Winter Maintenance Annual Report (2024 / 2025)

Winter Overview

The City of Calgary (The City) is committed to the provision of a safe, customer focused, efficient and sustainable transportation system that supports mobility choices. The Mobility Business Unit (Mobility) partners with Calgary Parks & Open Spaces, Calgary Transit, Fleet Services and Emergency Management & Community Safety to deliver the winter operations services Calgarians receive and is committed to a well-maintained road, transit, sidewalk and pathway system in winter for all travel modes**.** City of Calgary staff and contractors support the delivery of safe winter driving, cycling and walking conditions through The City's Winter Maintenance Program.

Spotlight on the 2024 / 2025 Winter Maintenance Program

Below Average Snowfall / More Snow Events

- The total amount of snowfall for the 2024/2025 winter season was 96 cm, substantially less than the average accumulations for the prior 4 winter seasons (157 cm). There were 29 total snow events compared to 22 in the prior winter season. February 2025 was extremely cold with 16 days with temperatures below -20 Celsius.
- There was only one snow event with accumulations above 10 cm on Nov. 23 with approximately 25cm received over the course of several days. The amount of snowfall per event was far less (3.3 cm) compared to the prior winter (9.1 cm)

High Performance Achieved

- Performance targets were achieved by completing Priority 1 routes within 18 hours (100% of events) and Priority 2 routes within 36 hours (100% of events). No snow route parking bans were activated during the winter season. The last snow route parking ban was in February 2019.
- From October 2024 to April 2025, Mobility received 6,596 SNIC service requests (SRs).
- Contractors responsible for clearing pedestrian areas within 24 hours achieved high levels of compliance with 92% of call outs being completed within required timeframes.

Budget

- 2024/2025 winter maintenance expenditures totalled $41 million. The Winter Maintenance Reserve total balance decreased to $7.5 million by the end of 2024 due to Council approved investment for critical paving projects.
- For the 2025 fiscal year, expenditures for the first half of the year were within the allocated budget. A total of $23.3 million was spent with $33.4 million remaining for the rest of 2025.

Table of Contents

Introduction

The City's Winter Maintenance Program Plan (Program Plan) provides detailed plans and strategies to meet the expectations set out in Council's Winter Maintenance Policy. The Winter Maintenance Policy and the Program Plan support the response to changing weather patterns, funding levels, innovation, best practices and lessons learned. The Policy and Program Plan are established to address normal winter weather conditions, with strategies to address extreme winter conditions and emergencies. Trained personnel and the required resources are deployed to provide safe travel conditions on city infrastructure during the winter season.

Background

The aim of the Winter Maintenance Policy is to provide reasonable winter driving conditions for vehicles/cycles that are properly equipped for winter driving and are operated in a manner consistent with good winter driving habits. Council and Administration remain committed to the delivery of winter services within a policy framework that is efficient, inclusive and fiscally responsible. Extreme winter conditions and snow emergencies are addressed in operational plans as they are likely to occur. The City is aware that response to extreme winter weather conditions requires a systematic approach with internal awareness and collective commitment to a safe and well-maintained road system for all travel modes. Historically, the winter maintenance program was referred to as the Snow and Ice Control (SNIC program) and a number of existing documents still reference this naming convention.

Average snow clearing response times were formally established within the Council approved Winter Maintenance Policy (CP2024-06) in 2024 to 18 hours for Priority 1 routes and 36 hours for Priority 2 routes. These service enhancements contributed to improved reliability for transit service and the active mobility network in addition to aligning with desired citizen service expectations.

Priority Snow Plan

The City's winter response during the 2024/25 winter season was delivered through the Priority Snow Plan. This plan allows us to quickly address the impact of any winter event on the mobility of Calgarians and communicate the level of service effectively. The plan is a systematic response that addresses high volume and high-risk transportation assets first and then moves to lower volume and lower risk assets. If another snow event occurs prior to completing the plan, our response resets back to Day One.

Over the 2024/25 SNIC season, Calgary received 96 cm of snow. Snow Event #1 started on October 21, 2024 with 1 cm of snowfall. The Snow Plan was activated 29 times in 2024/25 which was 7 more events compared to the previous winter. Table 1 shows snowfall comparison for the last five winter seasons.

