



# **Operations and Community Services Committee**

**Wednesday, September 22, 2021  
2:00 PM**

**Henry Baker Hall, Main Floor, City Hall**



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**OFFICE OF THE CITY CLERK**

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**Public Agenda  
Operations and Community Services Committee  
Wednesday, September 22, 2021**

**Approval of Public Agenda****Minutes Approval**

Operations and Community Services Committee - Public - Jun 16, 2021 2:00 PM

**OCS Public Reports**

OCS21-23 2020-2021 Annual Winter Maintenance Summary

**Recommendation**

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

OCS21-24 Implementation of Updated Winter Maintenance Policy

**Recommendation**

The Operations and Community Services Committee recommends that City Council:

1. Approve the updated Winter Maintenance Policy (Appendix B); and
2. Direct Administration to implement the updated Policy to be in effect as of November 1, 2021.

OCS21-25 Sidewalk Snow Clearing Provisions - Clean Property Bylaw Amendment

**Recommendation**

The Operations and Community Services Committee recommends that City Council:

1. Approve the amendments to *The Clean Property Bylaw, Bylaw No. 9881* (Bylaw) as detailed in Option 1 and appendix A, effective January 1, 2022.
2. Allocate \$510,000 in the proposed 2022 General Operating Budget to



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fund three additional Bylaw Enforcement Officers, one administrative Bylaw position, one additional position in the Legal Services Branch and additional associated costs.

3. Instruct the City Solicitor to prepare the necessary amending bylaw to be brought forward to the October 13, 2021 meeting of City Council following the approval of these recommendations.
4. Approve these recommendations at its meeting on September 29, 2021

### OCS21-26 Disclosure of Toxic Spills and Leaks

#### **Recommendation**

The Operations and Community Services Committee recommends that City Council:

1. Instruct Administration to implement the proposed spill/release reporting procedure as outlined in this report.
2. Instruct Administration to prepare an annual report for public release, beginning in Q2 of 2022, that will include the following information:
  - a) any releases into the City of Regina wastewater or storm water systems
  - b) a summary of all spills reported to federal and provincial regulators by the City of Regina
  - c) a summary of spill volume, response activity and associated cleanup costs; and
  - d) a summary of actions taken against persons or businesses responsible for spills.
3. Instruct Administration to post the following information to the City of Regina's Open Data website annually, beginning in Q2 of 2022:
  - a) wastewater effluent quality results (as per the Wastewater Treatment Plant's Permit to Operate) including records dating back to 2017,
  - b) results of Wascana Creek water sampling events beginning in Q2 of 2022; and
  - c) all wastewater agreements from 2021 onward, in accordance with requirements in *The Local Authority Freedom of*



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*Information and Protection of Privacy Act, The Cities Act, 2015, and other applicable legislation.*

4. Authorize the development of an immediate reporting system to alert downstream users, to be activated when the City of Regina becomes aware of an identified spill event.
5. Instruct Administration to continue to follow federal and provincial regulations for spill reporting and public notice.
6. Remove item *MN20-16* from the List of Outstanding Items for City Council.
7. Approve these recommendations at its meeting on September 29, 2021.

OCS21-27    11th Avenue Revitalization Project Consulting Services over \$750,000

**Recommendation**

The Operations and Community Services Committee recommends that City Council:

1. Authorize the Executive Director, Citizen Services or designate, to initiate a public procurement process to engage consulting and professional services over \$750,000 to support the preliminary design, detailed design and construction services related to the 11th Avenue Revitalization Project.
2. Authorize the Executive Director, Citizen Services or designate, to negotiate, award, enter into an Agreement with the highest ranked proponent, to authorize any amendments to the Agreement that do not substantially change what is described in this report and to authorize any ancillary agreements or documents required to give effect to the Agreement.
3. Authorize the City Clerk to execute the necessary agreements after review and approval by the City Solicitor.
4. Approve these recommendations at its meeting on September 29, 2021.



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OCS21-28    OCS21-28 : In-kind Services and Community Cleanup

**Recommendation**

The Operations and Community Services Committee recommends that City Council:

1. Allocate the \$97,000 allocated through the 2021 budget for in-kind services to a Community Association Clean-Up Program.
2. Remove item #5 from item *MN21-3 - Clean Communities* on the list of outstanding items for City Council.
3. Approve these recommendations at its meeting on September 29, 2021.

OCS21-29    OCS21-29 : Roadway Noise Attenuation Policy Update

**Recommendation**

Operations and Community Services Committee recommends that City Council:

1. Direct Administration to bring forward the budget implications of a noise wall pilot through the 2022 budget deliberations.
2. Direct Administration to report back to Operations and Community Services Committee with the findings of the pilot, an updated Roadway Noise Attenuation Policy and recommended implementation strategy by Q3 of 2024, provided that the pilot receives funding through the 2022 budget deliberations.
3. Direct Administration that any update to the Roadway Noise Attenuation Policy be based on the following principles:
  - a. The current noise limit of 65 dB(A)  $L_{dn}^1$  be maintained for both existing and new areas as stated in the current Roadway Noise Attenuation Policy.
  - b. The permitted noise attenuation methods be expanded.

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<sup>1</sup> dB(A)  $L_{dn}$  – Refers to the day-night sound level in decibels, or an average equivalent sound level over a 24-hour period, with a penalty added for noise during night hours (10pm to 7am) to reflect the negative impact of night-time noise



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- c. That noise calculation methodology be updated to modern standards.
  - d. That locations where noise mitigation is impractical continue to be exempted from the Roadway Noise Attenuation Policy.
- 4. Direct Administration to consult with the land development industry regarding the proposed approach to noise attenuation in new development areas as described within this report and report back to Operations and Community Services Committee by Q3 2024.
- 5. Approve these recommendations at its meeting on September 29, 2021.

### **Adjournment**

AT REGINA, SASKATCHEWAN, WEDNESDAY, JUNE 16, 2021

AT A MEETING OF OPERATIONS AND COMMUNITY SERVICES COMMITTEE  
HELD IN PUBLIC SESSION

AT 2:00 PM

**These are considered a draft rendering of the official minutes. Official minutes can be obtained through the Office of the City Clerk once approved.**

Present: Councillor Bob Hawkins  
Councillor Lori Bresciani (Videoconference)  
Councillor Landon Mohl (Videoconference)  
Councillor Cheryl Stadnichuk (Videoconference)  
Councillor Shanon Zachidniak (Videoconference)

Also in Attendance: Council Officer, Martha Neovard  
City Clerk, Jim Nicol  
Legal Counsel, Jayne Krueger ((Videoconference)  
Executive Director, City Planning & Community Dev., Diana Hawryluk  
Executive Director, Citizen Services, Kim Onrait  
Director, Parks, Recreation & Cultural Services, Laurie Shalley  
(Videoconference)  
Manager, Planning & Partnerships, Janine Daradich  
(Videoconference)

RESOLUTION FOR PRIVATE SESSION

**Councillor Shanon Zachidniak moved, AND IT WAS RESOLVED that in the interest of the public, the Committee move into private session.**

RECESS

**Councillor Shanon Zachidniak moved, AND IT WAS RESOLVED, that the Committee recess for five minutes.**

The Committee recessed at 2:05 pm.

(The meeting reconvened at 2:51 pm.)

APPROVAL OF PUBLIC AGENDA

**Councillor Lori Bresciani moved, AND IT WAS RESOLVED, that the agenda for this meeting be approved, as submitted.**

MINUTES APPROVAL

**Councillor Cheryl Stadnichuk moved, AND IT WAS RESOLVED, that the minutes for the meeting held on May 19, 2021 be adopted, as circulated.**

ADMINISTRATION REPORTS

OCS21-21: Downtown Accessible Washroom Update

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**Recommendation**

The Operations and Community Services Committee recommends that City Council:

1. Direct Administration to include the capital funding for the planning and design of a permanent, stand-alone, accessible washroom in the downtown as part of the proposed 2022 capital budget.
2. Direct Administration to include the capital and operating funding for the construction of a downtown washroom facility as part of the proposed 2023 capital budget.
3. Approve these recommendations at its meeting on June 23, 2021.

**Councillor Lori Bresciani moved that the recommendations contained in the report be concurred in.**

The Clerk called the vote on Councillor Bresciani's motion.

	In Favour	Against
<b>Councillor Lori Bresciani</b>	✓	
<b>Councillor Cheryl Stadnichuk</b>	✓	
<b>Councillor Shanon Zachidniak</b>	✓	
<b>Councillor Landon Mohl</b>	✓	
<b>Councillor Bob Hawkins</b>	✓	
	<b>5</b>	<b>0</b>

**The motion was put and declared CARRIED.**



OCS21-22 : Varsity Park Recreation Upgrades Donation

**Recommendation**

The Operations and Community Services Committee recommends that City Council:

1. Approve acceptance of the donation of \$140,000 for the construction of a basketball court, winter water service, trees and site furnishings in Varsity Park.
2. Delegate authority to the Executive Director, City Planning & Community Development, or designate, to negotiate and approve a Donation Agreement(s) between the City of Regina and the Arcola East Community Association regarding the donation as further described in this report, any amendments to the Agreement that do not substantially change what is described in this report and any ancillary agreements or documents required to give effect to the Agreement.
3. Approve these recommendations at its meeting on June 23, 2021.

The following addressed the Committee:

- Elizabeth Lockert, Regina, SK.
- Serena Ward, representing the WS Hawrylak School Community Council, Regina, SK.
- Terry Ginter, representing the Arcola East Community Association, Regina, SK.

**Councillor Lori Bresciani moved that the recommendations contained in the report be concurred in.**

The Clerk called the vote on Councillor Bresciani's motion.

	In Favour	Against
<b>Councillor Lori Bresciani</b>	✓	
<b>Councillor Landon Mohl</b>	✓	
<b>Councillor Cheryl Stadnichuk</b>	✓	
<b>Councillor Shanon Zachidniak</b>	✓	
<b>Councillor Bob Hawkins</b>	✓	
	<b>5</b>	<b>0</b>

**The motion was put and declared CARRIED.**

RESOLUTION FOR PRIVATE SESSION

**Councillor Shanon Zachidniak moved, AND IT WAS RESOLVED, that in the interest of the public, the remaining items on the agenda be considered in private.**

RECESS

**Councillor Shanon Zachidniak moved, AND IT WAS RESOLVED, that the Committee recess for five minutes.**

The Committee recessed at 3:49 pm.

\_\_\_\_\_  
Chairperson

\_\_\_\_\_  
Secretary



## 2020-2021 Annual Winter Maintenance Summary

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

### RECOMMENDATION

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

### ISSUE

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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

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

### OTHER OPTIONS

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There are no other options to consider with this report.

### COMMUNICATIONS

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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**

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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**

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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,

A blue ink signature, appearing to be 'CW', written over a horizontal line.

