

COMMON COUNCIL REPORT

M&C No.	2024-304
Report Date	November 19, 2024
Meeting Date	November 25, 2024
Service Area	Public Works and Transportation Services

Her Worship Mayor Donna Noade Reardon and Members of Common Council

SUBJECT: Winter Management Plan (WMP) Update

AUTHORIZATION

Primary Author	Commissioner/Dept. Head	Chief Administrative Officer
<i>John Mascarenhas</i>	<i>Michael Hugenholtz</i> <i>Tim O'Reilly</i>	<i>J. Brent McGovern</i>

RECOMMENDATION

It is recommended that Common Council receive and file this report.

EXECUTIVE SUMMARY

The purpose of this report is to communicate the City of Saint John (COSJ) WMP for

- 1) 2023-2024 winter season -successes and lessons learnt
- 2) 2024-2025 -Ice control & snow removal plan -streets and sidewalks
- 3) Opportunities and challenges that impact service delivery
- 4) Public Cooperation

The public is encouraged to learn more about the City's Winter Management Plan at www.saintjohn.ca/winter.

PREVIOUS RESOLUTION

City staff presented a similar Winter Management Plan for the 2023-2024 winter.

REPORT

Background

We know how important it is for residents to get to where they want to go safely, and winter conditions add an extra layer of challenges. The City's Winter Management Plan (WMP) outlines how crews will respond to snow and ice before, during and after snowfall.

INFRASTRUCTURE MAINTAINED BY COSJ

During the winter season the City of Saint John services

- 1,160 lane kilometers of road
- 225 Kilometers of sidewalk (2023)
- 114 Priority Catch basins + 29 Inlets/Outlets

When it snows, our crews clear snow based on road priority. Based on storm severity, our crews can respond to storms 24/7 and will work continuously until our objectives are met based on the City's WMP.

