests). While we found there is a process to ensure staff are trained for their position, the information is not well tracked.

Formal processes are important for ensuring consistency and protecting against the loss of key information if management were to leave their positions.

Many in-house operations management processes informal

Like contracted operations, we had to inquire with management and staff to understand the key management processes for in-house snow and ice clearing due to a lack of documentation.

Prior to the winter operations season, management said they have informal meetings to plan and prepare for the next season, which includes discussions on staffing, training and fleet. There is no documentation to show what was covered in these discussions so we could not assess if management implemented plans or addressed gaps. We found there is no formal post-season meeting or reporting from the prior year. This would provide an opportunity for management to assess performance, identify areas for improvement and support planning for the next season.

Management has implemented some processes to help winter works staff prepare for the season, but gaps were noted.

There is a mock snow day where employees familiarize themselves with their route and equipment. However, there is no reporting or documentation detailing the results of the mock snow day, what challenges were identified and how they were addressed.

Management said operations staff are required to complete a hazard assessment form for their route. These reports provide an opportunity to identify challenges, and potentially complete repairs, to ensure safer operations. We found the required form was not always completed. We sampled six routes from the audit period (day and night shift), and found only four of 12 assessments were completed.

Route maps are documented; we tested six routes and found there was a map for each one. Five maps did not detail the service standards.

Hazard Assessment

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Completed by all staff assigned to a winter clearing route prior to the winter season to identify potential hazards, such as:

- Overhead wires
- Gas lines
- Trees/ vegetation
- Obstructions

(Source: HRM Public Works)

Key contact information is documented in a binder. This includes internal and external contacts, including Corporate Fleet, Halifax Water, and equipment contractors.

We also noted there is a collective agreement which outlines winter works shift and training selection practices. As these terms are agreed to by the union on behalf of the employees, we did not assess these further.

Recommendation 8

Public Works should document key takeaways from prior winter season operations and pre-season planning events. If gaps are identified, plans should be developed to address them.

Management Response

Agree. Public Works has completed this past season's lessons learned sessions to identify gaps that may require attention. This process will be formalized in our policy going forward.

Recommendation 9

Public Works should develop procedures for key winter season planning processes and monitor to ensure they are implemented.

Management Response

Agree. Public Works will develop a process to identify and track deliverables required for planning of the winter operations season.

During the winter season, management regularly monitors weather conditions. They receive several emails daily from a weather monitoring service and told us they use other informal methods to monitor conditions. If winter conditions are forecast, management said they send an operations plan to the in-house supervisors to activate the winter works crews (otherwise staff work their regular shifts). For the 10 weather events we reviewed, plans were only available for six of the events. Management could not provide the plans for the remaining four events, telling us they do not retain these in the winter works files.

There is no documented guidance to support effective monitoring of in-house snow and ice clearing operations. As detailed earlier in this report, management have not implemented processes to assess if winter operations service standards are met. Management said supervisors are required to complete a post-event summary report, but we found they were not always completed, and those that were do not contain enough information to assess performance.

We reviewed the post-event summary reports and supervisor situation reports (communications on operations between supervisors during a shift change), for 10 weather events (reviewed three in-house zones per date, 30 total) and found:

- Eight post-event summary reports were not completed.
- Reports generally lack detailed information to support what was monitored.

In addition, for the 20 non-weather event dates we found there was no documentation to support whether any winter work was completed on these days. Management said staff may be working on snow related work, but it is not documented. While we did not expect detailed reporting for non-event days, we did expect there would be enough information to show whether in-house operations appropriately addressed hazardous conditions (e.g. icy roads or sidewalks, snow piles, etc.).

Overall, we expected there would be formal monitoring to show snow and ice clearing operations are doing what is expected, including an appropriate level of documentation to support work completed. It is important for Public Works to demonstrate they took reasonable steps to maintain safe and reliable roads and sidewalks throughout the winter season.

Recommendation 10

Public Works should develop a procedure to support monitoring activities for in-house snow and ice clearing operations. The procedure should define what level of monitoring needs to be completed and what information needs to be retained for event and non-event days to effectively assess performance.