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



# **ANNUAL WINTER MAINTENANCE SUMMARY**

**2020/2021**





**Slow down.  
Be safe.**

## Contents

<b>Introduction .....</b>	<b>3</b>
<b>2020/2021 Accomplishments .....</b>	<b>3</b>
<b>Budget &amp; Expenditures .....</b>	<b>5</b>
<b>Policy Objective Achievements.....</b>	<b>7</b>
<b>Training Program .....</b>	<b>10</b>
<b>Sandboxes .....</b>	<b>11</b>
<b>2021/ 2022 Service Improvements.....</b>	<b>11</b>
<b>Communication with the Community .....</b>	<b>12</b>
<b>Service Requests .....</b>	<b>12</b>
<b>Success in Collaboration.....</b>	<b>13</b>
<b>Utilization of Winter Maintenance Crews.....</b>	<b>14</b>
<b>Snow Routes Project.....</b>	<b>15</b>
<b>Use of Liquid Salt in Ice Control .....</b>	<b>16</b>
<b><i>The Clean Property Bylaw Provisions - Sidewalk Snow Clearing</i> .....</b>	<b>17</b>
<b>Snow Fence/Snow Ridge Pilot Study .....</b>	<b>18</b>
<b>Winter Emergency Response Plan.....</b>	<b>22</b>

# Introduction

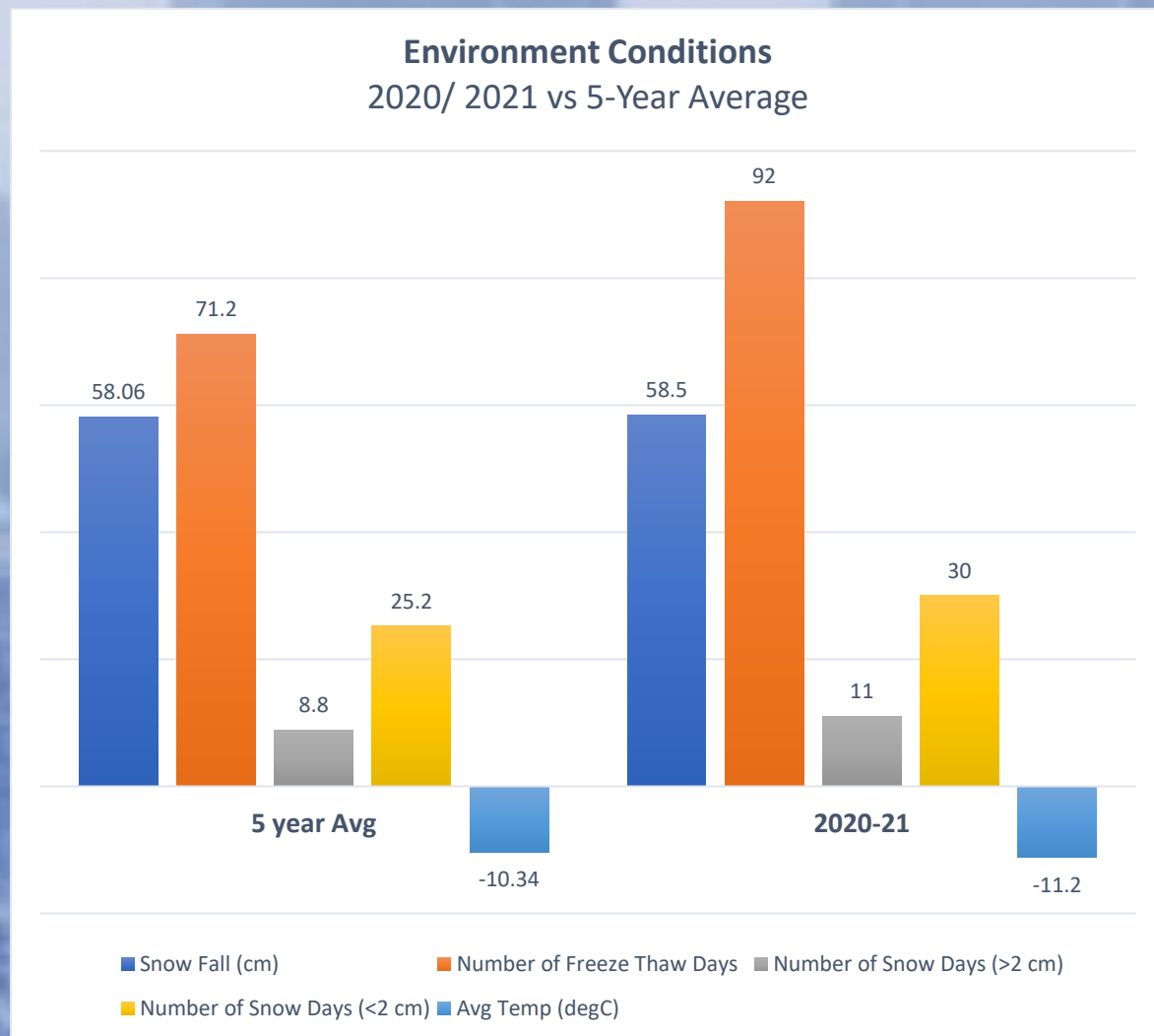
Approved by City Council on December 18, 2006, and implemented in November 2007, the Winter Maintenance Policy (Policy) guides operations that effectively supports the health, safety, attractiveness, and economic viability of the city. Reviewed annually, the Policy was created in an effort to provide an acceptable and consistent level of service when maintaining the road network and to ensure safe winter driving conditions for the citizens 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.

## 2020/2021 Accomplishments

- applied more than 16,000 tonnes of sand and salt to mitigate slippery road conditions due to increased freeze thaw cycles
- supplied over 68 tonnes of sand to various sandbox locations for residents to use on their sidewalks and driveways
- generated \$285,000 revenue at the Snow Storage Site
- responded to 2,829 Service Requests with 81% contact rate
- performed liquid salt trials (pre-wetting) on additional street sections
- efficient utilization of winter maintenance crews during milder season, resulted in a total cost savings and cost avoidance of \$660,052

## Regina residents experienced an average winter season 2020/2021

Average snowfall, above average freeze thaw days and below average daily temperatures

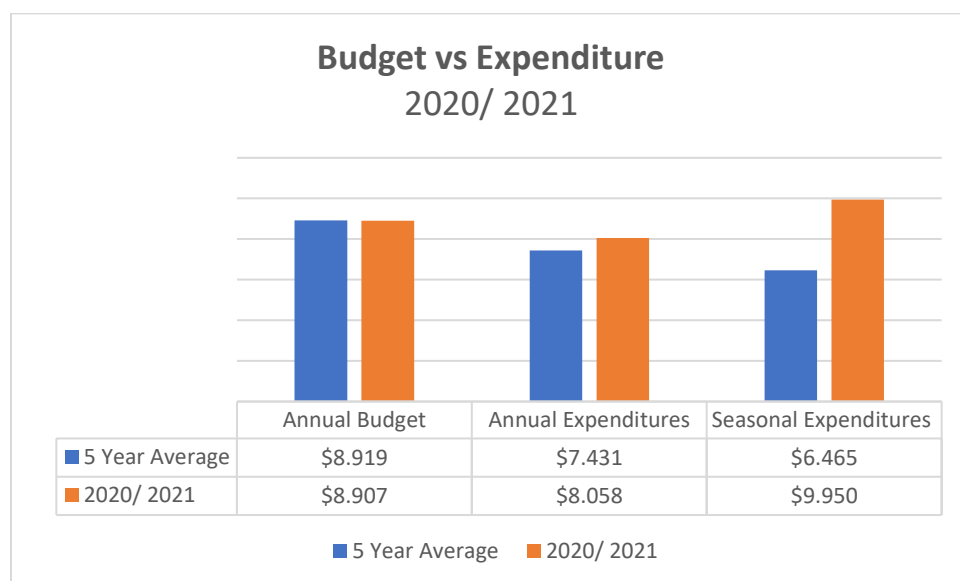


# Budget & Expenditures

The Winter Maintenance budget is used for the delivery of services to meet the objectives outlined in the Policy. The 2020 budget was \$8.91 million and total expenditures were \$8.05 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 2020 annual expenditure as well as 2020/2021 seasonal expenditures were higher than the respective 5-year average values. Winter Maintenance Branch identified major savings as a result of various initiatives, and close monitoring and analysis of winter maintenance activities.

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



*\*Seasonal expenditures represent traditional winter season expenditures between October and April*

## Winter Road Maintenance Reserve:

The Winter Road Maintenance Reserve is an operating reserve used to manage annual fluctuations in the winter road maintenance program expenditures that may arise due to unpredictable winter events. Through a reserve review and subsequent Council approval in May 2018, which included analyzing historical expenditures, it was determined that a minimum limit of \$1 million and maximum limit of \$2 million was found to be reasonable to fund any fluctuations in seasonal expenditures. The amount in Winter Road Maintenance Reserve (WRMR) as on Dec 31, 2021 is expected to be \$ 1.805 million subject to average weather conditions during Q4 of 2021.

# POLICY OBJECTIVES



All roads are made passable for **EMERGENCY RESPONSE VEHICLES**



**PRIORITY 1 ROADS:** Normal winter driving conditions and reasonable sidewalk access are provided on key routes through systematic plowing and sanding operations



**PRIORITY 2 ROADS:** Normal winter driving conditions and reasonable sidewalk access are provided along regional commercial developments and secondary routes through systematic plowing and sanding operations



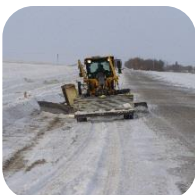
**PRIORITY 3 ROADS:** Normal winter driving conditions are provided along tertiary routes through systematic plowing and sanding operations



Safety and travel efficiency are provided through the plowing and removal of windrows from in front of **GUARD RAILS** and off of **BRIDGE DECKS**



**ALLEYS** are passable for the collection of solid waste collection and access by utility companies & the public



Normal winter driving conditions are maintained with **SNOW REMOVAL** operations



**RESIDENTIAL** and low volume routes are made passable through **PLOWING** operations

# Policy Objective Achievements



1,100 km of roads

16,024 tonnes of  
sand and salt



\$660,052 total cost  
savings & cost  
avoidance

Winter Maintenance activities require a great deal of coordination as the City crews cover a lot of distance when clearing snow each winter. There are nearly 1,100 km of roads in our community and winter crews are hard at work during all hours to keep our roads safe.

The community experienced five big snow events requiring major plowing operations and winter maintenance activities outlined in the Policy. Three of these snow events had snow accumulation amounts over seven centimetres. The other two snow storms had approximately four centimetres of snow accumulation for each event. High priority

roads were systematically plowed after these storm events. The storm in March did not require a systematic plow due to less snow but still Category 1 and 2 roads were plowed following systematic maintenance response guidelines. The weather forecast models were not able to predict correct snowfall amounts throughout the season posing challenges with operational planning. There were 11 days during the season with snowfall amounts more than two centimetres and approximately 30 days with snowfall amounts less than two centimetres. Months of December and April reported the highest amounts of snow fall during a single event. During the April storm, we had to pull all resources deployed in shoulder season activities like sweeping of arterials and sub-divisions, concrete cuts, pot hole patching etc. The 2020-21 winter season recorded high wind gusts on several days during the season. The speed of maximum wind gusts varied between 76 kilometres per hour in November to 127 kilometres per hour in January. Windy conditions during the season required the winter maintenance crews to utilize loaders to open plugged alleys several times during the season. City owned and contracted loaders were used systematically to clear alleys all over the community.

Higher forecasts of snow as well as consistent snowfall during all months of the season required the entire fleet of City graders and additional contractor graders to ensure the policy objectives related to plowing of major roads was met as per guidelines. Both plowing and ice control objectives were met during the season.



## 2020-2021 Major Snow Events

Date	Accumulation	Forecast	Systematic Plow by Category					
			1	2	3	4	5	Alleys
November 9	10 cm over 24 hours	40 cm	x	x	X	X		
December 22	7 cm over 24 hours	15 cm	x	x	X	X		X
January 14	4 cm over 24 hours	30 cm	x	x				
January 26-February 5	Residential Plow to reduce ruts						X	
March 9	4 cm over 24 hours	10-15 cm	X	X				
April 13	8 cm over 24 hours	18-20 cm	X	X				

## Residential Plow:

As per the winter maintenance policy, a systematic residential plow is triggered with 25 centimetres of snow accumulation during a single snow event. Although we didn't get a 25 centimetres snow event. Still based on the field inspections and residents' service requests, a residential plow was completed by the winter maintenance crews from January 26 till February 5 in order to reduce ruts on the residential roads and to enhance safety and accessibility on these roads. The decision of the residential plow was taken as several smaller snow accumulations between November and January, accompanied with strong wind conditions caused excessive snowpacks on a number of residential roads. As shown in the Environment Conditions graph on page 4 of this document, 2020-2021 winter season experienced increased number of days with less than two centimetres snow as compared to the five-year average. Residential plow schedule was shared with the residents on City's website.