Winter Season Snowfall (cm)					
Month	**2020/21**	**2021/22**	**2022/23**	**2023/24**	**2024/25**
September	0	0	0	0	0
October	27.9	4.2	24.2	16.0	0.6
November	18.2	3.8	29.4	5.2	40.0
December	39.6	25.5	26.1	21.0	6.0
January	7.7	3.7	22.4	28.1	5.2
February	33.8	32.5	32.1	21.2	15.0
March	9.9	11.0	18.1	68.4	17.8
April	7.8	43.1	3.7	32.3	11.2
May	0	1	0	0	0
Totals	**145**	**125**	**156**	**201**	**96**

Table 1: Season comparison 2020 - 2025

3-1-1 Service Requests

During the 2024/25 winter season, Mobility received 6,596 service requests (SRs). Table 2 shows the historical data from the past five seasons.

Historical 3-1-1 Data					
	2020/21	**2021/22**	**2022/23**	**2023/24**	**2024/25**
Total SNIC SRs	12,497	3,750	11,300	6,020	6,596

Table 2: SRs from 2020 - 2025

Winter Maintenance Materials

Our team uses four main Winter Maintenance materials: road salt (sodium chloride), sanding chips, calcium chloride brine and sodium chloride brine.

Sanding chips are six-millimetre rock particles which contain up to three per cent salt. The liquid brines help the material stick to the road surface and are also used as an anti-icing agent applied directly to the road surface.

As anti-icing agents, sodium chloride brine and calcium chloride brine perform over different temperature ranges. The sodium chloride brine is used during warmer winter temperatures whereas calcium chloride brine is used during colder winter temperatures.

Studies have shown that without pre-wetting, only 46 per cent of the material applied to a roadway will stay in the middle third of the roadway. However, if the material is pre-wet, 78 per cent will stay in the middle third of the roadway. This practice increases the efficiency of the sanders, reduces costs and helps minimize our impact on the environment.

A five-season comparison of Winter Maintenance material consumption is shown in Table 3. Road salt usage during the 2024/25 SNIC season was 39,950 tonnes, which was a 41% decrease. Sanding chip consumption during the 2024/25 SNIC season was 42,026 tonnes, which was slightly above the 5-year average.

Winter Maintenance Material Consumption					
Winter Season	**Road Salt/NaCl (tonnes)**	**Sanding Chips (tonnes)**	**Calcium/Sodium Chloride Brine (litres)**	**Snow Days**	**Snowfall (cm)**
2020/21	48,637	26,528	28,308	55	145
2021/22	51,229	39,544	58,030	52	125
2022/23	59,884	58,004	74,249	47	156
2023/24	67,266	39,479	59,720	47	201
2024/25	39,950	42,026	18,940	39	96
Average	**53,393**	**41,116**	**47,849**	**48**	**145**

Table 3: Five-year comparison of Winter Maintenance materials consumption, snow days and total snowfall

The City has continued to explore several trials to evaluate new materials that could potentially decrease long-term usage of road salt materials and these trials will continue. The City continues to use Beet 55 as an anti-icing and de-icing agent on pedestrian cycling infrastructure for Priority 1 and 2 routes. Beet 55 is a trademarked liquid organic accelerator alternative to other anti-icing and de-icing products. When this is blended with salt brine at 65% salt brine and 35% Beet 55, the freezing point will be lower than by using pure salt brine but higher than by using calcium chloride at 30% concentration.

Snow Storage Sites

The City has three snow storage sites to manage snow removed from roadways. Planning for future sites is underway to ensure the availability of snow storage locations in Calgary. These sites are found in Table 4 below:

Site	Address	Capacity (cubic metres)
Highfield	1320-50 Ave. S.E.	~600,000
Spring Gardens	1025-32 Ave. N.E.	494,100
Pumphouse	2140 Pumphouse Ave. S.W.	55,805

Table 4: Snow Storage sites

As an alternative to removing and storing snow, The City's operational teams reviewed the effectiveness of mechanical snow melter equipment. However, it was determined that the resulting water from the melting process would not meet environmental guidelines for discharging into the storm water system.

Budget Review 2024/2025

The graph in Figure 1 shows the Winter Maintenance budget and actual expenditures compared to snowfall and snow days for the past five seasons.

Budget expenditures for the 2024/2025 winter season totalled $41 million including contributions to the Winter Maintenance Reserve. Expenditures by category were as follows: Equipment (25%), Labour (37%), Materials (23%) and Contractors (12%). Equipment and labour costs are the primary winter season costs and are typically proportional to snowfall. When crews are not working on snow clearing, they work on road repairs, debris pickup, winter sweeping, depot maintenance pothole repairs and service requests.

The Winter Maintenance Reserve total was $7.5 million at the end of 2024.