Management Response

Agree. Public Works will develop a procedure to support formalized monitoring for in-house operations. This will allow for tracking of activities for pre-event, event, post-event recovery and non-event days.

In-house operations management work with Corporate Fleet and Procurement to help manage winter works equipment and salt inventory respectively. As Public Works is not responsible for these processes, it is important management works with these business units to ensure there is appropriate support for winter operations.

Public Works has a service level exchange agreement with Corporate Fleet, a division within Property, Fleet & Environment, which outlines each business unit's roles and responsibilities. Corporate Fleet is responsible for purchasing and maintaining all winter works equipment. We found Corporate Fleet and Public Works IMO management work together during budget development to identify capital replacements. In addition, management from each business unit told us they work together during the winter season to provide status updates on equipment availability and to ensure there is maintenance support available during a weather event.

Public Works and Procurement work together informally to ensure there is adequate salt to support winter operations. Procurement is responsible for purchasing salt and managing the salt domes used by in-house crews for winter operations. IMO management told us they informally monitor the inventory in the salt domes and will communicate concerns to Procurement. We verified there was communication between the groups to manage salt inventory concerns.

Process to assign service requests; some gaps noted

Public Works has a formal process to manage the review and triage of service requests. However, we noted gaps when it comes to ensuring they are adequately addressed.

There is no formal process to ensure urgent and non-urgent street and sidewalk clearing requests are addressed. Public Works' process outlines these requests are closed in the system after being sent to the supervisor, unless a response is requested, with no requirement for staff to document if the request was addressed. Management said requests during an event are usually addressed by the time they get to them, but there is

nothing recorded to support this. We expected some level of monitoring or review to ensure the work is completed and in a timely manner.

There is a documented process to address snow damages to public property caused by in-house operation crews. Public Works staff complete an initial investigation and if repairs are required, a work order is created. We reviewed 10 in-house related snow damage requests and found:

- Nine required repairs
 - Seven requests were repaired in the same year
 - One request was repaired 18 months later
 - One request is outstanding (received April 2024)
- One was inspected but no repairs were required, this was reasonable.

Public Works has defined timelines for when HRM assets (i.e. curbs, asphalt, railings) should be repaired. The timelines vary for the type of asset damaged; snow damages are not separated from other repair work. We found the timelines for the eight completed repairs were within HRM's standards, but management does not formally monitor this.

Recommendation 11

Public Works should develop and implement a procedure to ensure urgent and non-urgent street and sidewalk service requests are addressed in a timely manner.

Management Response

Agree. Public Works will develop a procedure to track all urgent and non-urgent service requests and actions.

Damages to private property caused by in-house operations are managed by Risk and Insurance, a division within Legal & Legislative Services. We did not audit this process.

Gaps in training and documentation; not centrally tracked

Operations staff have the required licenses to operate winter works equipment, but there were gaps in training. While we found there are processes meant to ensure staff receive training, improvements were identified.

Public Works does not maintain a list of what training is required to operate HRM's winter clearing equipment. While the Training Coordinator detailed for us what training was required, Public Works has not documented this. In addition, there is no central tracking of staff training and licenses. Public Works maintains a spreadsheet for each season with a list of equipment each staff can work on, but it does not detail their training and licenses. Staff told us they had a tracking document, but it has not been maintained.

We reviewed the training for 40 operations staff from the audit period against the expectations provided by the Training Coordinator and found:

- Thirty-three had the required training for their position.
- Four had some training required for their position.
- Three did not have the training required for their position.

We found all 40 employees had the appropriate drivers license required to operate the equipment. In obtaining their licenses, staff would have demonstrated they can safely operate a specific vehicle type (i.e. cars, trucks, heavy equipment). Public Works needs to determine whether any additional training is necessary to safely operate winter works equipment and take steps to ensure staff receive appropriate training.

In addition, staff told us they obtain and review each employee's driver record twice a year. This is a good process to ensure winter works staff licenses are still valid with no suspensions or serious violations. We found these records were obtained in the last year for 39 of the employees we tested, one was missing. Of the records obtained, our testing did not identify any concerns that required follow up.

It is important Public Works determines what training is required to operate the winter works equipment and monitors to ensure it is taken. As these employees work on HRM roads and sidewalks, it is important they can safely operate the equipment to minimize risks to themselves and the public.