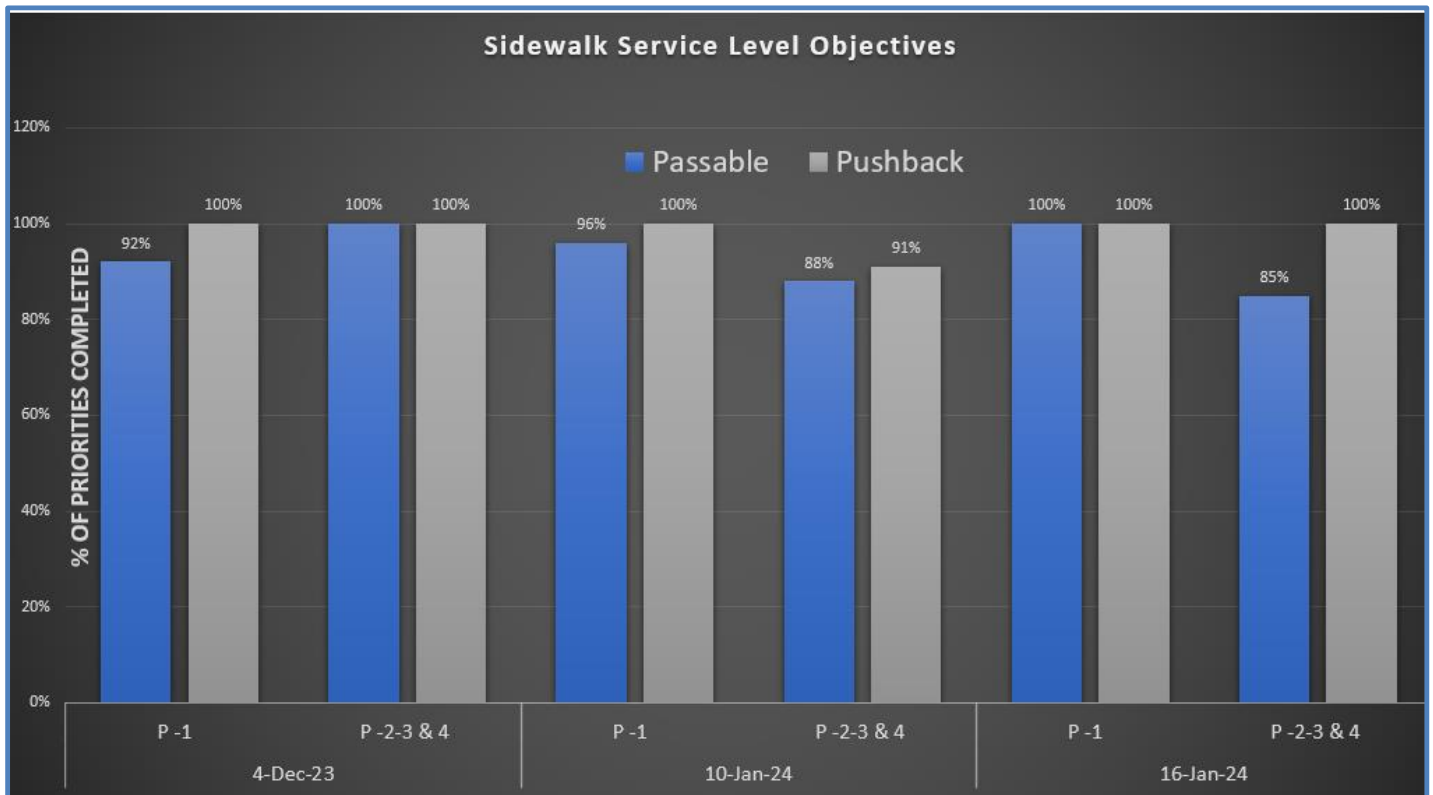
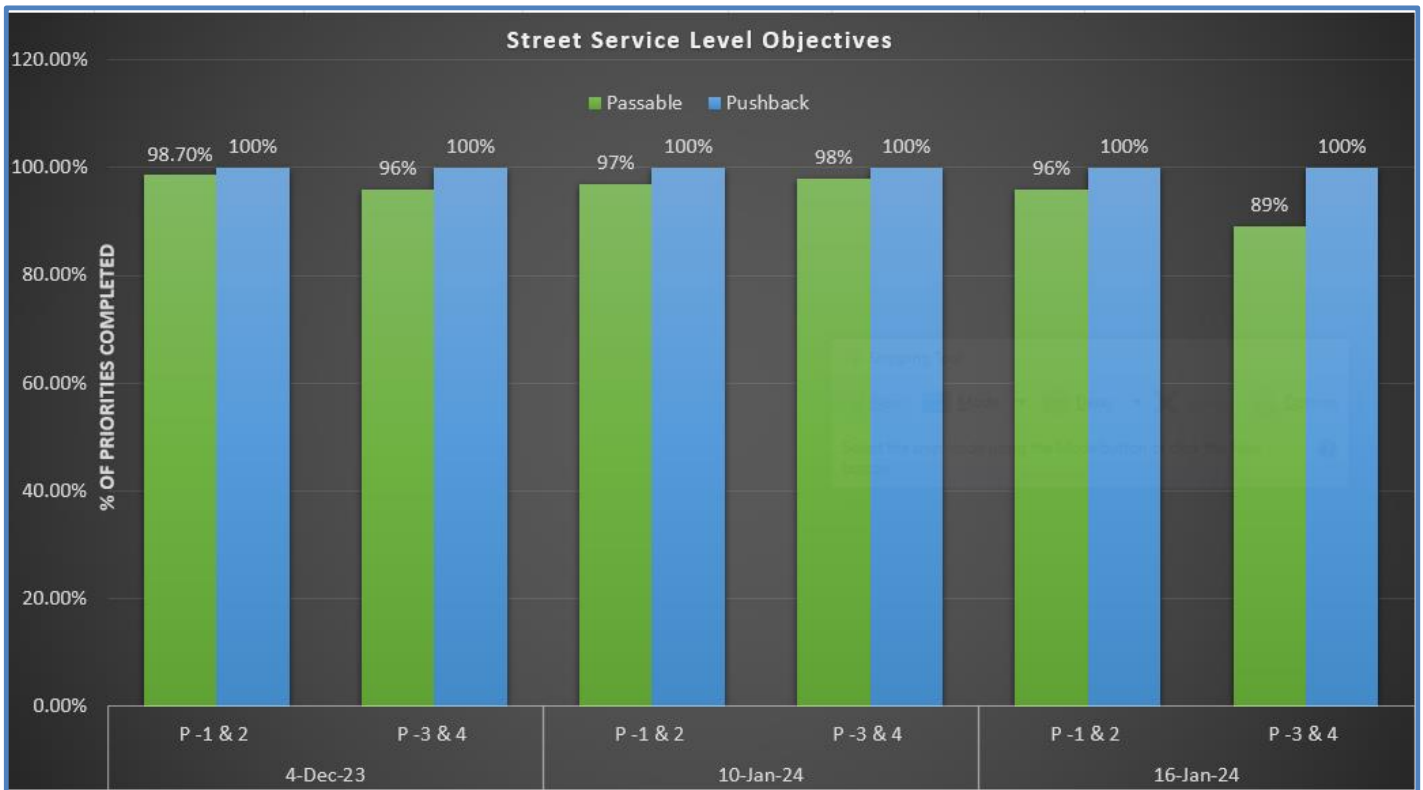
2023-2024 WINTER EXPERIENCE

