



2020-2021 Annual Winter Maintenance Summary

Date	September 22, 2021
To	Operations and Community Services Committee
From	Citizen Services
Service Area	Roadways & Transportation
Item No.	OCS21-23

RECOMMENDATION

That the Operations and Community Services Committee receive and file this report.

ISSUE

This report provides a summary of the City of Regina's (City) Winter Maintenance operations for the 2020/2021 winter season, including highlights, major operational challenges, actions taken to mitigate these challenges and key takeaways for future winter seasons.

IMPACTS

There is no accessibility, financial, environmental, policy/strategic, risk/legal or other implications or considerations with this report.

OTHER OPTIONS

There are no other options to consider with this report.

COMMUNICATIONS

Residents were advised of general winter maintenance operations and activities through several paid communication tactics such as radio, television and online advertising. Using

the City's social media channels, information was shared about various aspects of the winter maintenance program to help create realistic expectations about service levels.

As part of the Winter Maintenance Policy review, Administration engaged with residents and both internal and external stakeholders to gather feedback. This feedback was provided in the Winter Maintenance Policy Update report *CR20-85*.

DISCUSSION

The Winter Maintenance Policy (Policy) was approved by City Council and implemented in November 2007. The Policy guides operations to effectively support the health, safety, attractiveness, and economic viability of the city. Reviewed annually, the Policy was created to provide an acceptable and consistent level of service when maintaining the road network and to ensure safe winter driving conditions for residents of Regina. This includes guidelines and timelines regarding the plowing of streets, sidewalks, and alleys following snow events, and routine maintenance of the road network during the winter months.

Appendix A provides a detailed summary of the 2020/2021 winter maintenance activities and weather conditions. The following are highlights:

Environmental Conditions

The winter season is defined as the period from October 1 to April 30. The 2020/2021 season can be summarized as an average winter with:

- average winter season with average snowfall (58.5 centimetres)
- increased slippery conditions due to higher number of freeze/thaw cycles as compared to the average number
- increased number of snow days with over two centimetres snowfall (30 days) as compared to the average number
- extremely high winds throughout the season
- average daily minimum temperature lower than average number

Budget and Expenditures

The 2020 Winter Maintenance operating budget was \$8.91 million and total expenditures were \$8.05 million including transfer of \$1.4 million to mitigate COVID impact. The 2020 surplus was \$0.17 million after transferring \$1.4 million to mitigate COVID Impact. The reduced expenditure was due to below average environmental conditions during the early part of the year and general operational efficiencies.

The 2021 budget is \$8.45 million, with current expenditures of \$5.69 million as of June 30, 2021. The total expenditures for 2021 are forecasted to be \$8.45 million, based on average conditions expected for October to December.

Policy Objective Achievement

Regina experienced four snow events requiring plowing operations and winter maintenance activities outlined in the Policy. Plowing and ice control objectives were met during the season.

Key highlights are:

- completed systematic plowing of roads for the four storms
- applied more than 16,000 tonnes of sand and salt to mitigate slippery road conditions
- supplied over 68 tonnes of sand to sandbox locations for residents use
- generated \$285,000 revenue at the Snow Storage Site during 2020
- responded to 2,829 Service Requests within 81 per cent contact rate
- performed liquid salt trials (pre-wetting) on almost 90 per cent of arterial and collector roads
- efficient utilization of crews resulted in a total cost savings and cost avoidance of \$660, 052
- completed pilot study involving snow fences and snow ridges
- completed five years review on the Snow Storage Site User Fee project

Service Requests

During 2020/ 2021 the Seasonal Roadways Operations Branch received 2,829 Service Requests. Out of a total of 2,829 service requests, almost 18 per cent were related to ice-control on roads and sidewalks. This is a significant reduction as compared to the previous seasons. Maximum ice-control related service requests were received during the month of December (284). Overall, January received the highest number of service requests as compared to other months in the season. Majority of the Service Requests received during the season focused on snow plowing on roads, ice control and snow ridges.

Efficient Utilization of Crews

Winter Maintenance crews supported activities such as hauling of material, checking and filling utility excavation cut repairs and supporting the Pothole Program for roads and alleys.

These efforts brought operational efficiency and resulted in a total cost savings and cost avoidance of \$660,052. This ensured the winter maintenance crews were efficiently engaged and well utilized during the season.

Snow Routes

In follow up to report *CR18-103*, to expand Snow Routes on an additional 11 kilometres of road sections, we were not able to implement this in the 2019/2020 season due to less snow. Which resulted in no snow routes being declared.

During 2020/ 2021 season snow routes were declared during November, December and January on a total of 16 kilometres of the road network. We observed excellent 'no-parking'

compliance rates. This allowed for unrestricted snow plowing and improved snow clearing on most locations where cars were not parked during snow route implementation.

During the Q1 and Q2 of 2022, additional road sections with similar challenges as on the existing snow routes would be identified and brought under the snow route expansion bench mark study during 2022-2023 winter season with possible snow route implementation pilot during 2023-2024 winter season.