Recommendation 12

Public Works should document what training and licensing are required to operate the various types of winter works equipment, ensure staff are appropriately trained, and maintain a central list of winter works staff training and licenses.

Management Response

Agree. Public Works will create a document to formally identify training and licensing requirements for winter equipment. Public Works will review current staff credentials, and an action plan will be created to address deficiencies. A central list of staff training and licenses will be updated.

Other – Data & Documentation

Throughout our audit, we noted concerns with data and documentation to support in-house and contracted winter work. The lack of formal processes and documented information make it difficult to assess program performance to support effective program management.

Service request data has gaps to support monitoring

Public Works uses an asset management system to document customer service requests, but the information maintained does not allow for appropriate monitoring. Earlier in this report, we noted a lack of information retained for contractor and in-house urgent and non-urgent service requests. Through our testing, we identified the following gaps with the system data:

- Lacks accurate open and close times to monitor timelines
 - Urgent and non-urgent requests are closed when sent to supervisor, but that is not the time they are addressed.
 - Snow damage repair times are not accurately recorded from in-house crews or contractors.
- Inconsistent data entry
 - Lack of guidance for which fields are required to be filled out and what information should be documented/ attached, for instance when documenting damage claims.

There is also a lack of guidance to ensure appropriate documentation is retained to support general service requests (questions, compliments and complaints) were addressed. We reviewed 10 service requests where a resident requested Public Works review the service standard assigned to a specific road/ sidewalk. Eight requests had no information to show they reviewed the requests. The remaining two had comments that they were reviewed, and no changes were required, both were reasonable.

It is important appropriate information is retained, and system data is relevant and reliable so it can be used to support monitoring activities.

Recommendation 13

Public Works should determine what information is required to be included in the asset management system to support effective monitoring and develop and communicate guidance to relevant staff to support its implementation.

Management Response

Agree. Public Works will develop work instructions for staff to follow when entering required information into the Asset Management system.

Some gaps in information; staff said due to email retention policy

For some audit requests, staff were unable to provide the requested information. In some instances, they said this was due to the email retention policy (system deletes emails from the inbox, deleted and sent folders after 24 months). While this did not impact our ability to complete and conclude on our audit objectives and criteria, we have concerns business units may not be ensuring key information from their email is retained. It is important all business units retain key information to support accountability, legal and compliance requirements, and transparent decision making.

Background

In 2020, Regional Council approved the winter operations service standards. These service standards identify priority levels and timelines for clearing streets and sidewalks. Operations crews are clearing during an event, but the service standards start when accumulation stops, and the weather event end time is confirmed. Public Works documents weather events as minor (0-5cm), average (5-15cm), major (15+cm) and freezing rain. The service standards do not apply in exceptional weather conditions, such as snowfalls greater than 30 centimeters and blizzard conditions. See Appendix 2.

	2022-23	2023-24
Number of HRM declared weather events ¹	17	18
In-House financial costs	Unknown	Unknown
Contractor financial costs ²	\$29.4 million	\$30.4 million