There were fewer “recordable” snowstorms in 2023-2024 compared with previous seasons. However, successive precipitation events, combined with changeable temperatures, caused the need for several salting operations to keep roads and sidewalks from becoming slippery. Heavier rainfall events during the tail end of the season required a shift in focus to stormwater responses. The following additional details best describe the past winter.

- 3 recordable severe storms last winter
- 2 with a Storm Severity of > 30 (measured on a scale of 100)
- 2 of the 3 storms occurred in January within 2 weeks
- Several moderate (<30) storms brought hours of freezing rain and snow
- Our teams regularly salted, sanded, scraped, streets and sidewalks
- The recurring freeze-thaw cycle from December 2023 to March 2024 indicates precipitation fell more as freezing rain than snow. We received 397.3 mm of rain over February and March 2024, which caused flooding and washouts
- Our crew kept serviced 140 + priority catch basins and 29 inlets/outlets clear of debris, ice, and snow to prevent flooding in several parts of the City, notably at Treadwell Lake, Glen Falls, McAllister Drive, Haymarket Square, Rothesay Road, Ashburn Road, and Honeysuckle Drive

Diligent and focused execution of the WMP allowed for most WMP service objectives to be met. The following two graphs show how well performance objectives were met for clearing streets and sidewalks this past winter. The time and quality-based

performance objectives for both streets and sidewalks are provided at www.saintjohn.ca/winter and on a fact sheet attached to this report.



Although most streets and sidewalks were accessible within the deliverables of the WMP, any result below 100% indicated motorists or pedestrians would have experienced some periods of reduced accessibility. In the case of the January 16 storm,

- On the first pass, the City's snow-clearing services were delayed by 11% for streets and 15% for sidewalks
- This storm was also the most severe storm of the year (score of 35), which indicates the link between a storm's severity, its proximity to each other, and our ability to meet objectives based on real-time available resources

FOR WINTER 2024-2025

Climate change affects the frequencies and types of adverse weather, such as freezing rains, freeze-thaw cycles, and snowfall, causing damage to our infrastructure, such as flooding, potholes and water main breaks that require reinstatement. Public Works & Transportation (PW&T) continues to be as prepared as possible with available resources to realign our responses and remedy the situation.

Service improvements for the 2024-2025 season:

1. Predictive Forecasting

Responding to winter storms with the right approach at the right time is critical.

The City's Winter management team, in conjunction with AI meteorologist vendor FROST, monitors weather forecast patterns for COSJ's various micro-climates and follows weather reports daily. FROST gives us additional information using 5 remote sensing equipment at multiple sites throughout the City, providing air and road temperatures and surface grip, allowing the City to dispatch resources according to specific pre-post storm conditions. These units are leased and solar-powered. Weather monitoring is supplemented by on-road visual confirmation through PW snow control teams and Customer Service Dispatch.

The Winter Management control team's response decisions are usually made before anticipated snowfall/precipitation, based on available data at that time.

