Agenda – Council – July 18, 2024

Report – Standing Policy Committee on Public Works – July 3, 2024

Item No. 1 Annual Report on Snow Clearing and Ice Control - 2024

STANDING COMMITTEE RECOMMENDATION:

On July 9, 2024, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Public Works and submitted the following to Council:

1. That the Winnipeg Public Service be directed to bring the annual report forward in July, starting in 2025.

2. That the Policy on Snow Clearing and Ice Control, a draft of which is attached as Appendix B to this report, be amended for by providing that snow plowing operations on Priority 3 sidewalks to shall normally be completed within 36 hours (instead of five working days) following the commencement of work.

3. That the Winnipeg Public Service be directed to conduct a cross jurisdictional scan of other major cities with comparable climates to Winnipeg, and report back in 120 days to the Standing Policy Committee on Public Works with best practices regarding sidewalk clearing during freeze/thaw cycles.

4. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

Report – Standing Policy Committee on Public Works – July 3, 2024

DECISION MAKING HISTORY:

EXECUTIVE POLICY COMMITTEE RECOMMENDATION:

On July 9, 2024, the Executive Policy Committee concurred in the recommendation of the Standing Policy Committee on Public Works and submitted the matter to Council.

David Grant submitted a communication with respect to the matter.

STANDING COMMITTEE RECOMMENDATION:

On July 3, 2024, the Standing Policy Committee on Public Works concurred in the recommendation of the Winnipeg Public Service, with the following amendment:

- Add the following new Recommendation 3, and renumber the remaining recommendation accordingly:

    "3. That the Winnipeg Public Service be directed to conduct a cross jurisdictional scan of other major cities with comparable climates to Winnipeg, and report back in 120 days to the Standing Policy Committee on Public Works with best practices regarding sidewalk clearing during freeze/thaw cycles."

and submitted the matter to the Executive Policy Committee and Council.

STANDING COMMITTEE RECOMMENDATION:

On June 11, 2024, the Standing Policy Committee on Public Works concurred in the recommendation of the Winnipeg Public Service and granted an extension of time of up to 30 days for the Winnipeg Public Service to report back on the following:

1. An annual report on process and service improvements to the snow clearing and ice control and spring cleanup programs.

COUNCIL DECISION:

On December 15, 2022, Council concurred in the recommendation of the Standing Policy Committee on Public Works and adopted the following:

Report – Standing Policy Committee on Public Works – July 3, 2024

DECISION MAKING HISTORY (continued):

COUNCIL DECISION (continued):

1. That the Council decision of January 27, 2022 with respect to Item 3 of the Report of the Standing Policy Committee on Infrastructure Renewal and Public Works be amended by directing the Winnipeg Public Service to provide its annual report on snow clearing and ice control in June, instead of July.

2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the forgoing

On January 27, 2022, Council concurred in the recommendation of the Standing Policy Committee on Infrastructure Renewal and Public Works and adopted the following:

1. That the previous directions of the Standing Policy Committee on Infrastructure Renewal and Public Works on June 10, October 12 and December 1, 2021, together with the Council direction of October 28, 2021, be amended, and the Winnipeg Public Service be directed to report back to the Standing Committee at its July 5, 2022 meeting on the following:

    A. An annual report on process and service improvements to the snow clearing and ice control and spring cleanup programs.

    B. Improvements to current services, including but not limited to:

        i. Improving timelines for when residential snow clearing will occur based on severe snow events through a delegated authority instrument.

        ii. Consideration of delegation of authority outside of the Annual Snow Route Parking Bans.

        iii. Efficacy and costs of plowing sidewalks to the concrete as opposed to snow packed levels.

        iv. Alignment with city policy of plowing sidewalks at the same time as roads on P1s, P2s and the enhanced snow clearing around schools.

Report – Standing Policy Committee on Public Works – July 3, 2024

DECISION MAKING HISTORY (continued):

COUNCIL DECISION (continued):

v. Options regarding sanding and salting and sidewalks to enhance walking conditions, ways to improve completion timeframes, as well as treatments made to sidewalks based on complaints.

vi. Enhanced plowing operations in residential neighbourhoods without sidewalks.

C. The impact of salt products used for snow and ice control on Winnipeg roads and sidewalks in relation to:

i. The survival of newly planted trees;

ii. The health of existing, mature trees.

iii. Alternative products available for ice control which can replace the use of salt.