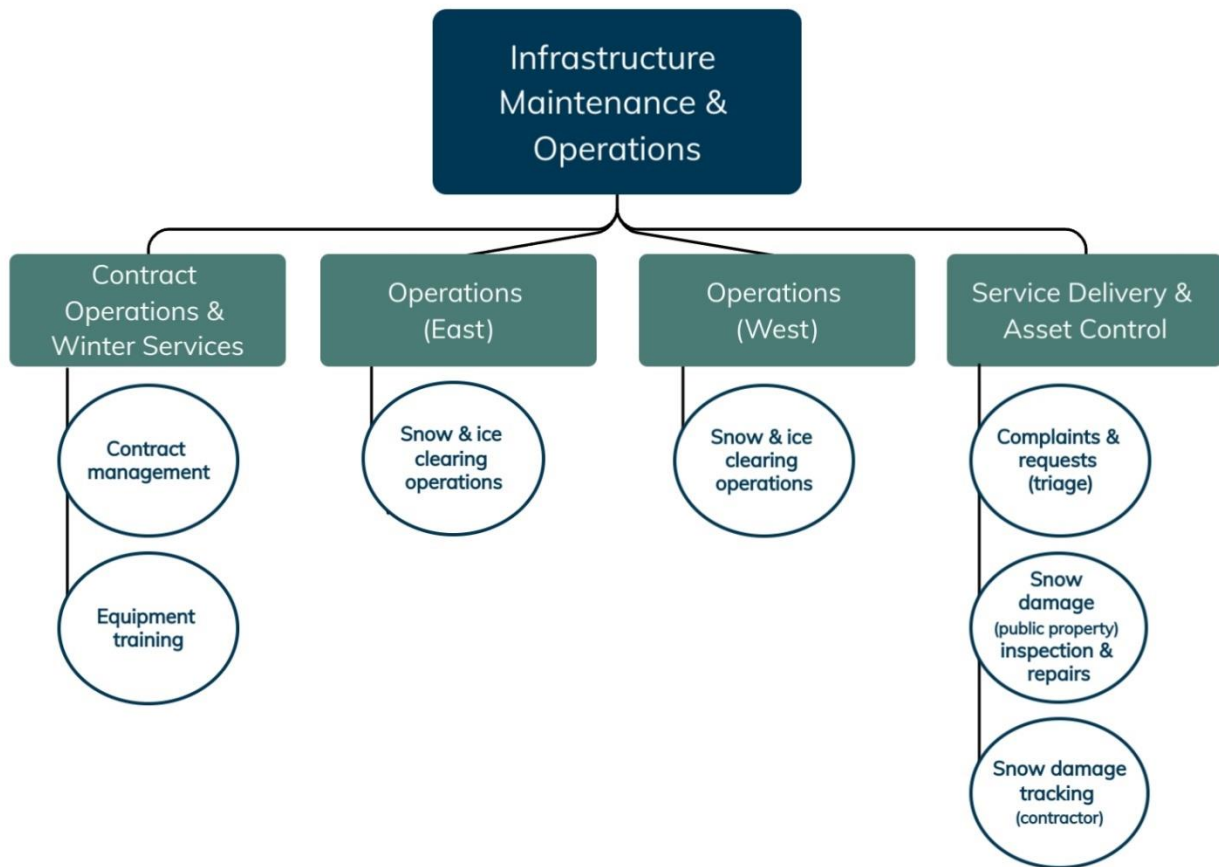
Source: ¹As tracked in Public Works' weather event calendars, ²As per HRM SAP

Infrastructure Maintenance & Operations (IMO), a division within the Public Works business unit, is responsible for managing winter operation services in collaboration with other business units. HRM's winter operations program is delivered through in-house and contracted operators.

In-house operations are managed through the East and West Operations teams. Staff in the Parks & Recreation business unit also assist with the winter works program.

Contracted operations are managed by the Contract Operations & Winter Services group. There are nine snow and ice clearing contracts – four street & sidewalk contracts and five sidewalk-only contracts. For further details, see Appendix 3.

Public Works Winter Operations Key Responsibilities



About the Audit

We completed a performance audit of management of winter operations. Our role is to express an independent audit opinion of this area.

The objectives of the audit were to determine whether:

- HRM effectively manages snow and ice clearing operations to provide safe and reliable roads and sidewalks consistent with Regional Council winter operations service standards; and
- HRM effectively manages snow and ice clearing contracts to ensure adequate service is received and terms and conditions are met.

We developed the criteria for this audit. These were discussed with, and accepted as appropriate by, management of Public Works.

1. Roads and sidewalks should be identified and prioritized for snow and ice clearing activities in accordance with the winter operations service standards.
2. Plans and processes to carry out in-house snow and ice clearing activities, including availability of equipment and materials, should be developed and implemented.
3. In-house snow and ice clearing activities should be monitored to ensure winter operations service standards are being met and deficiencies are addressed.
4. Complaints related to winter operations should be monitored and addressed in a timely manner.
5. Operations staff should have the necessary licenses and training to carry out snow and ice clearing duties.
6. Performance measures related to winter operations should be developed, evaluated and reported.
7. Snow and ice clearing contract terms and conditions should protect the public interest and achieve value-for-money.
8. Key contract terms should be monitored to assess vendor performance and address deficiencies.