## Winter Maintenance Modes:

When staff move into the winter season in November of every year, they are scheduled to provide around the clock service with 20-hour coverage, seven days a week. This helps minimize overtime while improving response time during storms.

When the snow starts falling, roads are prioritized, and the busiest roads are plowed first. Factors that contribute to the priority include traffic volumes, traffic speeds, and emergency routes. While the snow is falling, winter crews primarily focus attention on Category 1 and 2 streets, and this is called Storm Mode in the Policy. Category 1 roads include our major arterials and high-speed roads such as Lewvan Drive, Ring Road, Albert Street and Broad Street. Category 2 roads include streets like Elphinstone Street, Broadway Avenue and Regina Avenue. We continuously cycle these streets providing ice control and plowing operations for the duration of the snow event. The objective is to keep the major roads passable for the duration of the storm.



After the snow stops falling, we restart plowing operations to ensure the busiest roads are plowed first, working our way through the road network – Systematic Mode.

Storm Mode means priority clearing of Category 1 & 2 roads like:

- |                  |                       |
|------------------|-----------------------|
| ❄️ Lewvan Drive  | ❄️ Elphinstone Street |
| ❄️ Ring Road     | ❄️ Broadway Avenue    |
| ❄️ Albert Street | ❄️ Regina Avenue      |
| ❄️ Broad Street  |                       |

Category 1 roads are cleared within 24 hours and Category 2 roads are cleared within 36 hours, provided the community received over five centimetres of snow. These are often completed at the same time as many of these roads intersect so it is operationally efficient to combine them.

As the Category 1 and 2 roads are completed, crews move to Category 3 roads, plowing them within 48 hours if accumulations were ten centimetres or greater. These include low volume major collectors like Dalglish Drive, Harvard Way and Woodland Grove Drive. It also includes industrial/commercial roads and Transit routes that are not on Category 1 or 2 roads.

Then we move on to Category 4 roads which include streets around school zones, like Maple Leaf Crescent, Coronation Street, Cowan Crescent and other minor collectors. Based on five-year average, Category 1 through 4 streets usually experience a Systematic Plow four times in a season.

Category 5 roads are plowed after 25 centimetres of snow, when weather and time permits. These residential roads have the lowest traffic volumes. While we may not plow them as often, we make sure that they are passable for services such as garbage and recycling collection through other maintenance activities such as the Ice Shaving program.



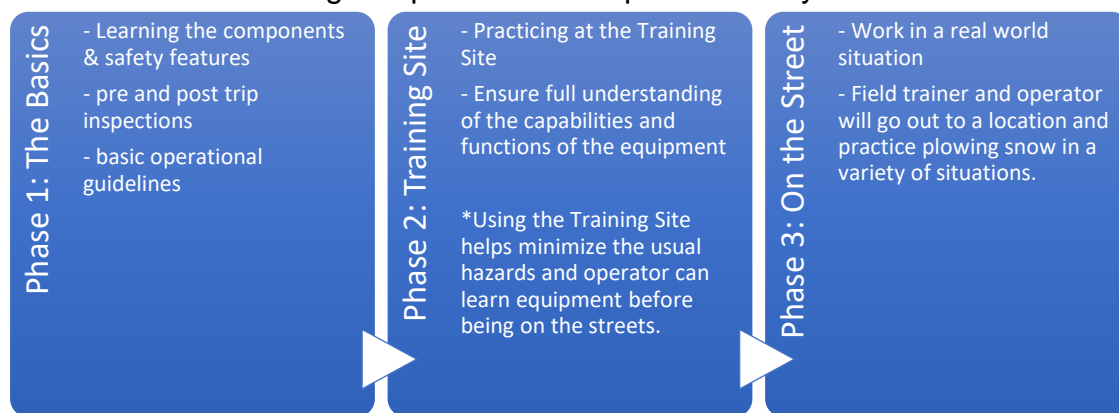
After Systematic Mode is completed, crews go into Routine Maintenance, returning to all roads to ensure that proper plowing operations took place and that the end conditions meet the Policy guidelines or post snow event cleanup including making sure all transit stops have snow ridges cleared to a minimum of 12 metres in length within seven days on Category 1 & 2 roads.

Routine Maintenance activities include:

- ❄ Snow Removal on Category 1 and 2 roads
- ❄ Ice control
- ❄ Checking, plowing, and snow removal at:
  - ❄ Schools - school bus unloading zones are free of snow ridges
  - ❄ Transit Routes and Hotspots - parking lanes clear and safe travel widths
  - ❄ Bridge decks and guard rails - for safe travel over and around
- ❄ Plowing and ice control on sidewalks that are City responsibility
- ❄ Snow Storage Site maintenance and operation (24/7)
- ❄ Filling and maintaining sand boxes for public use

## Training Program

Winter operations require the use of heavy equipment like motor graders, front end loaders, tandem axle plow trucks, semi-trucks, loader mounted snow blowers and bulldozers. To ensure the safety of our staff and the public, to comply with Occupational Health and Safety legislation, and to deliver quality programming to our residents, all operators go through extensive training. The equipment training program has three phases, done under the supervision of a Field Trainer. This is done regardless of whether or not there is snow to give operators the experience they need before the snow falls.



In an effort to continually improve our operations, we are committed to:

- ❄ investigate opportunities to attract more interest from our contractor supporting partners to increase access to additional resources during large snow events
- ❄ manage equipment cycle times in a way to ensure sufficient thawing time is provided to each equipment to avoid major equipment breakdowns, especially when the equipment is operating continuously in extreme low temperatures

- ❄ continue working closely with teams from Transit Operations, Solid Waste, Traffic Engineering and Communications
- ❄ enhanced training to supervisors and staff on winter operation best practices

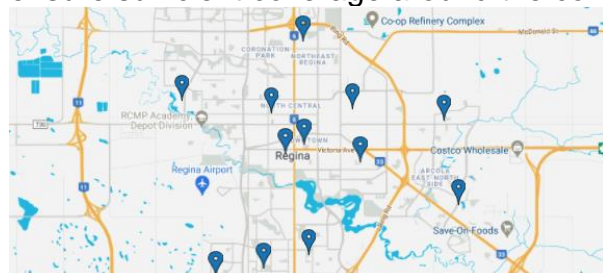
These actions ensure that resources are available and assigned in the most efficient way to ensure the roads that handle the majority of the traffic in the city will be cleared and are drivable in the quickest time possible.

## Sandboxes

The City offers free sand at 13 locations throughout the community for residents to use to help keep their sidewalks and driveways safe. You can find the yellow bins at community centers with a map located on the City website. Residents are encouraged to bring their own container and fill it up with sand to use on their sidewalks and driveways.

Though the program typically does not receive much attention, the freezing rain we had in last few seasons brought it to the forefront. We ensured the sandboxes were closely monitored and filled with sand at any time during the season, especially when there was a freezing rain or freeze-thaw forecast.

Three sandbox locations were added during the 2020-21 season to ensure sufficient coverage around the community.



Based on the number of sandbox related Service Requests received during the 2020/2021 season and observations made at the sandbox locations, there was an adequate supply for residents to get sand. The peak times for sandbox use were observed during increased freeze-thaw days in October, November and March.

Throughout the season, there were no instances or situations were reported when the sandboxes were without enough sand.

13  
Community  
Sandboxes

59 fills

68 tonnes of  
sand

## 2021/ 2022 Service Improvements

Administration will be undertaking the following improvements to the winter maintenance activities:

- ❄ implement updated winter maintenance policy with effect from November 2021 (if approved by Council during Q3, 2021)
- ❄ make operational changes in line with the updated winter maintenance policy
- ❄ implement communication plan for residents and external stakeholders in order to ensure awareness about the changes in the policy

- ❄ ensure City crews and internal stakeholders are fully aware and trained on the changes in the winter maintenance operation. Ensure crews and other staff are aware of the new service levels and timelines
- ❄ continue working on options for improving ice control material storage facility
- ❄ expand the use of liquid salt citywide by adopting pre-wetting technology to allow sand to better adhere to the road surface and to improve the time required for roads to become bare pavement
- ❄ continue and expand the Snow Routes Program in order to be able to clear roads quicker and more efficiently

## Communication with the Community

Residents were advised about general winter maintenance operations and activities using a flexible weather-responsive approach through several paid communication tactics such as radio, television, online advertising and social media. This flexible approach means the campaign started and stopped based upon actual weather and forecasts, rather than a traditional campaign that runs the entire season. This approach allows the City to provide messaging to residents about the road conditions being experienced in the moment.

In addition to the paid advertising campaign, the City's social media channels were also used to share information about various aspects of the winter maintenance program. Between November and March, we shared 20 organic Facebook posts reaching an average of 16.6 thousand each, which is above the City's average. In addition, these posts average 153 engagements each. Topics included snow and ice control, clearing of storm drains and channels, the importance of emergency kits, residential snow plow information and plans for upcoming snow events.

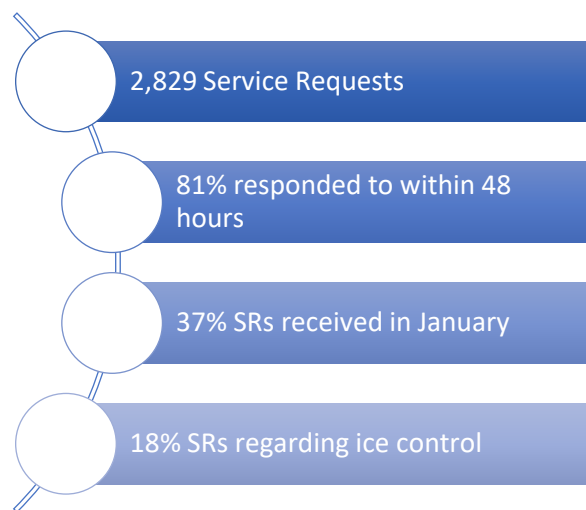
Throughout the winter season, there were more than 76,830 page views to the winter section on Regina.ca. This increase of 406 per cent can be traced directly back to the winter snow event and subsequent residential plow which occurred in January. On Monday, January 25, there were as many page views on that one day, as the previous winter season.

## Service Requests

The Seasonal Roadways Operations Branch received 2,829 Service Requests. This number is a major reduction compared to the peak of 10,315 Service Requests in 2012, 3,109 in 2017/2018 season and less than half of the five-year average. Consistent application of policy guidelines, success in meeting targets, and ongoing communication strategies on our levels of service have contributed to this decline.

The majority of the Service Requests require action - an inspection of the location, scheduling of an activity, providing a response, or calling the customer and discussing the issue. 292 customers requested a call back; we achieved 81 per cent contact within the 48 hour corporate timeline.

The majority of the service requests (1057) were received during the residential plow activity carried out in January 2021. Out of these 548 calls were pertaining to snow plowing activity including schedules of residential plow. Increased freeze thaw conditions during November and December, accompanied with heavy winds reported



501 and 597 service requests respectively.

Out of a total of 2,829 service requests, almost 18 percent 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 maximum number of service requests during the season.

Most concerns were addressed by explaining the operations and what residents can expect during storm response. Blocked driveways

and snow plow activity in alleys were also brought to our attention via Service Regina and addressed in a timely manner.

Generally majority of the Service Requests received during the season focused on snow plowing on roads, ice control and snow ridges.