D. A fully revised and updated Snow Clearing and Ice Control Policy which will include all the policy amendments that were approved by Council in the past several years.

2. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the forgoing.

ADMINISTRATIVE REPORT

Title: Annual Report on Snow Clearing and Ice Control - 2024

Critical Path: Standing Policy Committee on Public Works – Executive Policy Committee – Council

AUTHORIZATION

Author	Department Head	CFO	CAO
M. Cantor	J. Berezowsky	T. Graham	M. Geer, Acting CAO

EXECUTIVE SUMMARY

The City of Winnipeg Public Service continues to diligently pursue both cost-effective and innovative methods for snow removal and ice control. This annual report: offers a detailed account of operations; underscores process enhancements; and highlights potential service level improvements.

The 2024 report summarizes the various facets of our operations. It delves into the operational achievements and challenges of this past season, showcases improvements in our processes, and explores opportunities for service enhancement through operation improvements and communication mediums. By analyzing weather data, operational data, and compliance metrics, we aim to provide a transparent account of our efforts and identify potential areas for further improvement.

The 2023 report referred recommendations for additional funding to the 2024-2027 multi-year budget process and this report updates the Committee as to the outcomes of the budget process.

RECOMMENDATIONS

1. That the Winnipeg Public Service be directed to bring the annual report forward in July, starting in 2025.

2. That the Policy on Snow Clearing and Ice Control, a draft of which is attached as Appendix B to this report, be amended for by providing that snow plowing operations on Priority 3 sidewalks to shall normally be completed within 36 hours (instead of five working days) following the commencement of work.

3. That the Proper Officers of the City be authorized to do all things necessary to implement the intent of the foregoing.

REASON FOR THE REPORT

On January 27, 2022, Council concurred in the recommendation of the Standing Policy Committee on Infrastructure Renewal and Public Works and adopted the following:

1. That the previous directions of the Standing Policy Committee on Infrastructure Renewal and Public Works on June 10, October 12 and December 1, 2021, together with the Council direction of October 28, 2021, be amended, and the Winnipeg Public Service be directed to report back to the Standing Committee at its July 5, 2022 meeting on the following:

    A. An annual report on process and service improvements to the snow clearing and ice control and spring cleanup programs.

On December 15, 2022, Council amended its January 27, 2022, decision by directing the Public Service to provide the annual report on snow clearing and ice control in June, instead of July.

IMPLICATIONS OF THE RECOMMENDATIONS

If approved, the Policy on Snow Clearing and Ice Control would be amended related to the normal timelines for Priority 3 sidewalk clearing. There are no direct financial implications associated with updating the Policy as Council has already approved the service enhancements and provided funding as part of the 2024-2027 multi-year budget process. For clarity, updating the Policy is a housekeeping item for what has already been approved by Council.

Annual reports will also be submitted every year to the July meeting of the Standing Policy Committee.

HISTORY/DISCUSSION

This annual report includes information on the following topics:

1. Weather and operations summary.
2. Challenges on sidewalks during unseasonably warm weather.
3. Enhanced snow operations map.
4. Road salt and winter sand storage facilities.
5. Compliance during a Residential Parking Ban.

Weather and operations summary

The 2023-2024 winter season was a milder season based on the below average weather parameters (precipitation, temperatures, and winds) which resulted in fewer overall snow clearing and ice control activities, as presented in Table 1.

Table 1- Weather and Operations			
	2023-2024	**Avg.**	**Seasons**
Weather			
Snow (cm)	110	120	10
Days of snow	42	47	10
Salting opportunities (days)*	131	105	10
Melting opportunities (hours)**	200	137	10
High wind (days)***	26	30	10
Operations			
P1 truck plows	4	6	5
P2 truck plows	4	6	5
P1 grader plows	2	2	5
P2 grader plows	1	3	5
P3 grader plows	1	2	5
Lanes plows	3	5	5
P1/2 walk/path plows	15	15	5
P3 walk/path plows	9	7	5
Windrows removal (km)	156	349	5
Snow hauled (CBM)	113,255	573,161	5
Sand applied (tonnes)	28,173	62,986	5
Salt applied (tonnes)	12,198	22,106	5

***** Daily Max temp. >=-9c
** Daytime temp.>=-7c and cloud cover<=2
*** Daily Max wind speed >= 40km/hr

Table 2 presents the plowing performance by average percentage complete at the Policy target timelines per facility/event type.