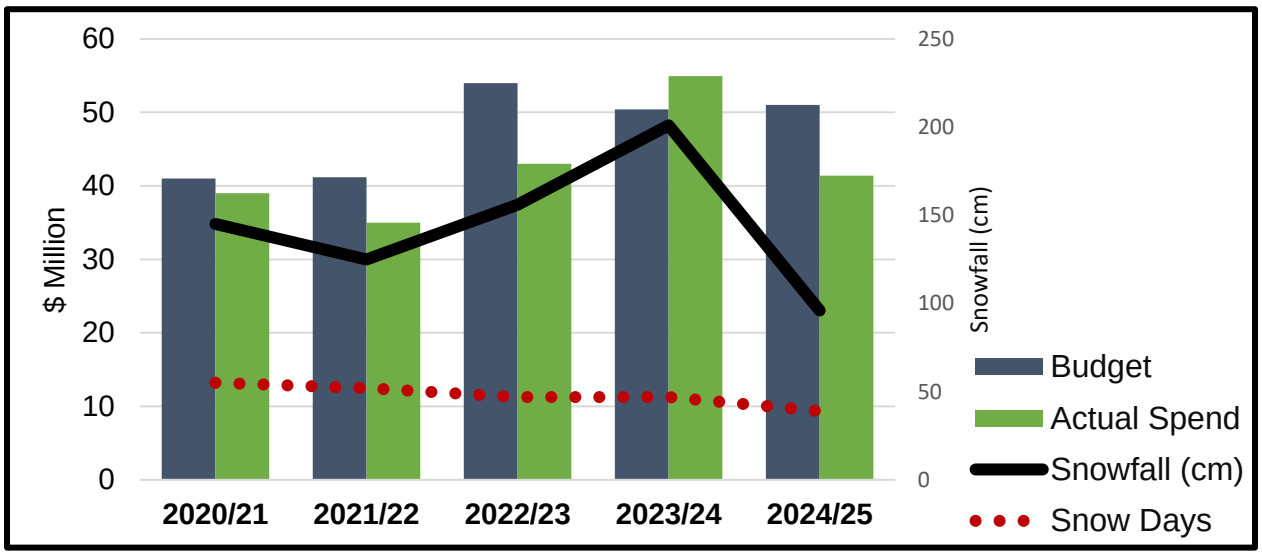

Figure 1: Expenditures and snow days 2020-2025. Budgets reflect Winter Season totals and not Fiscal year total.

Winter Maintenance Budget Details

The tables below show the budget and actual cost for the winter season of 2024/2025 for Mobility.

	For the period of October 2024 to December 31 2024	
Activity	Budget	Actual
Snow Removal P1 and P2	1,113,041	556,479
Snow Removal Residential	203,961	263,931
Ploughing P1 and P2	751,804	1,599,961
Sanding and Salting P1 and P2	14,434,333	10,973,447
Residential Sanding and Ploughing	203,961	263,931
Snow Dump Site Maintenance	58,333	0
Separate Bikeways	146,806	430,027
Snow Fencing	89,664	36,410
Anti Icing	192,753	315,241
Material Handling and Storage	231,242	127,219
Sidewalk SNIC Clearing	3,619,002	1,111,703
Winter Supplementary Work**	0	2,568,526
	1,841,996	623,885
Winter Operations	**22,886,896**	**18,870,761**
Winter Maintenance Reserve ***	0	(728,433)
2024 TOTAL	**22,886,896**	**18,142,327**

Table 5: 2024 Winter Maintenance expenditures and budget

	For the period of October 2024 to December 31 2024	
Activity	**Actual**	**Recovery**
Transit SNIC LRT Stations	214,351	214,351
Transit SNIC Bus Zones	1,479,299	2,061,916

Table 6: Calgary Transit - 2024 Winter Maintenance activity expenditures versus recovery

	For the period of January 2025 to April 30 2025	
Activity	Budget	Actual
Snow Removal P1 and P2	1,088,131	137,544
Snow Removal Residential	248,632	46,664
Ploughing P1 and P2	515,954	344,169
Sanding and Salting P1 and P2	18,191,365	13,044,141
Residential Sanding and Ploughing	1,925,924	3,770,545
Snow Dump Site Maintenance	62,057	647
Separate Bikeways	207,889	148,530
Snow Fencing	15,706	17,234
Anti-Icing	205,057	10,048
Material Handling and Storage	190,008	127,115
Sidewalk SNIC Clearing	4,578,842	2,809,902
Winter Supplementary Work	0	112,301
	1,153,956	2,739,303
Winter Operation	**28,383,521**	**23,308,141**
Winter Maintenance Reserve Transfer	0	0
2025 Total (Jan - April)	**28,383,521**	**23,308,141**
2024/25 Season Total	**51,270,417**	**41,450,469**

Table 7: 2024 Winter Maintenance YTD expenditures and budget

	Year to Date – For the period of January 2025 to April 30 2025	
Activity	**Actual**	**Recoveries**
Transit SNIC LRT Stations	300,965	300,965
Transit SNIC Bus Zones	523,453	524,087

Table 8: Calgary Transit 2025 YTD expenditures and recoveries

Table 9 below shows the Winter Maintenance expenditures on pathways and sidewalks during the 2024/25 winter season.