## Success in Collaboration

We investigate and explore innovative solutions on an ongoing basis to reduce the cost of delivering policy objectives, maximize resources, assist other departments when there is capacity and reduce spending on contracted services, when they are not required. There are also many partnerships and collaborative efforts between our many stakeholder groups, both internal and external, that aid in the delivery of our services. We meet annually with various groups to discuss the challenges that winter brings and how the Policy can help, ways to enhance communication to discuss issues, and confirm working relationships that benefit both parties involved:

Internal Stakeholders	External Stakeholders
<ul style="list-style-type: none"> <li>•Bylaw Enforcement</li> <li>•Parking Services</li> <li>•Parks Maintenance</li> <li>•Financial Services</li> <li>•Financial Operations</li> <li>•Fleet Services</li> <li>•Service Regina</li> <li>•Traffic Engineering</li> <li>•Transit Services</li> <li>•Solid Waste</li> <li>•Development Engineering</li> <li>•Facilities Building Services</li> <li>•Communications</li> <li>•Water Operations</li> <li>•Service Regina</li> <li>•Solid Waste Operations</li> <li>•Landfill Services</li> <li>•Roadway Maintenance Operations</li> </ul>	<ul style="list-style-type: none"> <li>•Bike Regina</li> <li>•Regina Public School Division</li> <li>•Regina Catholic School Division</li> <li>•Regina Downtown Business Improvement District</li> <li>•RM of Sherwood</li> <li>•Regina Bypass</li> <li>•Ministry of Highways</li> </ul>

## Regina School Boards

Winter staff meets annually with representatives from Regina Public School Division and the Regina Catholic School Division, representing the 94 schools in our community. Regular discussions include issues raised from principals and parents, locations where school yards can be used for snow storage, school contact information and the notification process, optimum times to perform maintenance activities around schools to maximize safety and processes to report issues. This partnership has proven to be very successful in reducing the number of issues the schools face, with the most recent example including testimonials from both school boards commending winter staff for the work performed and Policy compliance during the major snow events in January and February.

## Utilization of Winter Maintenance Crews

Staffing numbers are based on the minimum number of employees required to fulfill the guidelines in the Policy throughout an average winter season. Because every winter is different, there are challenges in ensuring operations have consistent and meaningful activities at all times. On comparatively less busy winter season days, our crews provided trucking and hauling services creating a cost avoidance to the winter maintenance budget and an additional costs savings of \$257,040 in performing the work in favour of contracted services. In addition, the crews addressed potholes and sunken utility cuts that become hazardous throughout the season contributing to a cost avoidance of more than \$403,012 to the Winter Maintenance budget.



# Looking Forward

With a commitment to continuous improvement, we are excited to embark on initiatives that will help improve winter maintenance services for future seasons. The following are enhancements currently being worked on or identified to be brought forward in future winter maintenance recommendations.

## Snow Routes Project

Report *PW17-1* and subsequent approval in *CR17-7* recommended the implementation of a Snow Routes Pilot Project on a five kilometre section of roads during 2017-2018 winter season. The pilot analysis demonstrated that crews plowed the snow 20 per cent faster, snow ridges were more consistent, road widths and travel lanes were less impacted and that those who park on the snow route were aware and moved their vehicles when a snow route was declared. The pilot was also welcomed by the community as shown in a survey of 848 residents; more than 70 per cent of respondents support expanding the Snow Route Program.



As per Report *CR18-103*, Council had approved an expansion of the pilot, adding an additional 11 kilometres to the Snow Route Project. The expansion was implemented in the 2019-2020 season with capital costs related to signage installation and communication efforts taking place in the summer of 2019. Since there was less snow in 2019/ 2020 season, no snow routes were declared.

Although we could not get the desired data, we were able to study the issues on the 11 kilometres stretch even with less snow due to parked cars. During 2020/ 2021 winter season snow routes were declared during November, December and January on a total of 16 kilometres road network. Over 80 per cent no-parking compliance rate was achieved on the additional 11 kilometres stretch of roads and over 90 per cent compliance rate achieved on the initial five kilometres road network where snow routes were declared. A total of 269 tickets were issues during the months of November and December 2020.

During 2021-2022 season, the above mentioned additional 11 kilometers of snow route sections will become part of the 16 kilometres of citywide snow routes. Additional road sections with similar challenges as on the existing snow routes would be identified during Q1 and Q2 of 2022 and benchmark data would be collected from these locations during 2022-2023 winter season. Based on the findings, additional road sections will be brought under the snow route expansion pilot study for 2023-2024 winter season. This is part of the staggard and more careful approach towards snow route implementation on the critical road sections.

# Use of Liquid Salt in Ice Control

Historically, we have used dry sand and salt to mitigate slippery conditions. This method is only effective on calm days with little wind, lower traffic volumes and when the temperature is -10 degrees Celsius or warmer. With daily average lows range from -10 to -20 degrees Celsius throughout the winter months, this makes the current system ineffective for much of the season.

Liquid salt trials were conducted over the last few winter seasons. Statistical analysis has shown that the depth of snowpack on the road surface is reduced by 79 per cent and the pavement surface condition improved by 33 per cent when pre-wetting the dry sand with liquid salt. Good driving conditions are achieved quicker and the amount of sand and salt required is reduced. Magnesium chloride, used during the trials, is far less corrosive than dry salt (sodium chloride) currently used in our Ice Control Program, and thus reducing the negative impact on our infrastructure and to the environment.

Dedicated precision sanding equipment were used to conduct liquid salt trials on some larger street sections in the City during the season. The trial activity included providing hands on training to the equipment operators on the new sanding equipment as well as effective utilization of prewetting technology using liquid salts. The trial results were fairly consistent with the trial outcomes from the previous season when trials were conducted on smaller road sections.

Because the trials were successful, we were able to expand the program to approximately 90 per cent of the arterials and collector road network during 2020/ 2021 season, with the intentions of possibly expanding it city wide in a staged manner by 2021/2022 should the positive benefits continue. While this change requires a significant amount of training, long-term benefits will be realized through a phased and methodical approach to implementation. We will continue to educate the public and answer any questions they may have as the program expands.

# Winter Maintenance Policy Update

A report will be presented to City Council in Q3 of 2021 to include Council approved enhancements and provide a simplified policy document. The updated policy will be effective from November 2021. A communication plan would include informing the residents of any changes in the policy before the new policy is implemented in November 2021. During 2021 summer and fall, Administration will make suitable changes in the operation including updating standard operating procedures, staff training, collaborating with other branches in the City and educating external stakeholders on the new policy updates. Any tweaks in the operation would be made as required during the first season on policy implementation.



# ***The Clean Property Bylaw Provisions - Sidewalk Snow Clearing***

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.

Administration will provide options to amend the Bylaw by introducing provisions related to sidewalk snow and ice clearing which require all property owners in the city to clear sidewalks adjacent to their property. If approved, the amendments to the Bylaw may come in effect on January 1, 2022 following a focused awareness program to inform all residents and businesses.

## **Engagement with Accessibility Advisory Committee**

Members of the Accessibility Advisory Committee (AAC) were engaged on June 29, 2021 to get their feedback on the sidewalk snow clearing options considered under the Clean Property Bylaw (Bylaw) and how City might strengthen the current Snow Angel Program.

Questions presented to the AAC for their feedback:

1. What do you think is an appropriate timeline for property owners to clear their sidewalk?
2. What do you think are reasonable end conditions for sidewalk snow clearing?
3. What criteria should be considered for someone to be eligible for programs that support sidewalk snow clearing such as the Snow Angels program?
4. What barriers do you anticipate Regina residents will encounter with clearing their sidewalks?
5. Are there any suggestions for additional supports the City can offer in conjunction with Snow Angels?
6. Do you know of any other community led initiatives that assist people with maintenance tasks such as snow removal?

Summary of Feedback:

Feedback received during the meeting included the need to strengthen the Sandbox Program, as this would benefit the Snow Angels Program volunteers in addition to other residents while managing icy conditions on sidewalks.

In addition, members of the AAC supported creating a Bylaw including mandatory sidewalk snow clearing by property owners and suggested enforcing a fine from those who do not clear the snow from their sidewalks as per the provisions of the Bylaw.

This would bring consistency in sidewalk snow clearing and would help people with accessibility challenges.

# Snow Fence/Snow Ridge Pilot Study

As a result of report *CR19-68*, a pilot study was conducted during 2020-2021 season in order to test the benefits and/or drawbacks of snow fences and snow ridges.

As part of the trial, a snow fence was installed on a road section on Courtney Street around the open area before the season. An equal stretch of the adjoining open area was identified to create snow ridges for comparison. The season saw significant windy days with blowing snow and wind gusts between 76 kilometres per hour to 127 kilometres per hour reported between November and March.

Winter maintenance crews took several observations as part of the pilot study and concluded that a snow fence program was more expensive and time consuming as compared to the Snow Ridge program. The snow ridges provided more advantages over snow fences, including better snow management, less cost, reduced dependence on vendors for installation, de-installation and maintenance of fences, and reduced chances of damaging the fields.

For most part of the season, there was no significant difference in the road conditions along the snow ridges when compared with the conditions along the snow fenced sections. However, towards the end of the season, when the snow fence was almost buried under the snow and failed to be an effective barrier, the road sections along the snow fence continued to get drifting snow as the strong winds carried the snow over the snow fence. Conditions on road sections along snow ridges remained fairly consistent and better than the sections along snow fence. With repeated damage of the snow fence sections during the season, winds were able to carry drifting snow through the temporarily created gaps.

After several years of trials and careful analysis of pros and cons of installing snow fences, Administration had adopted an innovative solution of creating snow ridges in open areas as opposed to erecting snow fences. Administration recommends continuing with the existing practice of mitigating blowing snow conditions on roads along open areas by creating snow ridges.

## Pilot Study

### Snow Fence & Snow Ridge Placed Side By Side Along an Outer City Road



Snow Fence



Snow Ridge

## Pilot Study- Snow Fence



- Approx. 3,000 ft of plastic Snow Fence
- Fence was placed approx. 140 ft away from the curb of the road
- Fence height-4 ft

## Snow Ridge:

- Dedicated crew maintained the Snow Ridges after each major storm
- Ridge height was raised as required
- Multiple ridges were created for better effect