Table 2- Plowing Performance		
Facility/Event Type	**Target**	**% Complete** (Average)
P1 street grader plow	36 hrs	98
P1 street truck plow		100
P2 street grader plow		90
P2 street truck plow		99
P1 walk/path plow		100
P2 walk/path plow		95
Back lane plow	48 hrs	100
P3 street plow	60 hrs	98
P3 walk/path plow	120 hrs	100

On July 13, 2023 Council concurred in the recommendation of the Standing Policy Committee on Public Works and adopted the following:

> That Option 2 – "Matching snow clearing event trigger on all sidewalks and pathways", improving the level of service on P3 sidewalks and pathways, be implemented, and that in order to fund Option 2, the 2023 operating budget of the Public Works Department be increased by $216,393, and the operating budget forecasts be increased by the following amounts:
>
> A. $551,803 in 2024
> B. $562,831 in 2025
> C. $574,095 in 2026
> D. $585,577 in 2027

It was communicated in the 2023 annual snow report that timelines would be tracked during the 2023/24 winter season to establish adequate expectations for the P3 sidewalk plowing.

With the understanding that the 2023/24 winter season was a lower than average snow and ice control season and that subsequent years may yield different outcomes, the Public Service has tracked plowing progress on Priority 3 sidewalks to establish adequate timeline expectations as per the Snow Clearing and Ice Control Policy, which currently sets a service standard of 120 hours. Table 3 presents average percentages completed at various times following the completion of Priority 1 and Priority 2 sidewalks.

Table 3		
12hrs	**24hrs**	**36hrs**
83%	98%	100%

Based on Table 3, the Public Service recommends that the Policy on Snow Clearing and Ice Control be amended for snow plowing operations on Priority 3 sidewalks to normally be completed within 36 hours (instead of five working days) following the commencement of work.

Challenges on sidewalks during unseasonably warm weather

The mild winter season of 2023-2024 introduced challenges in keeping sidewalks passable during prolonged melting periods. The melting and lack of proper drainage traps water on the sidewalk, which then freezes again when temperatures drop and causes slippery conditions. Using sand to improve traction on sidewalks during these freeze-thaw cycles is ineffective as it sinks to the bottom or mixes in with the slush.

There are three key factors that continually and significantly impact effective drainage and ice control/removal on sidewalks:

Street and property design combined with snow storage

- Lots adjacent to streets are designed higher than street level to help water flow and drain away from properties. Sidewalks are also designed to further pull water away from adjacent properties.
- During a snow clearing operation on streets and sidewalks, snow is stored on boulevards, which consequently prevents water from melting snow from draining onto the street.

Environmental factors

- Soil conditions, tree roots, and isolated sidewalk repairs cause uneven sidewalks and various settlement rates.
- Boulevard settlements occur naturally and are also affected by underground infrastructure and the weight of stored snow.
- Inadequate utility trench backfill methods and materials result in localized or uneven settlement of sidewalks and boulevards.
- Our streets and sidewalks are lined with many old trees with large roots which can raise sidewalks, creating uneven conditions and areas for water to pool.

Realities of winter maintenance

- Sidewalk snow removal equipment does not have the force to scrape ice from sidewalks.
- Uneven sidewalks pose a risk of damage to the machines.
- Ice crushing machines could crush ice; however, ice would then melt and not be able to drain.

The Public Service will continue with maintenance plowing operations before and during melting periods to improve conditions on sidewalks.

Enhanced snow operations map

The Public Service revamped the snow operations map on the City's snow website to launch prior to the 2024/25 snow season. The redesigned platform offers an intuitive and user-friendly experience, enabling users to efficiently navigate snow clearing progress, current and upcoming parking bans, and other localized resident information. This version includes all the enhancements while ensuring clarity and accessibility for a broad audience.

Key enhancements include:

- An improved address lookup tool that provides the user with detailed information about an address;
- List view of all available map functions optimized for screen readers;
- Segment-based, colour-coded maps displaying information on sidewalks, pathways, streets, and back lanes;
- Four viewing options for tracking snow clearing progress tailored to pedestrians, cyclists, and motorists;
- Live updates on current and upcoming parking bans;
- A last-plowed feature that shows historical data on plowing activities.