- Responses that are too robust can result in the overuse of resources
- Insufficient real-time responses can result in dangerous driving or walking conditions and the risk of falling marginally short of performance objectives

Dashboard analytics from these weather stations proved helpful in making good, informed decisions. The app downloaded onto the CS and PW supervisor's iPhones

provided added mobility, making quicker adjustments to suit current and future road conditions in real-time.

2. Retaining Old Plow Trucks -Managing Resource Availability:

- The continued usage of 4 plow trucks with limited residual life will continue primarily during equipment maintenance issues exacerbated by lingering supply chain parts disruptions
- These plow trucks do improve the flexibility of having enough equipment at a point in time during a storm event, given the frequencies and types of adverse weather and equipment breakdowns we faced in the last 2 winter seasons

3. Sidewalk Plowing:

- Of the 225 KM of sidewalks the city plows, Wing-able sidewalks increased from 11 KM to 15 KM. In addition to larger equipment being more efficient at clearing snow from sidewalks, winging sidewalks with plow trucks also removes the pile of snow left between the street and sidewalk when sidewalk plows are used. A clear path between the street and sidewalk aids in pedestrians safely crossing the street at crosswalks and gaining access to school and Transit buses.
- For 2024/25, we added 338 m of new sidewalk on Boars Head Road to the number of sidewalks serviced
- Centennial school sidewalk plowing between Visart St. and the school
- A noticeable increase in the number of sidewalks plowed will come by 2027, increasing the number of sidewalks plowed to 75% of our inventory (based on the 10-Year Strategic Plan)

4. Anti-Icing Program (road brining)

The City takes a strategic approach to snow and ice control.

- We have 3 Direct Liquid Application (DLA) trucks
- Starting mid-December, crews pre-treat dry road surfaces of major arterial roads with liquid salt brine upon forecasted snow or icy conditions. This places a protective anti-icing skim coat on the pavement surface prior to a winter event, making it difficult for ice to form on the roadway and easier for plows to remove snow once it falls
- Reduces in the salt/sand usage on our roads

5. Asphalt Recycling Equipment and Roadway Maintenance

- Potholes and watermain breaks occur between November and April when freeze-thaw cycles are frequent
- Public Works team members tend to base or patch these potholes or cuts using recycled asphalt through 3 hot asphalt re-cyclers, at a cost far lower than the cost of cold asphalt mix that is more often only a temporary solution and must be redone time and again
- It also helps keep our environment a little cleaner by recycling our used asphalt that would normally be thrown into landfills

6. *New Field Communication Devices*

PW&T is in the process of installing Bell mobility's new push to talk system on all vehicles, increasing the safety of our team during storms by

- Making it simple to connect with team members anywhere, anytime
- Passing time-critical information at the push of a button

7. *Reducing Pushing Snow onto Streets and Sidewalks:*

Snow being pushed onto streets or sidewalks from adjacent properties inhibits WMP performance objectives from being met

- It increases the costs to taxpayers
- It is illegal

8. *Crane Mountain Road plowing*

3 additional lane KM of snow and ice control responsibility reassigned to City's plow route by the Department of Transportation for the 2024/25 season.

9. *Parks*

Ihtoli-maqahamok - The Gathering Space

- Parks have designated staff for snow and ice control ensuring accessibility to said space
- Including a new ice-skating surface that will be maintained and open to the public 7 days/evenings a week

Harbour Passage

Additional resources allocated for citizens access to

- Harbour Passage to Tin Can Beach
- The new Fundy Quay section on the Saint John Waterfront

Challenges

1. *Alignment of Community Expectations and Approved Resources:*

- Performance objectives for street and sidewalk are defined by the General Operating Fund budgets
- The number, type, and frequency of storms over winter are all variables that can significantly impact the ability to meet performance objectives given current resource levels
- Service based budgets that bridge community expectations and weather patterns are essential

2. *Resource Re-Alignment*

Equipment

- The City has 33 street plow routes and 11 sidewalk plow routes
- 27 of the 33 street plow routes are serviced by 27 larger pieces of equipment and 4 end-of-cycle vehicles (used for redundancies)
- The other 6 street plow routes are plowed with one-ton vehicles used for plowing narrower streets
- The 11 sidewalk plow routes are cleared with 11 smaller sidewalk plows
- Although the team maintains equipment in advance of, and throughout the seasons, this equipment is used long hours performing hard work and equipment will become unavailable during winter storms. Although 4 old heavy plow trucks have been retained to fill in gaps when primary equipment is down, there will be times where street or sidewalk plows assigned to routes will be unavailable during a storm.