## Findings of Pilot Study:

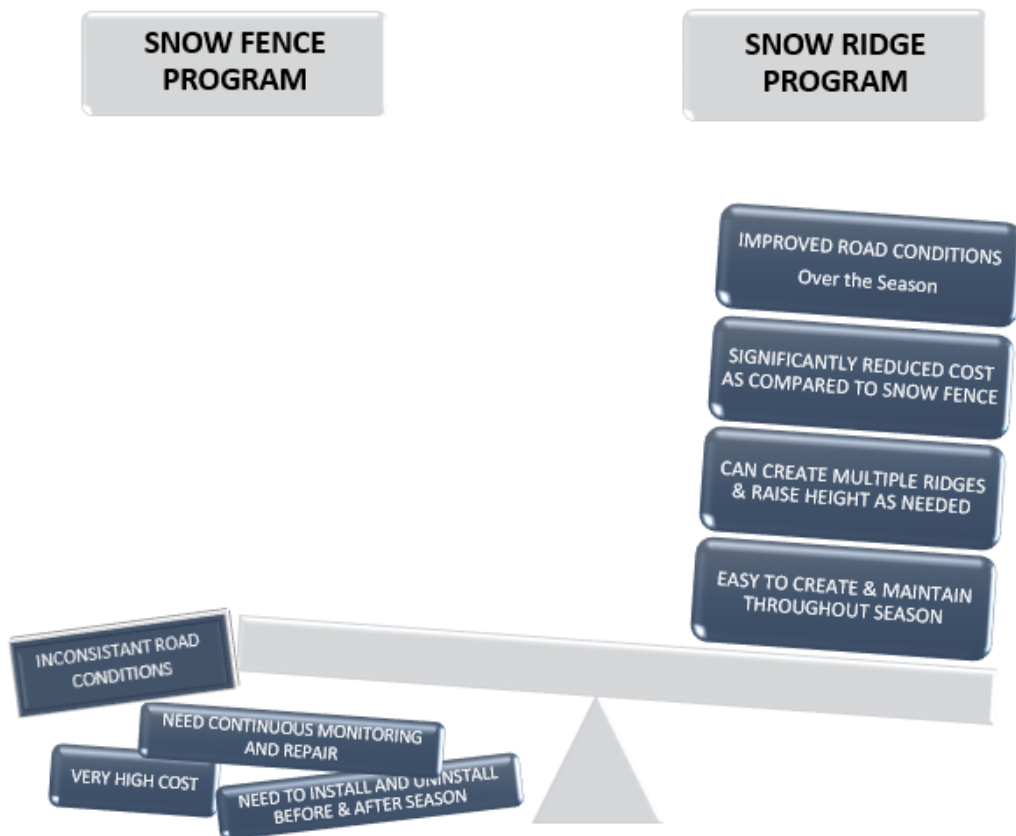


Effectiveness was Reduced once the Snow Fence got fully covered under snow



Snow Ridges were continuously maintained and raised as required

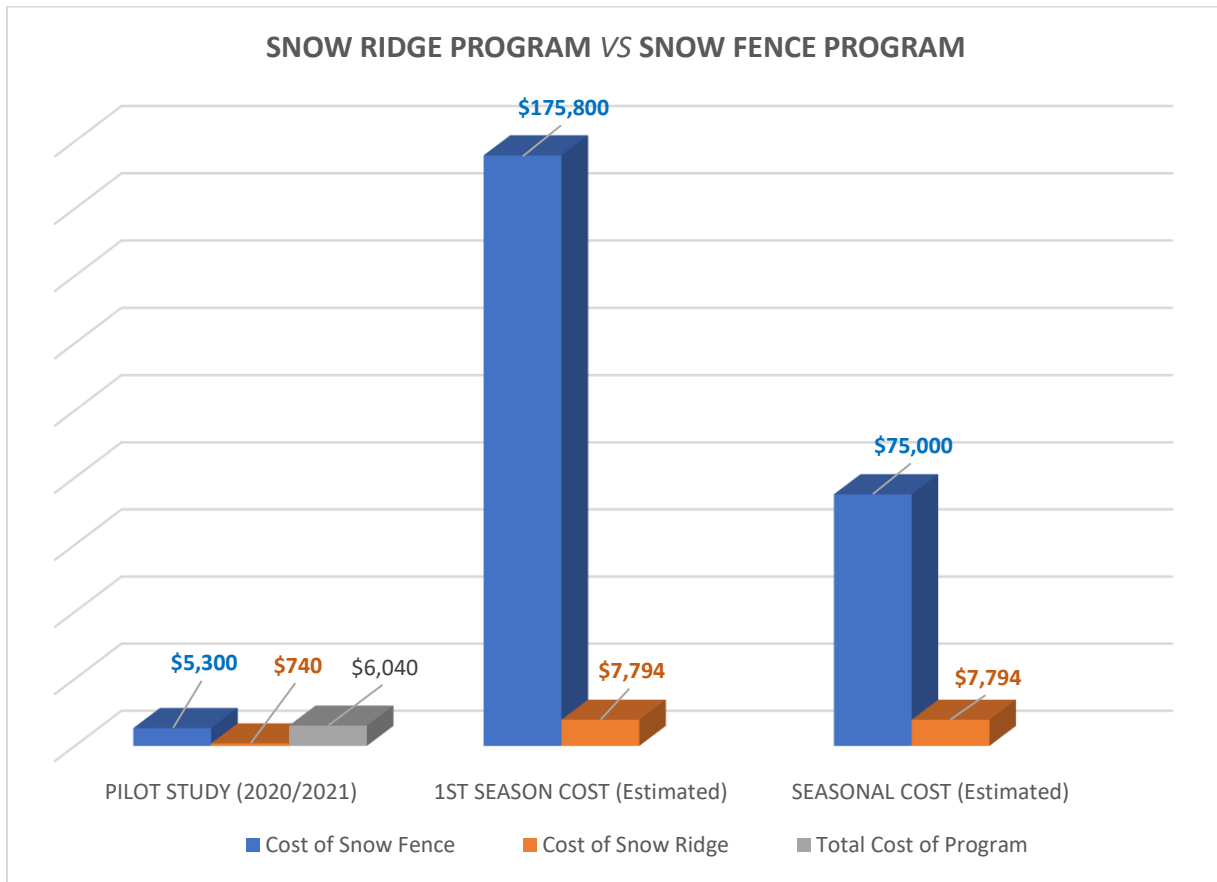
Following picture depicts the key benefits of Snow Ridges over Snow Fence as observed during the Pilot Study.



## Cost Analysis of Pilot Study (Snow Fence vs Snow Ridge):

Table A provides a comparison of the costs associated with the Pilot Study as well as the comparative costs for the typical winter season.

Table A: Snow Fence Program vs Snow Ridge Program COSTS



\*1<sup>st</sup> season costs for Snow Fence include \$100,000 for one time purchase of materials and \$75,000 in installation and removal costs

## Snow Storage Site Fee Review

Snow storage site fee implementation addressed the business need including implementation of a full cost recovery fee structure for commercial contractors in line with City's Official Community Plan (OCP).

Since the snow storage site fee implementation completed five years, a review was conducted to ensure the desired objective of recovering the cost of managing the snow site on account of the snow brought by private contractors from businesses and non-City establishments was successfully met.

As mentioned in the report *CR15-86*, winter maintenance team have been collecting and evaluating data on usage patterns annually and comparing with the operating costs.

However, the five-year analysis of the user fee considering the five-year operating average data was much more useful especially considering the changing nature of the winters over this period. Based on the analysis, the current rates of snow site usage require no amendments. The road conditions on the site will require pre-season repairs. All possible steps like soil and spring run-off condition monitoring, snow pile location rotation each will be continued to mitigate environmental deterioration of the site on account of snow brought from various sources.

Typically, 60 per cent of the cost of snow storage site operation is due to the snow brought by the private haulers. Remaining 40 per cent cost is on account of snow brought by City from roads and other City facilities. The objective of the Snow Storage Site User Fee was to recover approximately 60 per cent of the total cost of managing the snow storage site so that there is no additional tax burden on the City of Regina residents.

A budget of \$362,000 was allocated in 2016 to upgrade current snow site facility including building road network, proper lighting, site office area, drainage improvement, and implementation of Radio Frequency Identification Device (RFID) permitting system. The project was successfully completed on time and was under budget.

During the five-year period starting November 2016 till March 2021, snow storage site recorded over 72,000 billable transactions and recovered approximately 64 percent of the cost of managing the snow storage operation.

Overall, the satisfaction level with the snow storage site operation has been quite high. There were only a few service requests received during the last five years and these were attended promptly.

The Snow Storage Site Fee charging system adopted by City has been quite successful in terms of meeting the OCP guidelines as well as ensuring the site is much safer as compared to five years earlier due to proper lighting, roads, 24 hours a day at seven days a week site surveillance, well managed traffic flow, dedicated areas for larger and smaller trucks etc.

Administration will continue to perform an analysis on the fee structure every five years.

## Winter Emergency Response Plan

A winter emergency response plan is prepared in collaboration with several internal and external stakeholders like Emergency Preparedness & Business Continuity branch, Water, Waste & Environment, Fleet Maintenance & Fleet Assets, Parks Maintenance & Open Spaces, Fire & Protective Services, Facilities, Regina Police Services, Traffic Engineering and Customer Experience department. The plan aims at providing guidelines



on handling extreme winter season situations like very heavy snowfalls and extremely icy and windy conditions that severely impact lives.

### **Key components of Winter Emergency Response Program:**

#### **1. Planning:**

##### **a. Prevention and Mitigation**

This includes actions to prevent emergencies from occurring or mitigating the impact if they do occur. This includes monitoring weather forecasts, calling in required manpower and contractor support for round the clock coverage, advising the public and deploying equipment like graders and plow trucks on major roads as soon as the snow started.

##### **b. Preparedness**

This is achieved by having an emergency plan, an updated winter maintenance policy, Customer Level of Service and Technical Level of Service documents to provide guidelines on roles and responsibilities, priority roads, maps and plow lists. This is also achieved by having a training plan, shift coverage schedules, safety matrix, equipment availability including City and contracted equipment, a functional snow storage facility.

##### **c. Response**

There is a recognition that following the typical Policy guidelines for normal snow events may not be applicable to responding to large snow emergency events.

##### **d. Recovery**

Recovery deals with both short- and long-term planning to return to a pre-emergency state.

#### **2. Training-** Having trained equipment operators

#### **3. Communication-** Issuing timely clear notifications to residents and businesses during emergency response as well as continued general awareness and education on safe winter driving and vehicle parking practices throughout the season.

#### **4. Partnerships-** Establish suitable partnerships with stakeholders who could support winter maintenance operations during severe conditions. This could involve sharing equipment, manpower, communication tools and other resources.

The Emergency Response plan includes details of the winter maintenance equipment utilization plan for different priority areas like Hospital routes, Express ways, transit routes, schools, residential areas, gravel roads, sidewalks, alleys, transit stops etc. The plan lists all available equipment and other resources available within the City as well as the contact information and process to seek the support from various sources as needed. The plan also lists how winter maintenance crews would be able to support other major City services like solid waste collection, transit services, water operations (water main breaks) etc. during a winter emergency.



## Implementation of Updated Winter Maintenance Policy

<b>Date</b>	September 22, 2021
<b>To</b>	Operations and Community Services Committee
<b>From</b>	Citizen Services
<b>Service Area</b>	Roadways & Transportation
<b>Item No.</b>	OCS21-24

### RECOMMENDATION

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The Operations and Community Services Committee recommends that City Council:

1. Approve the updated Winter Maintenance Policy (Appendix B); and
2. Direct Administration to implement the updated Policy to be in effect as of November 1, 2021.

### ISSUE

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In follow up to the Winter Maintenance Policy Update, report *CR20-85*, Administration is bringing the updated Winter Maintenance Policy (Policy) level of service document to the City Council for approval.

### IMPACTS

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#### **Accessibility Impact:**

One of the enhancements to the Policy will include enhanced snow clearing on sidewalks adjacent to transit stops, making them more accessible for all users. Administration is presenting a separate report with recommendations to amend *The Clean Property Bylaw* to include provisions relating to mandatory sidewalk snow and ice clearing city-wide. The amendments in the *Bylaw* will ensure consistent sidewalk cleaning and will improve sidewalk accessibility throughout the city.



**Financial Impact:**

City Council has approved additional annual expenditures on account of approved enhancements to the Policy, Report *CR20-85 – Winter Maintenance Policy Update*. Further details can be found in Appendix A.

If the report on Sidewalk Snow Clearing related amendments to *The Clean Property Bylaw* is approved, then Administration estimates an additional bylaw enforcement related annual cost of \$512,000 with effect from January 2022, to deliver both complaint based and proactive enforcement related to sidewalk snow and ice clearing citywide.

**Policy/ Strategy Impact:**

The recommendations support the Transportation Master Plan (TMP) and the *Design Regina: The Official Community Plan* (OCP), specifically:

*Section D3, Transportation:*

- *Goal 1 – Sustainable Transportation Choices; Offer a range of year-round sustainable transportation choices for all, including a complete street framework.*
- *Goal 2 – Public Transit; Elevate the role of public transit.*
- *Goal 3 – Integrated Transportation and Land Use Planning; Integrate transportation and land-use planning in order to better facilitate walking, cycling, and transit trips.*
- *Goal 4 – Road network Capacity; Optimize road network capacity.*
- *Goal 5 – Active Transportation; Promote active transportation for healthier communities*

The recommendations support City Council's resolution to continue providing winter maintenance that effectively supports the health, attractiveness, and economic viability of our community.