The Public Service also made significant progress on the live walk/path plowing status initiative, which included:

- Outfitting all City-owned sidewalk plowing machines with AVL (Automatic Vehicle Location) devices;
- Developed algorithms to distinguish between the plowing and travelling states of sidewalk plowing equipment;
- Conducted tests on these algorithms using a combination of work management data and AVL data to ensure accurate operation tracking.

Next steps include completing access to contractors' equipment AVL data and testing the full functionality during the first few events next winter season.

As the Public Service moves forward with the complete integration of AVL data, we anticipate further enhancements in data granularity and reporting timeliness. This will solidify our commitment to maintaining clear and safe sidewalks and pathways.

Road salt and winter sand storage facilities

Road salt is used to melt snow from paved surfaces. Winter sand improves traction on compacted snow surfaces.

The City has three bulk storage facilities for road salt and winter sand located at 960 Thomas Avenue, 1220 Pacific Avenue, and 1539 Waverly Street. Two of these facilities have sustained structural failures that require rehabilitation of the building.

In the fall of 2023, the fabric roof and alloy trusses of the facility at 1220 Pacific Avenue were removed due to large tears in the fabric and severe failures in the alloy trusses. Due to similar failures, the fabric roof and alloy trusses at 1539 Waverley Street were also scheduled for removal in Spring 2024.

The Public Service is currently seeking a consultant to provide a feasibility study to rehabilitate the facilities in question.

The 2024-2027 budget includes funding in 2025 for the rehabilitation of the salt and sand storage facility at 1220 Pacific Avenue.

Compliance during Residential Parking Bans

Below is ticket data during the most recent Residential Parking Bans:

Event Date	Total	Km Enforced		Tickets/Km	Service Requests for Vehicles Impeding Snow Clearing
20-Jan-22	3,575	1,234.7	71%	2.90	206
23-Feb-22	4,026	903.2	52%	4.46	213
24-Nov-22	3,751	1,318.2	76%	2.85	87
18-Dec-22	4,052	1,626.4	93%	2.49	103
14-Jan-24	4,262	1,681.6	97%	2.53	30

The Tickets/Km ratio decreased over the last four bans; so, too, have service requests for vehicles impeding snow clearing. The latter significantly dropped during the last event, even though no courtesy tows occurred.

Due to several operational changes between 2022 and 2024, the Public Service would like to collect additional data next winter season. This will allow a comprehensive review of trends in compliance, fine amounts, fine payment, collection and appeal rates, and repeat offenders to measure. The review should illustrate operational effectiveness and any required changes.

The Public Service will report its findings and any recommendations in the next annual report.

Financial Discussion and Analysis

Snow and Ice Control

Snow and ice control activities are weather-dependent and costs can vary significantly from one year to the next. Appendix A is a summary of snow and ice control costs over

the last 10 years, identifying Adopted Budget, Actual Costs, and Actual Costs adjusted for inflation using the Consumer Price Index (CPI). The variability in annual cost is highlighted by both the high and low annual amounts over the past 10 years being incurred in 2022 and 2023 respectively. Traditionally snow and ice control activities have been budgeted using the assumption of a 'low scenario' and in each of the last 10 years actual costs have exceeded adopted budget resulting in an annual deficit (see Appendix A). Snow clearing costs have varied by significant amounts from year to year, ranging from a low of $40.5 million to a high of $90.5 million (adjusted for CPI).

In the 2023 calendar year, Winnipeg experienced a relatively low snowfall season. The Council adopted budget for the year was $36.3 million; actual costs were $40.5 million, resulting in an over-expenditure of $4.2 million.

Snow and ice control activities are provided using a combination of City forces and external resources. External resources are comprised of eight private sector companies on 10 snow clearing contracts as well as hired equipment. All 10 contracts were for a four-year period and expired at the end of the 2021-2022 snow clearing season. Under the terms of the bid opportunity, these contracts were extended for a final one-year period which expired at the end of the 2022-2023 snow clearing season. Subsequently, new 30-month contracts with possible three-year extensions were tendered, reviewed, and awarded in accordance with the City's purchasing policies.

