

Annual Winter Maintenance Summary Report 2019/ 2020

Date	September 23, 2020
To	Public Works and Infrastructure Committee
From	Citizen Services
Service Area	Roadways & Transportation
Item No.	PWI20-7

RECOMMENDATION

That the Public Works and Infrastructure Committee receive and file this report.

ISSUE

This report provides a summary of the City of Regina's (City) Winter Maintenance operations for the 2019/2020 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. These were reduced in frequency due to the below average snowfalls. Using the City of Regina's

(City) 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 will be provided in the corresponding Winter Maintenance Policy Update report.

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 2019/2020 winter maintenance activities and weather conditions. The following are highlights of that report.

Environmental Conditions

The winter season is defined as the period from October 1 to April 30. There were only five days with more than two centimetres of snow during the season and only 64 freeze thaw days. The season can be summarized as follows:

- below average winter season
- below average snowfalls
- above average temperatures – generally warmer winter season temperatures
- reduced slippery conditions due to lower number of freeze/thaw cycles as compared to average number
- almost 50 per cent reduction in number of days with snowfalls over two centimetres
- significantly lower number of service requests during the season

Budget and Expenditures

The 2019 Winter Maintenance operating budget was \$8.86 million and total expenditures were \$7.70 million in the fiscal year. The reduced expenditure was due to below average environmental conditions during the year and general operational efficiencies.

The 2020 budget is \$8.809 million, with current expenditures of \$3.28 million as of July 30, 2020. The total expenditures for 2020 are forecasted to be \$6.85 million, based on average conditions expected for October to December. In addition, the Winter Maintenance budget was reduced by \$1.4 million to offset the projected negative financial implications of Covid-19, resulting in an updated forecasted expenditure of \$8.25 million.

Policy Objective Achievement

Regina experienced two 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 of the achievements include:

- successfully completed systematic plowing of roads during two storms in the season
- applied more than 10,450 tonnes of sand and salt during the season to mitigate slippery road conditions due to increased freeze thaw cycles
- supplied over 53 tonnes of sand to various sandbox locations for residents to use on their sidewalks and driveways
- generated \$297,000 revenue at the Snow Storage Site during 2019
- stored and maintained over 260,000 cubic metres of snow at the Snow Storage Site
- responded to 1,002 Service Requests with 86 per cent contact rate
- performed liquid salt trials (pre-wetting) on additional street sections
- efficient utilization of crews resulted in a total cost savings and cost avoidance of \$871,000 during the season

Service Requests

During 2019/ 2020 winter season there was a significant drop in the number of Service Requests over previous winters. This could be attributed to a very mild winter season. Of the 1002 service requests received, almost 45 per cent were related to ice-control on roads and sidewalks.

Efficient Utilization of Crews during Mild Winter

With a mild winter season 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 \$871,277. There was also a significant reduced number of casual employees recalled during the season. This ensured the winter maintenance crews were efficiently engaged and well utilized during the season.

Snow Routes

Snow routes was not required during the season due to less snow accumulation. The planned snow routes pilot study could not be completed on additional 11 kilometers of road sections as per report *CR18-103*. However, the relatively milder winter allowed Administration to continue monitoring the pilot locations as done during the benchmarking study and continued interacting with major stakeholders like the Pasqua Hospital parking department to ensure an effective implementation of the program.

Administration will continue to include these 11 kilometres of pilot locations under routine Snow Routes Program.

Liquid Salt Trial for Ice Control

Dedicated ice control equipment was used to gradually extend the liquid salt trials to almost 50 per cent of the arterial and collector roads during the season. 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 2020- 2021 winter season.

Snow Fence/Snow Ridge Pilot Study

As a result of report CR19-68, 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, an observation was made that the plastic fence required frequent maintenance and monitoring throughout the season due to windy conditions.

Administration intends to continue the trial in the 2020/2021 season, and the option is referenced in the corresponding Winter Maintenance Policy Update report.

Winter Maintenance Policy Review

A review of the Policy was completed to align with the *Official Community Plan (OCP)*, *Transportation Master Plan (TMP)* and community needs and priorities. The review process included identifying critical areas of concerns in winter maintenance programs based on research of other jurisdictions, study of historic concerns related to winter maintenance, feedback from internal and external stakeholders and recommendation of suitable options for updating the Policy.

The corresponding Winter Policy Update report includes recommendations along with any budget or operational implications. Once the recommendations in the report are considered, an updated Level of Service and Policy document will be brought back to the Public Works and Infrastructure Committee in Q3, 2021 for final review and approval. Any changes to winter maintenance operations will be communicated extensively to residents to ensure awareness in advance of the 202/2022 winter season.

Lessons Learned and Continuous Improvements

As a result of the long-ranged trend analysis of the environmental conditions, Regina has experienced diminishing snow accumulation and warmer temperatures amounts over years and the 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 would still be given to the possibilities of extreme and unpredictable nature of winter seasons. The Policy survey completed during the spring of 2020 provided good feedback regarding the expected levels of service for key winter maintenance programs.

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

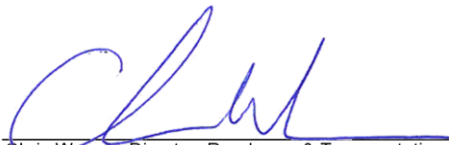
- continue further analysis of the Snow Route Program to the identified critical street sections to be able to clear the roads quicker and more efficiently
- expand the use of liquid salt on all major road categories by adopting pre-wetting technology, improving the time required for roads to reach bare pavement conditions
- continue to review options to further improve the material storage facility including possibility of covered storage areas for dry material and safer liquid salt storage areas
- continue with the Snow Ridge Program in the coming season for efficiently handling concerns due to blowing snow around new subdivisions or open areas
- update the Policy following Council considerations and modify current winter maintenance operations to bring operational efficiencies and enhanced levels of service in line with the new Policy
- prepare an emergency winter response plan in consultation with internal and external stakeholders such as Emergency Management, Regina Police Service, Regina Transit, and Solid Waste Operations

DECISION HISTORY

This annual report provides the Public Works and Infrastructure Committee 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,



Chris Warren, Director, Roadways & Transportation

9/1/2020

Respectfully Submitted,



Kim Conra, Executive Director, Citizen Services

9/15/2020

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ATTACHMENTS

Appendix A - Annual Winter Maintenance Summary 2019-2020