**Environmental Impacts:**

The sidewalk snow clearing related enhancements in the Policy will ensure more consistent sidewalk clearing during winter encouraging walk-friendly and mobility-friendly neighbourhoods. Residents may be motivated to walk or utilize public transit more due to improved sidewalk accessibility thereby reducing the dependence on cars and trucks for mobility around the community.

**Risk/Legal Impacts:**

The updated Policy provides details on the expected levels of service as well as authority and roles and responsibilities of City Council, Administration and residents.

**OTHER OPTIONS**

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There are no other options related to this report.

## COMMUNICATIONS

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Administration will develop a comprehensive communications strategy to create awareness about the updated Policy as well as related changes in *The Clean Property Bylaw*, relating to sidewalk snow clearing, if approved. This will include communication with community partners such as school boards, Regina Downtown Business Improvement District (RDBID), Business Owners and Managers Association (BOMA), community associations among others.

City Council has approved a \$35,000 annual budget for three years for communications as per Report *CR20-85* starting 2022. The cost of communication will be funded by the winter maintenance annual operations budget.

## DISCUSSION

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Administration is recommending that a simplified and updated Winter Maintenance Policy Level of Service document be considered for implementation with the effective date of November 1, 2021. The Policy document can be found in Appendix B.

The changes in the updated Policy are based on the following approved level of service enhancements, as per *CR20-85* report, to the existing Policy.

1. Improved communication plan and easy to understand Policy document
2. Road Classification and Priority
3. School Unloading Zones
4. Sidewalk Adjacent to Transit Stops
5. Transit Routes
6. Residential Roads
7. Bike Lanes
8. Intersection Ice Control
9. Snow Removal on Category 1,2,3 Roads
10. Sidewalk Snow Clearing

The approved enhancements have been included as key objectives of the updated Policy document while ensuring the previous Policy objectives are not diminished or ignored. In addition to the approved enhancements, the updated Policy document includes all pertinent information relating to winter maintenance programs as contained in the existing Policy document.

The Policy presents an overview of the key Policy objectives as well as the level of service measures, goals, monitoring tools, documentation and reporting associated with each of these objectives. In addition, the Policy document includes information about the authority, alignment with corporate direction including the *OCP* and *TMP*, key guiding documents, roles and responsibilities and important definitions of terms used in the document.

The updated Policy is a simplified document that is easier to understand for residents. Instead of focussing on the operational details as mentioned in the existing Policy, the updated document outlines the expected level of service that the customer sees or experiences from the service output relating to winter maintenance activities on the public right of way assets involving streets, sidewalks, alleys and easements. Administration will ensure that residents are still able to easily access additional details about the winter maintenance programs and operations as required, by visiting Regina.ca or calling the City of Regina at 306-777-7000.

In addition, necessary changes will be made in the standard operating procedures of winter maintenance programs to ensure the Policy goals are achieved effectively and efficiently. While the updated Policy would be in effect from November 1, 2021, some internal winter maintenance operational processes may require minor or major iterations through the 2021-2022 winter season.

Other Canadian jurisdictions like Calgary, Edmonton and Saskatoon follow similar simplified snow and ice maintenance policies.

## **DECISION HISTORY**

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At the September 30, 2020, Council meeting, item *CR20-85 - Winter Maintenance Policy Update* was considered by City Council during the 2021 Budget Process. Administration committed to bring a Policy Level of Service document back to City Council in Q3 of 2021 for final approval.

Respectfully Submitted,

A blue ink signature of Chris Warren, consisting of a stylized 'C' followed by a series of loops and a horizontal line.

Chris Warren, Director, Roadways & Transportation

Respectfully Submitted,

A black ink signature of Kim Ohra, featuring a large, bold 'K' followed by a series of loops and a horizontal line.

Kim Ohra, Executive Director, Citizen Services

9/9/2021

Prepared by: {Neeraj Saroj, Senior Engineer, Roadways & Transportation}

## **ATTACHMENTS**

Appendix A -CR20-85 Winter Maintenance Policy Update Report

Appendix B - Updated Winter Maintenance Policy (Level of Service) Document

# Appendix A



## Winter Maintenance Policy Update

<b>Date</b>	September 30, 2020
<b>To</b>	Mayor Masters and City Councillors
<b>From</b>	Public Works & Infrastructure Committee
<b>Service Area</b>	Citizen Services
<b>Item #</b>	CR20-85

### RECOMMENDATION

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The Public Works and Infrastructure Committee recommends that City Council:

1. Consider the Winter Maintenance Policy Update during the 2021 Budget process; and
2. Direct Administration to bring a report with options to amend *The Clean Property Bylaw*, with respect to sidewalk clearing, in Q2 of 2021.

### HISTORY

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At the September 23, 2020 meeting of the Public Works and Infrastructure Committee, the Committee considered the attached report PWI20-8 from the Citizen Services Division.

The Committee adopted a resolution to concur in the recommendation contained in the report after changing the date for Administration to bring a report with options to amend The Clean Property Bylaw, with respect to sidewalk clearing, from Q3 of 2021 to Q2 of 2021.

Recommendation #2 in report PWI20-8 (attached) does not need City Council approval.

Respectfully submitted,  
PUBLIC WORKS AND INFRASTRUCTURE COMMITTEE

  
Elaine Gohike, Secretary 9/25/2020

**ATTACHMENTS**

PWI20-8 - Winter Maintenance Policy Update.pdf  
Appendix A - Environmental Conditions and Budgetary Impacts  
Appendix B - Current Winter Maintenance Policy  
Appendix C - Policy Review and Feedback  
Appendix D - Road Network Reclassification  
Appendix E - School Unloading Zones  
Appendix F - Transit Stop Accessibility  
Appendix G - Transit Route General Conditions  
Appendix H - Residential Road General Conditions  
Appendix I - Bike Lane General Conditions  
Appendix J - Intersection Ice Control  
Appendix K - Snow Removal on Category 1-3 Roads

## Winter Maintenance Policy Update

<b>Date</b>	September 23, 2020
<b>To</b>	Public Works and Infrastructure Committee
<b>From</b>	Citizen Services
<b>Service Area</b>	Roadways & Transportation
<b>Item No.</b>	PWI20-8

### RECOMMENDATION

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The Public Works and Infrastructure Committee recommends that City Council:

1. Consider the Winter Maintenance Policy Update during the 2021 Budget process.
2. Approve this recommendation at its September 30, 2020 meeting.

### ISSUE

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The purpose of this report is to review the City of Regina's (City) Winter Maintenance Policy (Policy) for snow and ice management services and to provide recommendations to update the Policy in alignment with City's *Transportation Master Plan* (TMP) and the *Official Community Plan* (OCP) and community needs.

### IMPACTS

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#### **Accessibility Impact:**

One of the enhancements to the Policy could include enhanced snow clearing on sidewalks adjacent to transit stops, making them more accessible for all users.

#### **Financial Impact:**

Administration undertook an evaluation and analysis of the environmental conditions over the last ten years and it demonstrates that Regina is experiencing a reduced amount of snow accumulation and number of snow days in recent years, resulting in a cost savings of

\$1.2 million annually. Further details can be found in appendix A.

Any approved enhancements to the Policy would result in additional expenditures on an annual basis.

The Winter Road Maintenance Reserve has a current balance of \$1.8 million and is sufficient to cover expenditures during an above average winter season if conditions exceed historic averages.

**Policy/ Strategy Impact:**

The recommendations support the Transportation Master Plan (TMP) and the *Design Regina: The Official Community Plan* (OCP), specifically:

*Section D3, Transportation:*

- *Goal 1 – Sustainable Transportation Choices; Offer a range of year-round sustainable transportation choices for all, including a complete street framework.*
- *Goal 2 – Public Transit; Elevate the role of public transit.*
- *Goal 3 – Integrated Transportation and Land Use Planning; Integrate transportation and land-use planning in order to better facilitate walking, cycling, and transit trips.*
- *Goal 4 – Road network Capacity; Optimize road network capacity.*
- *Goal 5 – Active Transportation; Promote active transportation for healthier communities*

The recommendations also support Council's resolution to continue providing winter maintenance that effectively supports the health, attractiveness, and economic viability of our community.

**Environmental Impacts:**

Any recommended Policy updates would enhance general ice control practices while still adhering to Environment Canada and Transportation Association of Canada (TAC) guidelines on responsible road salt usage. A better coordinated Ice Control Program will optimize the use of sand and salt while providing improved driving conditions.

**Risk/Legal Impacts:**

Administration will ensure the updated Policy document continues to serve as a legal document defining levels of service in the community, and roles and responsibilities of the Administration, City Council and residents.

**OTHER OPTIONS**

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Administration is recommending that the winter maintenance policy update and any recommended enhancements or subsequent possible reductions to the budget be considered through the 2021 Budget process. An alternative to that option is:

### **Option 2: Status Quo Policy**

The resident survey showed that general satisfaction is high, except for the residential roads level of service. Administration could continue to operate the winter maintenance program on a status quo basis.

## **COMMUNICATIONS**

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Administration will develop a comprehensive communications strategy once budget approval has been received from City Council on any of the recommended enhancements. This will be used prior to and during the implementation of the updated Policy in 2021. The estimated cost is expected to be approximately \$35,000 annually and is included in the recommended Policy enhancements.

Administration will collaborate with community partners such as Regina Police Service, Canadian Automobile Associate (CAA), school boards, Community Associations, Regina Accessibility Committee, Regina Downtown Business Improvement District (RDBID), Saskatchewan Health Authority (SHA), and SGI in order to educate key stakeholders on the Policy enhancements.

## **DISCUSSION**

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The Winter Maintenance Policy (Appendix B) was approved by City Council in 2007 with the purpose of providing winter maintenance activities that support the health, attractiveness, and economic viability of our community. Since then, the community has experienced growth, environmental conditions have changed, and the wants and needs of residents has evolved. The City also adopted long-term strategies such as the *OCP* and *TMP* to achieve the City's vision and help guide our community into the future.

As part of the Policy review, Administration conducted a resident survey, engaged with internal and external stakeholders, evaluated previous feedback and Service Request data, researched policies in other cities, studied winter maintenance cost comparison for various cities under the MBN Canada Performance Measurement Report and evaluated gaps in the current Policy. More details can be shown in Appendix C. Although feedback from the survey showed that general satisfaction is high, the overall review identified several themes for consideration, some of which require City Council approval and others that can be implemented through operational changes.

Several options were reviewed and considered regarding possible enhancements to winter maintenance levels of service. Options were chosen based on survey and stakeholder feedback, financial viability and operational capacity. Administration is proposing the following Policy enhancements and would undertake to bring a Policy Level of Service document back to City Council in Q3 2021 for final approval. It should also be noted that activities contained in the current Policy and not identified in this enhancement report would be included in the new Policy and continue to be carried out as status quo.



#### Policy Enhancement 1 – Communication Plan

Implement an enhanced communication plan annually.

In previous years, the Roadways Seasonal Operations branch worked with the Citizen Services department to inform residents of the activities and expectations during winter months, opportunities for engagement with stakeholders, and level of service outlined in the Policy. More recently, the Administration has used specific tools and tactics to notify residents when there are parking bans in place for efficient snow plowing activities.

Feedback from the survey suggests that general awareness about the Policy is lacking and not sufficient, and that many of the Service Requests could be avoided if the City improved communication efforts and simplified the Policy document. This is like the findings in researching other municipalities; policy documents are simple to understand, and outline expected level of service that residents can expect. Administration will undertake to create a communication plan for residents leading into every winter season as well as throughout.

The cost for this enhancement is \$35,000.

#### Policy Enhancement 2 – Road Classification and Priority

Adopt road classification system as shown in Table 1.

Table 1-Proposed Road Classification

Proposed/ New Road-Classification	Length Km	Snowfall trigger
Category 1	157	5 cm
Category 2	204	5 cm
Category 3	156	5 cm
Category 4	47	5 cm
Category 5	532	15 cm
Total	1096 Km	

The current Policy classifies roads in six categories based on road classification, traffic volumes, and usage for the purposes of prioritizing systematic plowing operations and service levels.