Team members

The start of and response to snowstorms can occur 24 hours per day, seven days per week during the winter season.

- For Dayshift, 40 hrs. in a week, we have team members available to resource all street and sidewalk plowing equipment permitted there are no scheduled or unscheduled absences
- For Nightshift, 40 hrs. per week, we have team members available to resource most, but not all, large pieces of street plowing equipment permitted there are no scheduled or unscheduled absences. No resources are available to resource the smaller one tons or sidewalk plowing equipment
- For the remaining 88 hrs. during off time, team members are required to respond to a storm through call ins, beyond their regular shifts. There is a limit to how long the team members can operate safely
- With the caveats provided, there remains gaps when resources will be unavailable, potentially compromising ability to meet performance objectives

3. *Additional Services Provided in Winter Season*

Apart from daytime garbage and compost collection, additional services required of PW&T are performed by the same team involved in response during and following snowstorms. Collection of garbage and compost from the South-Central Peninsula at night, removing garbage from pole baskets, inspecting and clearing over 150 high priority catch basins and culverts in advance of rain events, pothole patching, salting and sanding between storms, and equipment maintenance are duties performed between or concurrent with responding to snowstorms. Challenges meeting WMP deliverables and expectations of other services provided are compounded during a heavier winter.

4. *Preparation and Training*

Like many organizations, the City's PW&T team is witnessing more employee turnover in recent years. Approximately 20% of the team engaged in street and sidewalk plowing has 3 years or less with the city. As such, preparation and training requirements are growing.

- PW&T enacted shift change for winter 2 weeks earlier for winter preparation compared to last year
- On-the-Job winter equipment/route training was imparted to all new joiners and those in need of a refresher
- We allocated our fleet management team additional time to winterize our equipment

It is important the community appreciates that the team and equipment used to undertake "construction season" activities are the same resources used to respond

to winter storms. As such, the community must anticipate a reduced focus on the other services Public Works provides in the Fall/tail end of the year.

5. *Supply chain delays:*

- Unfortunately, global supply chain delays and disruptions delay how long it takes to receive parts for plow equipment. These delays lead to compromised ability to meet performance objectives

6. *Climate Change:*

- The number type and frequency of storms over a winter season are all variables that can significantly impact ability to meet performance objectives. Switching between snow-ice control to flood and washout situations is the new reality

7. *Parking Restrictions on Streets Too Narrow to Effectively Plow:*

- On-street parking can also cause negative service or cost implications
- Illegally at times during and following storms
- In some cases, on-street parking restrictions need to be adjusted to meet service objectives, particularly on narrower streets

8. *Inability to continue fully servicing some Forest Hills trails:*

Several asphalt trails off-street that connect sidewalks in Forest Hills are in such a deteriorated state that it will not be possible to meet WMP service deliverables consistently in the 2024-2025 winter season. These include trails between Mountain Rd. and Glengarry Dr., as well as Mountain Rd and Alpine St. We are committed to continue plowing these trails, permitted not too much snow accumulation occurs. However, should a heavy snow event occur, or successive storms result in more significant accumulation, there will be insufficient traction available to move the heavier accumulation with the combination of the trail grades and poor surface condition. As such, the City will not be in a position to hold itself reasonably to the service standards in the WMP. Trail rehabilitation efforts will continue to be explored in future construction seasons so that return to more consistently meeting service standards can once again be achieved; however, the current state of these trails is among the \$ ½ Billion deficit of infrastructure that needs attention.

How Can the Community Help?

The community contribution helps in maintaining a livable and safe city throughout winter.