Significant inflation was observed on both the one-year contract extensions for 2022-2023 and then again in 2023-2024 for the new 30-month agreements. The total contract values increased over the prior year by 22.3 percent for 2022-2023 and by an additional 24.3 percent for 2023-2024 for a compound increase of 52.0 percent compared to the 2021-2022 costs.

Appendix A identifies the actual snow clearing and ice control costs adjusted for inflation (CPI). As part of the annual budget process, a 10-year rolling average is used to identify the range of potential snow and ice control costs. Based on historical costs adjusted for inflation, the following is the range of possible snow and ice control costs.

Low - $40.5 million
Average - $54.4 million
High - $90.5 million
2024 Adopted Budget - $40.5 million

A best practice for budgeting snow and ice control costs would be to budget for an average snow and ice control costs and employ a reserve to deal with significant variations in cost from year to year. On July 13, 2023 Council concurred with the Standing Policy Committee on Public Works recommendation "*That budgeting for the average cost of snow and ice control activities of $54.2 million plus using the snow clearing reserve to address higher than average cost years be referred to the 2024-2027 Multi-Year Budget Process".*

The 2024-2027 Multi-year budget process considered the above referral and the budget for Roadway Snow Removal and Ice Control budget was increased incrementally by $3.0 million per year as follows:

2024-2027 Multi- Year Snow and Ice Control Service Expenditure Budget

	2024	2025	2026	2027
2023 Adopted Budget	36.262	36.262	36.262	36.262
Incremental Funding in Multi-year budget	3.000	6.000	9.000	12.000
Other increases (*)	1.188	2.099	3.039	4.001
	40.450	**44.361**	**48.301**	**52.263**

(*) Other increases are comprised of normal budget process adjustments including; increases in salaries and benefits related to collective agreements, budget directed inflation on non-salary items of 2%, adjustments to assumed fuel rates, etc..

The result is that the 2024 adopted budget has been brought back in line with a CPI adjusted “low scenario” of just over $40 million.

It should be noted that the significant inflation observed on external contracts over the past two years would not be reflected in the CPI index used in the above estimate. Adjusting expected average scenario for the impact of the recent inflation on the external snow clearing contracts increases the ‘average scenario’ by an additional $3.9 million, from $54.4 million to $58.3 million.

Last year’s report also referred budgetary shortfalls related to City Beautification – Spring Clean-up to the 2024-2027 Multi-year budget process. No additional funding was granted to the department in the budget process to address this budgetary shortfall.

Spring clean-up activities are difficult to reduce in scope as they are highly visible to the public; it is obvious when winter gravel and sand has not been removed from a boulevard, street or pathway. In some years, the department has been able to off-set these overages by underspending in other areas noting that many activities are weather-dependent and cannot be counted on to continue in the future.

FINANCIAL IMPACT

Financial Impact Statement Date: May 24, 2024

Project Name:

Annual Report on Snow Clearing and Ice Control - 2024

COMMENTS:

There are no direct financial impacts associated with approving the recommendations of this report.

For clarity, there are no financial implications to updating the Policy as Council has already approved the service enhancements and provided funding as a part of the 2024-2027 multi-year budget process.

J. Ruby, 2024-05-24
J. Ruby CPA, CA
Manager of Finance & Administration

CONSULTATION

This Report has been prepared in consultation with: Legal Services (as to legal issues)

OURWINNIPEG POLICY ALIGNMENT

Goal: Good Health and Well-Being
4.10 Transportation Safety - Design, construct, maintain, and regulate an integrated and sustainable transportation system and related infrastructure that optimize safe, connected and reliable mobility, and minimize severe injuries and fatalities for all road users.

WINNIPEG CLIMATE ACTION PLAN ALIGNMENT

Consideration was given as to whether this report connects to the Winnipeg Climate Action Plan (CAP), and it was determined that the CAP is not applicable to this specific report.

WINNIPEG POVERTY REDUCTION STRATEGY ALIGNMENT

Consideration was given as to whether this report connects to the Winnipeg Poverty Reduction Strategy (PRS) and its Goals and Objectives, and it was determined that the PRS is not applicable to this specific report.

SUBMITTED BY

Department: Public Works
Division: Streets Maintenance
Prepared by: Michael Cantor, P.Eng.
Date: May 24, 2024

Attachment: Appendix A – Snow Clearing and Ice Control Budget Analysis

Attachment: Appendix B – Draft Snow Clearing and Ice Control Policy Amendment