Administration is recommending that the road prioritization system be updated and simplified to enhance residents' understanding of the level of service for the road network. This will also ensure that snow clearing efforts are in alignment with community priorities, such as the OCP. The classification and priority system will consist of five categories as shown in the table above.

The costs and implications of the enhanced classification system are reflected in the upgrades to the categories of school unloading zones, transit routes and residential roads with traffic volumes greater than 1500 vehicles per day (VPD). Additional details can be found in Appendix D.

#### Policy Enhancement 3 – School Unloading Zones

Upgrade the road plowing classification of all school unloading zones to Category 3 or higher and remove the snow ridges on both sides of the road adjacent to a school after a systematic plowing event.

Currently the Policy for snow clearing in front of schools specifies that snow ridges are removed when they exceed 30 centimetres in the School Bus Unloading Zone and exceed 75 centimetres on the remainder of the road adjacent to the school. However, there are no provisions for snow removal on the side of the road opposite of the school and this creates overall pick-up and drop-off challenges for parents and students.

Feedback from the survey and Service Requests suggests that snow ridges should be removed from both sides of the road after a snowfall and systematic plowing operations. This will allow for adequate parking and pick-up and drop-off locations, as well as enhance road conditions and safety for those accessing the schools.

The cost for this enhancement is \$100,000 annually and details can be found in Appendix E.

#### Policy Enhancement 4 – Sidewalks Adjacent to Transit Stops

Plow all sidewalks adjacent to transit stops.

Currently the Policy for snow plowing on sidewalks includes maintaining sidewalks adjacent to City-owned parks and facilities, bridge decks and subways, and locations that do not have a property owner fronting the sidewalk. However, this only represents a small percentage of sidewalks in the community, with most of the responsibility assigned to the property owners adjacent to the sidewalk. There is a requirement for commercial properties to clear their sidewalk as outlined in *The Clean Property Bylaw*, however residential properties are not included, and the City encourages residents to be a good neighbor and clear their sidewalks. Unfortunately, this does not always happen, and it creates accessibility challenges for users of the transit system when the pick-up and drop-off locations are not consistently cleared by property owners.

Feedback from the survey and Service Requests suggests that the City improve snow clearing efforts around transit stops. This is also in alignment with *OCP* goals of offering a range of year-round sustainable transportation choices for all, as well promoting active transportation.

It should be noted that a negative impact is that sidewalks not adjacent to the transit stops will not be cleared and there may be a negative perception that the City is clearing some

residents' sidewalks and not all. In addition, this does not address accessibility on the remaining sidewalk network.

If City Council preferred to adopt a Bylaw requiring all property owners to keep the sidewalks adjacent to their property free and clear of snow, this policy enhancement would not be required (see Bylaw Amendment – Sidewalk Clearing option below).

The cost for this enhancement is \$339,000 annually and details can be found in Appendix F.

#### Policy Enhancement 5 – Transit Routes

Upgrade the road plowing classification of all transit routes to Category 2 or higher.

Currently the Policy states that all transit routes are to be classified as a Category 3 priority or better. This means that during systematic plowing operations, many of the transit routes in the community can take up to 48 hours to complete after a snow event.

Feedback from Service Requests and internal stakeholders such as Regina Transit and Winter Maintenance staff, suggests that transit routes should be classified as a higher priority and cleared faster as this may be the primary mode of transportation for many residents after a snowfall. This may be especially true during a major snow event when major roads are cleared relatively quickly but residential roads take more time. Ensuring that Regina Transit has clear and safe roads to carry out consistent service level commitments and schedules is integral in elevating the role of public transit and optimizing the road network capacity.

There are no costs associated with this level of service enhancement and Administration will utilize existing tools and resources to implement this enhancement for the 2021/2022 season. Additional details can be found in Appendix G.

#### Policy Enhancement 6 – Residential Roads

Upgrade the road plowing classification of residential roads greater than 1500 vehicles per day (VPD) to Category 3 and plow all residential roads after every snow event greater than 15 centimetres.

Currently the Policy specifies that residential roads are plowed after a snow event greater than 25 centimetres, or when rutting exceeds ten centimetres. The residential road network represents approximately 541 kilometres of the entire road network and are typically plowed once or twice per season.

Feedback from the survey and Service Requests suggest that general satisfaction is low regarding snow clearing on residential roads. Administration is recommending that residential roads that are acting more as collector roads serving over 1500 VPD be classified as a higher priority and included in systematic plowing operations. In addition,

Administration recommends all residential roads are systematically plowed after a snow event greater than 15 centimetres.

Based on recent data, it is expected that this will result in one additional plow every season. It should be noted that the City will continue utilizing the Ice Shaving Program to maintain ruts and have discretion to plow all residential roads if there are unusual or extenuating circumstances during the winter.

The cost for this enhancement is \$304,000 annually and details can be found in Appendix H.

#### Policy Enhancement 7 – Bike Lanes

Upgrade the road plowing classification of bike lanes to Category 2 or higher.

The current Policy does not include any reference to bike lanes. However, most the City's existing bike lanes are located on Category 1 or 2 roads, therefore they are plowed within 36 hours of a snowfall event. There are some bike lanes located on Category 3 roads, such as Lorne Street and Smith Street, and they would be included in the upgrade.

In an effort to offer a range of year-round transportation choices and promote active transportation, the enhanced level of service will include plowing and ice control activities after a snowfall, as well as routine inspections to ensure ice, snow, and slush is cleared from the bike lane.

As most of the bike lanes are already located on higher priority roads, there are no costs associated with this enhancement. Routine inspections will be included in the current inspection program. Additional details can be found in Appendix I.

#### Policy Enhancement 8 –Intersection Ice Control

Implement ice control routing and enhance coordination between snow plowing and ice control activities.

The current Policy for ice control outlines minimum cycling times based on category during snow events and when slippery conditions are present. Sand and salt is placed on the road in advance of intersections, crosswalks, ramps and merge lanes, curves and adjacent to school properties. After a snowfall, ice control material is placed on the road up to 24 hours after systematic plowing operations have been completed.

Feedback from the survey showed general satisfaction of ice control operations, however comments suggested there could be better coordination between snow plowing and ice control activities. Implementing routes based on priority and classification for both ice control and plowing operations will bring greater consistency to these activities and reduce the time delay between the coordinated activities.

There are no costs associated with this level of service enhancement and Administration will utilize existing tools and resources to implement this enhancement for the 2021/2022 season. Additional details can be found in Appendix J.

Policy Enhancement 9 – Snow Removal on Category 1, 2, 3 Roads

Remove snow on all Category 1, 2 and 3 roads when sightlines and lane widths are impacted.

The current Policy specifies that snow removal on Category 1 and 2 roads and Category 3 transit routes will be completed when sightlines and lane widths are impacted.

Feedback from the survey indicates that the snow removal activities need to be further enhanced on major roads after each systematic plow. Removing snow from Category 1, 2, 3 roads will ensure that snow removal takes place on all arterial and collector roads that are regularly plowed, providing safer winter driving conditions by improving road capacity and visibility around intersections.

There are no additional costs associated with this level of service enhancement as Administration has gained efficiencies in this activity and typically performed much of this activity on Category 3 roads out of necessity. Additional details can be found in Appendix K.

Bylaw Amendment – Sidewalk Clearing

Implement a sidewalk snow clearing Bylaw for all property owners.

In conjunction with the City's sidewalk clearing activities outlined in the Policy, the City requires owners of commercial properties, parking lots and apartment buildings to clear sidewalks within 24-48 hours of a snowfall as per *The Clean Property Bylaw*. These programs combined represent eighteen per cent of sidewalks in our community.

Feedback from the survey and Service Requests suggest that residents want to see increased and consistent sidewalk clearing efforts in our community and favour an approach that includes enforcement options.

This would assist in achieving *OCP* goals to offer a range of year-round transportation choices and promote active transportation and would ultimately benefit Regina residents by ensuring all sidewalks are consistently cleared of snow and maintained throughout the winter season.

If this option was chosen, Administration would bring a report in Q3 2021 with options to amend *The Clean Property Bylaw*.

## DECISION HISTORY

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At the September 8, 2018 Public Works and Infrastructure Committee meeting, the Winter Maintenance Summary Report *PWI18-16* was considered, and Administration committed to review to update and align the policy with community priorities and operational requirements.

The recommendations in this report require City Council Approval.

Respectfully Submitted,

A blue ink signature, appearing to read "CW", written over a horizontal line.

Chris Warren, Director, Roadways & Transportation

9/4/2020

Respectfully Submitted,

A black ink signature, appearing to read "Kim Conra", written over a horizontal line.

Kim Conra, Executive Director, Citizen Services

9/18/2020

Prepared by: Neeraj Saroj, Senior Engineer, Roadways & Transportation

## ATTACHMENTS

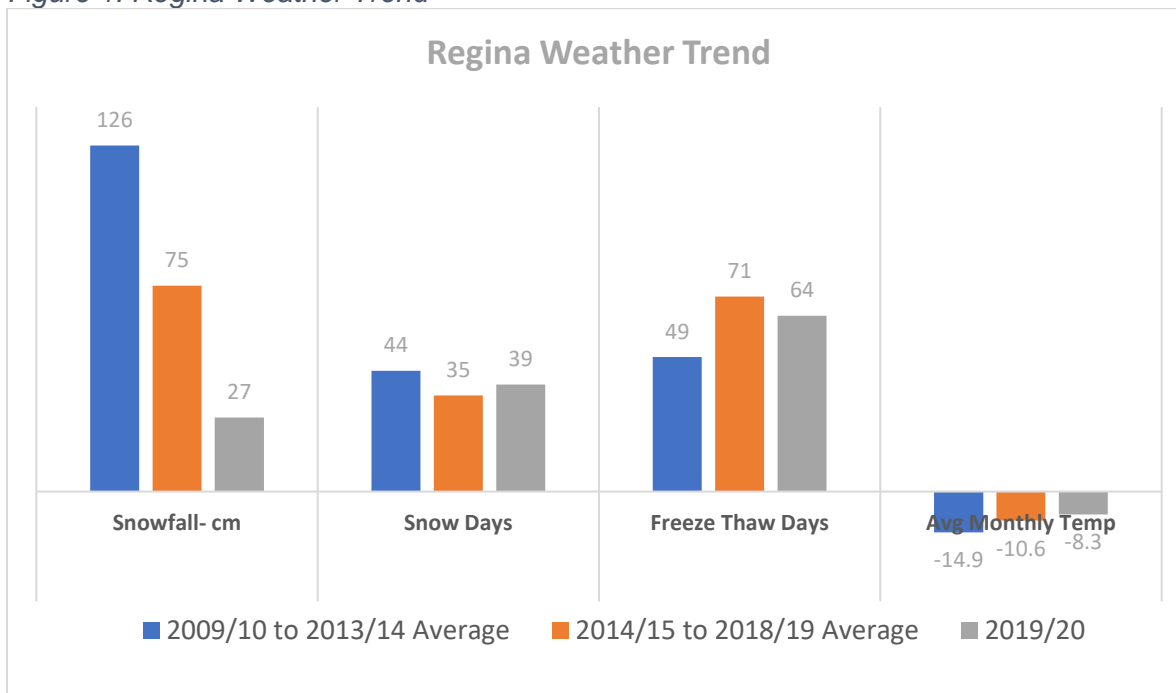
- Appendix A - Environmental Conditions and Budgetary Impacts
- Appendix B - Current Winter Maintenance Policy
- Appendix C - Policy Review and Feedback
- Appendix D - Road Network Reclassification
- Appendix E - School Unloading Zones
- Appendix F - Transit Stop Accessibility
- Appendix G - Transit Route General Conditions
- Appendix H - Residential Road General Conditions
- Appendix I - Bike Lane General Conditions
- Appendix J - Intersection Ice Control
- Appendix K - Snow Removal on Category 1-3 Roads