Liquid Salt Trial for Ice Control

Dedicated ice control equipment was used to gradually extend the liquid salt trials to almost 90 per cent of the arterial and collector roads. The trial results continued to indicate that the pre-wetted material adhered to the pavement better and remained effective for longer periods of time. The sections of the roads where pre-wetted material was applied reached bare pavement condition sooner than with the use of dry sand/salt only. Based on the success of the trials the remaining road network will be brought under the pre-wetting operational plan during 2021- 2022 winter season.

Snow Fence/Snow Ridge Pilot Study

As a result of report CR19-68 presented to the Council on July 29, 2019, a pilot study was planned during 2019-2020 season in order to test the benefits and/or drawbacks of snow fences and snow ridges. Due to less snow during the season, sufficient data could not be collected as desired. However, during 2020/2021 season the pilot was successfully completed. The data indicated that snow-ridges are a better alternative to snow fences to restrict drifting snow due to winds. Further details of the pilot study are in Appendix A.

Findings of the pilot study were considered during the review of the Winter Maintenance Policy (Policy) in 2020. The Snow Ridge program has been included in the updated Policy as one of the policy objectives. Administration intends to continue with the Snow Ridge Program to alleviate drifting snow conditions on outer city roads as endorsed by the Council during July 29, 2019 meeting.

Winter Maintenance Policy Review

At the September 30, 2020 meeting of City Council, City Council passed report CR20-85 approving enhancements to the Winter Maintenance Policy through the 2021 budget process as well as to direct Administration to bring options to amend *The Clean Property Bylaw* (Bylaw) with respect to sidewalk snow and ice clearing in Q3 2021.

On September 22, 2021 an updated Level of Service and Policy document will be brought back to the Operations and Community Services Committee for final review and approval. A communications strategy will be implemented to inform residents of changes to winter maintenance operations in advance of the 2021/2022 winter season.

Snow Storage Site Fee Charging System Review

In follow up of the report *CR15-86*, Administration has been collecting and evaluating data on usage patterns annually and comparing with the operating costs. A five-year analysis after the implementation of the user fee system was conducted to ensure this initiative addressed the previously identified objectives of implementation of a full cost recovery fee structure for commercial contractors in line with the Official Community Plan (OCP) as well as to provide safer site conditions for site users and staff.

The objective of the implementing a Snow Storage Site Fee Charging System was to recover only the portion of the total cost of managing the snow storage site, that was on account of the snow brought to the site by private haulers and contractors, so that there is no additional tax burden on the City of Regina residents.

The analysis indicated that the system has been successful in terms of meeting the OCP guidelines of recovering the portion of the costs of snow storage site operation, incurred due to private haulers; overall user satisfaction and enhanced site safety due to proper lighting, improved roads, 24 hours a day/seven days a week site surveillance, well managed traffic flow and dedicated areas for larger and smaller trucks. There are minimal Service Requests or concerns raised by the snow storage site users on account of fee charging system, customer handling on the site; or general site usage like snow storage, traffic flow or access of the site.

Administration will continue the practice of reviewing the snow storage site processes every 5-years including fee structure or as required.

Emergency Winter Response Plan

An emergency winter response plan has been prepared in consultation with internal and external stakeholders to address emergency situations caused due to extreme winter weather. Further details are in Appendix A.

Lessons Learned and Continuous Improvements

Regina has been experiencing diminishing snow accumulation and warmer temperatures. Long-range linear analysis indicates that this trend could possibly continue for coming winters as well. Although this would influence future planning of winter maintenance programs, consideration will still be given to the possibilities of extreme and unpredictable nature of winter seasons.

The Policy survey completed during the spring of 2020 provided feedback regarding the expected levels of service for key winter maintenance programs.

Considering the above factors and lessons learned from the last season, Administration is prepared to handle future challenges by undertaking the following actions:

- continue further analysis of the Snow Route Program to the identified critical street sections to be able to clear the roads quicker and more efficiently

- expand the use of liquid salt on all major road categories
- continue to review options to further improve the material storage facility including possibility of covered storage areas for the dry material and safer liquid salt storage areas
- continue with the Snow Ridge Program
- update the Policy based on Council considerations and modify current winter maintenance operations to bring operational efficiencies and enhanced levels of service in line with the new Policy

DECISION HISTORY

At the September 30, 2020 meeting of City Council, City Council passed report *CR20-85* approving enhancements to the Winter Maintenance Policy through the 2021 budget process as well as to direct Administration to bring options to amend *The Clean Property Bylaw* (Bylaw) with respect to sidewalk snow and ice clearing in Q3 2021.

This annual report provides the Operations and Community Services with a brief summary of the previous winter seasons accomplishments, challenges and learnings.

The recommendation in this report is within the delegated authority of the Committee.

Respectfully Submitted,

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Chris Warren, Director, Roadways & Transportation

8/24/2021

Respectfully Submitted,

A black ink signature, appearing to be 'Kim Ohra', written over a horizontal line.

Kim Ohra, Executive Director, Citizen Services

9/13/2021

Prepared by: Neeraj Saroj

ATTACHMENTS

Appendix A - 2020-2021 Annual Winter Summary