Our audit period was November 1, 2022 – April 30, 2024. Our audit approach included: interviews with management and key personnel in Public Works; review of applicable plans, policies and agreements; and examination of contract files on a sample basis. The audit scope did not include snow and ice clearing of municipal facilities, procurement of snow clearing services and equipment, or assessment of the winter service standards.

This reasonable assurance engagement was conducted in accordance with the Canadian Standard on Assurance Engagements (CSAE) 3001 Direct Engagements published by the Chartered Professional Accountants of Canada.

We apply CPA Canada's Canadian Standard on Quality Management 1. Our staff comply with the independence and ethical requirements of the Chartered Professional Accountants of Nova Scotia Code of Conduct.

Appendix 1 – Recommendations and Management Responses

Recommendation 1

Public Works should develop and implement a process to monitor in-house and contractor snow clearing operations against the service standards. This information should be documented and retained for each event.

Management Response

Agree. Public Works will create a process to measure service standard adherence for both in-house and contracted winter maintenance for each declared snow event. Public Works will work with the Asset Management Office to explore capacity within Cityworks to develop a reporting tool. This will allow specific information to be collected and retained centrally.

Recommendation 2

Public Works should determine what data is needed to assess winter operations program performance, develop and implement processes to collect it, and measure and report on the results.

Management Response

Agree. Public Works will develop a policy to identify which data will be collected, the process to collect the data and the KPI's to be measured.

Recommendation 3

Public Works should define the level of monitoring required to ensure vendors comply with the contract terms and develop and implement procedures to support snow and ice clearing contract monitoring activities.

Management Response

Agree. Public Works will develop a policy which will define the contract monitoring process. This will include procedures to standardize winter maintenance contract monitoring activities.

Recommendation 4

Public Works should develop and implement a process to centrally track and document contractor deficiencies. The information retained should be sufficient to assess vendor performance and apply penalties and damages as appropriate.

Management Response

Agree. Public Works will standardize the process to track and retain contract deficiencies to assess vendor performance. This will occur through a reporting tool which will allow the collected data to be stored in a centralized location.

Recommendation 5

Public Works should develop and implement a process to identify all required contractor post-season repair work, communicate it to the contractor, and track its completion. This information should be documented and retained.

Management Response

Agree. Public Works will develop a process to track all post-season repair work within Cityworks.

Recommendation 6

Public Works should define how they will monitor and assess post-season repair work has been satisfactorily completed. This information should be included and documented with procedures in Recommendation 3.

Management Response

Agree. Public Works will develop a process to confirm post-season repair work is completed and tracked within Cityworks. This will be included in the policy from Recommendation 3.

Recommendation 7

Public Works should determine what information they require from vendors to effectively manage and monitor snow and ice clearing contracts and implement a process to collect this information, including taking appropriate action if it is not provided.

Management Response

Agree. Public Works will review existing contract reporting requirements and revise the required reports contractors need to submit. A process will be implemented to centrally track reporting compliance.

Recommendation 8

Public Works should document key takeaways from prior winter season operations and pre-season planning events. If gaps are identified, plans should be developed to address them.

Management Response

Agree. Public Works has completed this past season's lessons learned sessions to identify gaps that may require attention. This process will be formalized in our policy going forward.

Recommendation 9

Public Works should develop procedures for key winter season planning processes and monitor to ensure they are implemented.

Management Response

Agree. Public Works will develop a process to identify and track deliverables required for planning of the winter operations season.

Recommendation 10

Public Works should develop a procedure to support monitoring activities for in-house snow and ice clearing operations. The procedure should define what level of monitoring needs to be completed and what information needs to be retained for event and non-event days to effectively assess performance.

Management Response

Agree. Public Works will develop a procedure to support formalized monitoring for in-house operations. This will allow for tracking of activities for pre-event, event, post-event recovery and non-event days.

Recommendation 11

Public Works should develop and implement a procedure to ensure urgent and non-urgent street and sidewalk service requests are addressed in a timely manner.

Management Response

Agree. Public Works will develop a procedure to track all urgent and non-urgent service requests and actions.