For the period of October 2024 to December 31 2024			
Sidewalk SNIC Clearing	**Operational Unit**	**Budget**	**Expenditures**
	Mobility	3,619,002	1,111,703
For the period of January 2025 to May 31 2025			
Sidewalk SNIC Clearing	**Operational Unit**	**Budget**	**Expenditures**
	Mobility	4,578,842	2,809,902
2024/25 Season Total		**8,197,844**	**3,921,605**

Table 9: Winter Maintenance expenditures on pathways/sidewalks during the 2024/2025 season

Winter Maintenance Policy Metrics

The Winter Maintenance program service levels are based on the Council approved Winter Maintenance Policy. During the 2024/25 winter, The City completed the process to update a new policy to ensure it is meeting citizen expectations, provides clear direction to Administration and achieves desired levels of service.

The purpose of the Winter Maintenance Policy is to:

- Support safe movement for Calgarians, visitors, goods and Emergency Services in accordance with the objectives of the Municipal Development Plan and Calgary Transportation Plan.
- Define The City of Calgary's Winter Maintenance operations by establishing priorities, service levels and guidelines for Winter Maintenance on streets, roads, sidewalks, pathways and transit facilities.
- Outline public responsibilities for Winter Maintenance of public spaces abutting private properties.

To align with the approved Winter Maintenance service levels outlined in the Policy, Performance Indicators (KPIs) were identified.

Category	Response Timeframe	Surfaces Maintained	Maintenance Standard
Priority 1	Within 18 hours	• High priority streets and roads with high motor vehicle volumes/speeds (20,000 vehicles per day) including those on the Primary Transit Network • High priority streets and roads within the Greater Downtown • Wheeling Lanes on or adjacent to Priority 1 routes including turn boxes and protected intersections.	Bare Pavement
	Within 24 hours	• Light rail transit stations • Priority bus stops • Priority pathways including stairs, ramps and bridges • Priority Curb Cuts, medians and traffic islands • Sidewalks adjacent to City owned infrastructure and land including stairs, ramps and bridges	
Priority 2	Within 36 hours	• Streets that typically support transit operations (volumes typically over 5,000 vehicles per day) • Wheeling Lanes on or adjacent to Priority 2 routes including turn boxes and protected intersections.	Bare Pavement
Priority 3	After 36 hours up to 72 hours	• Barriers of snow and/or ice at pedestrian crossings, major intersections, traffic islands and bus stops adjacent to Priority 1 and Priority 2 routes. • Playground zones	Snow and/or ice buildup cleared as needed
	After 36 hours and up to 7 Days	• Residential Streets	Hard Pack
		• Bus stops • Stop and yield sign areas at intersections	Snow and/or ice buildup cleared as needed

Figure 3: Winter Maintenance service levels

2024/2025 Snow Route Parking Bans

A Snow Route parking ban may be considered when snow accumulation of 10 centimetres or greater is forecast. Snow routes include major roadways and most transit bus routes. An advisory is issued when a snow event is expected in the forecast. This advisory is meant to serve as a warning that parking bans may soon be in effect on snow routes. Vehicles should be moved as

quickly as possible following the notice. Vehicles that remain parked on these roads during the ban are subject to enforcement, up to and including a parking tag and tow. Business Improvement Areas (BIAs) and the downtown core have overnight bans (9 pm. to 6 am.).

During the 2024/25 winter season, no snow route parking bans was activated.

Personnel, Equipment and Infrastructure

The Mobility Business Unit commits personnel, material, equipment, infrastructure, capital and operational funds to Winter Maintenance operations as follows:

- 420 personnel working rotating shifts, available 24/7 continuously throughout the season
- Material, including equipment consumables (i.e. plough blades) and snow remediation substances (salt, de-icing liquids and abrasives).

The various machinery and equipment include:

- 85 City owned tandem trucks and 16 leased trucks equipped to plough and apply materials
- 27 graders
- 9 snow blowers
- 11 smaller single axle trucks equipped to plough and apply materials in residential areas such as cul-de-sacs where tandems are unable to work
- 9 front-end loaders
- 8 Leased Articulating Tractors (Holder S75/C70)

Additional Information

Please visit The City’s Snow and Ice Control webpage at Calgary.ca/snow for more information on winter operations, Winter Maintenance clearing updates and Snow Route parking bans.