1. Stay informed about our WMP at www.saintjohn.ca/winter. It outlines the service expectations during and following storms
2. Planning for additional travel time or re-evaluating the need to travel at all during or immediately following storms
3. The use of winter tires and proper footwear will provide added traction as streets and sidewalks, particularly while service objectives are being pursued
4. Collisions at rail crossings spike during the winter months. CN Rail provided information to improve safety at rail crossings during winter
5. Catch basins must be kept clear to allow for proper stormwater drainage – especially during heavy snowfall or rain as it prevents water ponding or flooding
6. Fire hydrants: In an emergency, every second matters. Blocked, concealed or difficult-to-access fire hydrants can delay emergency fire response
7. Whenever any roof, eave or portion of roof or eave, or any window-sill is laden with ice either in the form of icicles or otherwise, or with snow in such a manner as to endanger persons or property passing on any street beneath such ice, icicles or snow by the fall thereof upon such persons or property, it shall be the duty of the owner or the agent of the owner or any person having the care of such building or lot to remove such ice, icicles or snow from time to time
8. By-Law LG-22 prohibits throwing or piling snow in the street or on the sidewalk. This is a serious problem that can cause safety issues for motorists, pedestrians and other users as it complicates clearing for crews. When this occurs, team members are often forced to double back, delaying service on the rest of their routes. The municipality has enforcement in place to address non-compliance with said By-Law:
 - A person who violates any of the provisions of this By-law is guilty of an offence and is liable upon summary conviction to a fine of not less than three hundred dollars (\$300.00) and not more than two thousand one hundred dollars (\$2,100)
9. Winter Parking
 - Avoid parking on the sidewalk. When parked in a driveway, make sure your vehicle isn't hanging over into the City's right-of-way. These vehicles are dangerous obstacles for crews and prevent proper clearing of sidewalks
 - The City continues to develop a comprehensive system of on-street parking availability while supporting snow clearing efforts based on the WMP
 - The community can help by following on-street parking regulations for a particular street, parking off-street (designated lots) when overnight parking bans are called, and parking off-street whenever possible.
<https://saintjohn.ca/en/parking>

- The community can stay informed when parking bans are in effect. The City provides a wide range of ways citizens are advised of bans; through email notifications, the city website, radio advertisements, and the snow ban line 506-658-4040. Public notification will be posted no later than 3:45 pm the day of the ban
- The City provides maps identifying where South-Central Peninsula lots are located for parking during overnight parking bans

City staff, through our Integrated Customer Service Centre, are available for public interaction. By staying Informed through email notifications, the City's website, radio advertisements, the snow ban line 506-658-4040 and exercising patience during severe snowstorms, you can help prevent surges in calls to us during and following storms that may delay or prevent others with a need from reaching us.

City staff do not have the ability to divert resources to:

- Plow lower priority neighborhood streets or sidewalks earlier
- Provide clearing snow/ice in front of citizens driveways without compromising service performance objectives based on the WMP

STRATEGIC ALIGNMENT

- This report best aligns with Common Council's priority of:
- Move – by contributing to the re-establishment of safe transportation options following a winter storm event, and
- Perform – by measuring results and continuous improvement of the street and sidewalk snow clearing service

The planned trial of the Weather Stations is expected to contribute to the City's Strategic Plan target of reducing highway salt usage by 5%.

SERVICE AND FINANCIAL OUTCOMES

Staff is optimistic the service improvements and contingencies introduced for the 2024-2025 winter, in conjunction with past initiatives, such as live edge plow technology, brine usage, improved salt inventory management, changes to when overnight parking bans are called, enhanced coordination and improved storm and season after-action reviews will allow your Public Works team to maintain a consistent, balanced approach in providing citizens with quality service during the winter months with the resources and equipment available. Success will continue to be monitored this winter.

Two proposed service enhancements that, if approved as part of the 2025 General Fund Operating Budget, would further improve Winter Management Plan deliverable outcomes. These include:

- Additional enforcement resources would allow the City to be in a better position to enforce situations where a person or company pushes snow onto streets and sidewalks, to enhance the by-law improvements Common Council supported last winter, and
- A new Skilled Worker would, in addition to providing enhanced mowing and vegetation control services in the construction season, would allow the Public Works team to ensure an additional approximate 35 lane-kilometres of streets to be plowed before morning rush hour (providing service for up to 2,000 residents).

INPUT FROM OTHER SERVICE AREAS AND STAKEHOLDERS

N/A

ATTACHMENTS

Staff presentation

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