Recommendation 12

Public Works should document what training and licensing are required to operate the various types of winter works equipment, ensure staff are appropriately trained, and maintain a central list of winter works staff training and licenses.

Management Response

Agree. Public Works will create a document to formally identify training and licensing requirements for winter equipment. Public Works will review current staff credentials, and an action plan will be created to address deficiencies. A central list of staff training and licenses will be updated.

Recommendation 13

Public Works should determine what information is required to be included in the asset management system to support effective monitoring and develop and communicate guidance to relevant staff to support its implementation.

Management Response

Agree. Public Works will develop work instructions for staff to follow when entering required information into the Asset Management system.

Appendix 2 – Winter Operations Service Standards

Roads and On-street Bikeways				
Priority Level	Type of Road	Service Standard for Clearing (starts after end of event)	Minimum Accumulation (when plowing begins)	What Finished Surface Should Look Like
1	Main arterial roads, emergency routes, Halifax Transit routes and roads with steep grades	12 hours	2 cm of snowfall	Bare
2	Residential streets, gravel roads and private lanes	24 hours	10 cm of snowfall	Snow covered but passable

Sidewalks and Protected Bike Lanes				
Priority Level	Type of Road	Service Standard for Clearing (starts after end of event)	Minimum Accumulation (when plowing begins)	What Finished Surface Should Look Like
1	Downtown Halifax and Dartmouth	12 hours	5 cm of snowfall	Bare
1	Main arterials and school drop-off zones	12 hours	15 cm of snowfall	Bare
2	Halifax Transit routes	18 hours	15 cm of snowfall	Mostly bare with salt for traction
3	Residential streets and walkways	36 hours	15 cm of snowfall	Mostly bare with salt for traction

Source: Haliifax.ca website – Snow clearing service standards fact sheet.

Appendix 3 – Snow & Ice Clearing Contracts

Zone	Contractor	Contract Type	Agreement Period	Optional Years
WSZ1 – Cole Harbour, Eastern Passage, Lake Echo	Ocean Contracting	Street & Sidewalk	Aug 1, 2022 - Jul 31, 2026	Remaining: 2026/27, 2027/28, 2028/29, 2029/30
WSZ2 – Sackville, Beavercreek, Fall River, Windsor Junction & surrounding areas	Dexter Construction	Street & Sidewalk	Aug 1, 2017 - Jul 31, 2021	Exercised: 2021/22, 2022/23, 2023/24, 2024/25 Remaining: None
WSZ3 – Bedford and Hammonds Plains area	Dexter Construction	Street & Sidewalk	Aug 1, 2019 - Jul 31, 2023	Exercised: 2023/24, 2024/25 Remaining: 2025/26, 2026/27
WSZ4 – Herring Cove, Timberlea, Upper Tantallon	Dexter Construction	Street & Sidewalk	Aug 1, 2022 - Jul 31, 2026	Remaining: 2026/27, 2027/28, 2028/29, 2029/30
SWZ5 – Halifax Peninsula South	Excel Property Services	Sidewalk	Aug 1, 2019 - Jul 31, 2023	Exercised: 2023/24, 2024/25 Remaining: 2025/26, 2026/27
SWZ6A – Halifax Peninsula West	Leahey's Landscaping	Sidewalk	Aug 1, 2019 – Jul 31, 2023	Exercised: 2023/24, 2024/25 Remaining: 2025/26, 2026/27
SWZ6B – Halifax Peninsula North	Leahey's Landscaping	Sidewalk	Aug 1, 2019 - Jul 31, 2023	Exercised: 2023/24, 2024/25 Remaining: 2025/26, 2026/27
SWZ7 – Halifax Clayton Park, Fairview Area	Provincial Pavement Markings	Sidewalk	Aug 1, 2019 - Jul 31, 2023	Exercised: 2023/24, 2024/25 Remaining: 2025/26, 2026/27
SWZ8 – Dartmouth Woodside, Lake Banook Area	Elmsdale Landscaping	Sidewalk	Aug 1, 2019 - Jul 31, 2023	Exercised: 2023/24, 2024/25 Remaining: 2025/26, 2026/27

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