## Appendix A Environmental Conditions Analysis

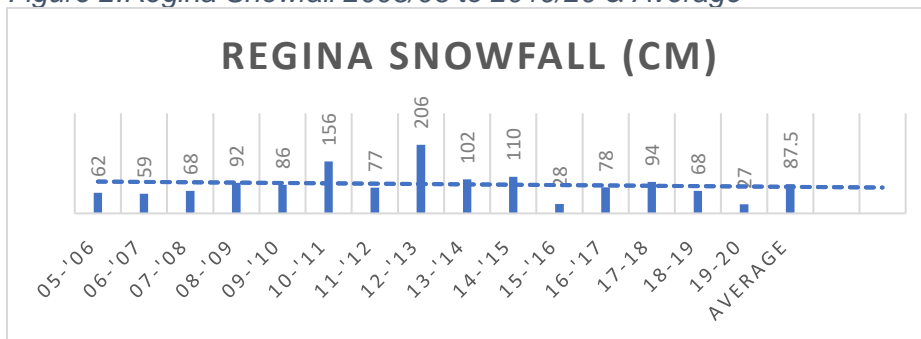
Although it is very difficult to predict the winter conditions in advance, the weather data for the past ten years indicates that the snowfall amounts in Regina have been decreasing. Figures 1 and 2 below indicate this trend. The linear trendline in Figure 2 highlights the possibility of snowfall amounts dropping in the coming years if this trend continued. The data also shows that the average monthly temperatures have been rising through the years. The number of snow days have dropped to 35 days in the last five years when compared to an average of 44 days during 2009/2010 to 2013/2014 seasons.

The above factors directly impact City of Regina's (City) Winter Maintenance Program in terms of operational and financial planning. Over the past few years, the need to systematically plow the major roads in Regina has reduced from five times a season to only four times. Similarly, major blizzards that dump 25 centimetres or more during a single event are less frequent requiring winter maintenance crews to perform only one residential plow and one alley plow in a season instead of two plows performed for each activity in earlier seasons.

*Figure 1: Regina Weather Trend*



*Figure 2: Regina Snowfall 2005/06 to 2019/20 & Average*



The Roadways Seasonal Operations branch would always be ready to tackle harsher winters and provide emergency response if required. The Winter Maintenance Reserve has a current balance of \$1.8 million and this source of funding would be used in an above average season. Assuming the milder weather trend could continue in the coming years, Administration studied the possible financial impact and it is expected that a total cost saving of \$1.223 million is possible due to reduced maintenance activities.

#### **Expected Savings:**

As indicated in the Table 1 below, there is a total saving potential of \$1.223 million due to reduced winter maintenance requirements under various programs listed in the table.

**Table 1: *Expected Savings due to milder weather trends:***

<b>Major Winter Maintenance Program</b>	<b>Expected Costs (Average 5-storms)</b> Previous average winter season based on historic data	<b>Expected Costs (Average 4-storms)</b> New average	<b>Expected Savings</b>	<b>Comments</b>
Plowing of Roads	\$2.172 million	\$1.575 million	\$0.596 million	<ul style="list-style-type: none"> <li>Based on cost of 4 systematic plows instead of 5 plows</li> <li>Based on only one residential plow instead of two plows</li> <li>Cost saving in storm, systematic and routine maintenance modes due to reduced cost of resources (manpower, City owned and hired equipment)</li> </ul>
Plowing of Alleys	\$0.131 million	\$0.066 million	\$0.066 million (reflected in Alley Tax Levy)	<ul style="list-style-type: none"> <li>Based on one alley plow instead of two.</li> </ul>
Ice Control on Roads	\$1.932 million	\$1.665 million	\$0.267 million	<ul style="list-style-type: none"> <li>Based on cost of 4 systematic plows instead of 5 plows</li> </ul>
Snow removal	\$2.519 million	\$2.159 million	\$0.360 million	<ul style="list-style-type: none"> <li>Lower snow accumulations require less snow removal</li> </ul>
		Total Expected Saving	<b>\$1.223 million</b>	



## Winter Maintenance Policy

### Purpose

The purpose of the Winter Maintenance Program is to provide winter maintenance that effectively supports the health, attractiveness, and economic viability of this community. The purpose of this Policy is to provide winter maintenance guidelines for the Winter Maintenance Program. Both the policy and program are intended to be complimentary with the City of Regina Salt Management Plan. All activities in the program, in particular the Ice Control activity, will follow the intent, guidelines, and practices laid out in the Plan.

### Scope

The scope of the Winter Maintenance Program and Policy addresses those public right of way assets involving:

- a) streets;
- b) sidewalks;
- c) alleys; and
- d) easements.

Not included in the scope of this Policy or the Program are public and private property or right of way assets that are located within City limits:

- a) in City parks and open spaces;
- b) on City facilities and properties or on properties that are controlled by the City;
- c) in the F.W. Hill Mall;
- d) on properties controlled by the Wascana Centre Authority;
- e) are the responsibility of Saskatchewan Highways; or
- f) on private roads, sidewalks, facilities, or properties.

The Winter Road Maintenance Program is comprised of the following general activities:

- a) snow plowing of roads, alleys and sidewalks;
- b) ice control of roads, alleys and sidewalks;
- c) snow removal;
- d) snow dump sites; (To Be Inserted at Later Date)
- e) spring runoff - catch basins and ditches; (To Be Inserted at Later Date);
- f) snow fencing; and (To Be Inserted at Later Date)
- g) success indicators, monitoring, documentation and reporting (To Be Inserted at Later Date)

**Authority** This Policy is established by City Council.

**Contact** For further information, please contact:

**Public Works Division**  
Roadways Operations Department  
P.O. Box 1790  
2425 4<sup>th</sup> Avenue  
Regina, Saskatchewan S4P 3C8  
Telephone: 306.777.7000  
Fax: 306.777.7057

**Definitions**

**Bare Pavement** – refers to a road surface condition where the wheel paths in driving lanes are generally visible. Ice, frost, or snow may remain in wheel paths which results in slippery conditions. Loose snow between or outside of the wheel paths is normally plowed. Generally 3 cm of compacted snow between or outside of the wheel paths is not plowed.

**Ice Control** – the application of aggregate abrasives and/or chemicals to a driving or walking surface to improve traction.

**Normal Winter Driving Conditions** – refers to the road conditions which result from adhering to a set of end condition statements as described in this Policy document.

**Passability** - refers to maintaining a driving lane in such a condition that police, fire, and ambulance vehicles can use the street in an emergency response.

**Peak Traffic Hours** – the hours between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. Monday to Friday, excluding holidays.

**Plow Snow (Alleys)** – the pushing of accumulated snow from the centreline of the alley surface, leaving snow ridges on each side, such that one vehicle width is provided.

**Plow Snow (Roads)** - the pushing of accumulated snow from driving or parking lanes. The resulting snow ridges may be stored in centre medians or in parking lanes adjacent to the curb.

**Plow Snow (Sidewalks)** – the pushing of accumulated snow from the sidewalk surface, resulting in a minimum one metre wide compacted snow walking surface, leaving snow ridges on both sides of the sidewalk.

**Plowed Around** – during plowing operations a plow may travel around a parked vehicle leaving a snow ridge.

**Road Categories for Systematic Plowing and Ice Control** – every road segment within the entire road network is classified into one of five categories which are defined as follows:

Category 1	Freeways/expressways including ramps and loops, major arterial roads, and any road on a designated hospital emergency route.
Category 2	Minor arterial roads, major collector roads with traffic volumes > 5,000 vehicles per day and all roads in the area referred to as Regina downtown.
Category 3	Major collector roads (with traffic volumes < 5,000 vehicles per day), industrial/commercial roads, and any minor collector or major residential local roads on a designated transit or truck route.
Category 4	Minor collector roads and major residential local roads which lead into school bus unloading zones.
Category 5	Residential local roads.
Category 6	Gravel roads.

**Road Segment** – the distance between two intersections.

**Rutting** – refers to the wheel path troughs in compacted snow surfaces.

**Salt Management Plan** – the most recent version of the City’s “Plan” developed in accordance with Environment Canada’s “Code of Practice for the Environmental Management of Road Salts”.

**Snow Event** – a combination of snow or wind causing snow to accumulate on driving or walking surfaces. For the ice control activity, snow event shall also include rain or freezing rain or other weather conditions that have a similar effect on road surfaces. The end of a snow event is when winter precipitation no longer accumulates on roadway surfaces for a sufficient period of time to allow complete systematic plowing and ice control to be completed as specified in this Policy.

**Snow Removal** – refers to the reducing or cleaning away of snow ridges or piles. Typically, this is accomplished by redistributing this excess snow to existing snow ridges on the same block and if this is not possible then it is removed by loading and hauling off site.

**Snow Ridge**- the row of excess snow formed by plowing roads, alleys, or sidewalks.

**Systematic Ice Control (Roads)** – refers to a methodical approach taken to complete one ice control cycle on the road network as specified in this Policy following systematic road plowing or the end of a snow event.

**Systematic Plowing (Roads)** – refers to a methodical approach taken to complete one plowing cycle on the road network as specified in this Policy following the end of a snow event.

**Typical Winter** – refers to the average weather conditions for Regina between October and April including approximately: two blizzards lasting six hours or more per year; 30 blizzard hours per year; 50 days with snow fall per year; total annual snowfall of 105 cm; temperature ranges from 10°C to -50°C; and individual snow events less than 10 cm.

**Windrowing** – multiple snow ridges placed in an open field parallel with the road to minimize drifting snow from collecting on the road surface.

## Policy Statement

### 1.0 GENERAL

The performance and end condition objectives outlined by this policy include the following underlying assumptions:

- a) That the operational activities are being undertaken during a typical weather event during a typical winter season. The City acknowledges that Regina may be subject to extreme or extraordinary weather which may diminish the City's ability to achieve the policy objectives within the stated time frames.
- b) The activities detailed herein attempt to reduce hazardous roadways conditions caused by winter weather; however, the City acknowledges that weather conditions are beyond the City's control and dangerous conditions may nonetheless result despite the City's efforts.
- c) That winter road safety is a cooperative activity between users of the roadways and the City. The City expects that users of the roadways will

exercise reasonable care for their own safety when travelling the roadways during winter conditions.

There are several general objectives which support the purpose of the program policy:

Objective #1	All roads are made passable for emergency (fire, police, ambulance) response vehicles.
Objective #2	Normal winter driving conditions and reasonable sidewalk access are provided on key routes through systematic plowing and sanding operations on priority one roads.
Objective #3	Normal winter driving conditions and reasonable sidewalk access are provided along regional commercial developments and secondary routes through systematic plowing and sanding operations on priority two roads.
Objective #4	Normal winter driving conditions are provided along tertiary routes through systematic plowing and sanding operations on priority three roads.
Objective #5	Safety and travel efficiency are provided through the plowing and removal of windrows from in front of guardrails and off of bridge decks.
Objective #6	Alleys are passable for the collection of solid waste collection and access by utility companies and the public.
Objective #7	Normal winter driving conditions are maintained through snow removal operations.
Objective #8	Residential and low volume routes are made passable through plowing operations.
Objective #9	Snow clearing is provided at City owned facilities to provide reasonable parking and access.
Objective #10	Snow clearing is provided on pathways in some parks and connecting walkways and in some open spaces which are typically in the vicinity of recreation centres.
Objective #11	Reasonable sidewalk access is provided through enforcement of the Regina Clean Property Bylaw, 1997.

When severe weather conditions reach a point where winter maintenance operations can not continue without compromising public and/or employee safety, temporary road closures may be implemented.

The Manager of Winter Maintenance, or his/her designate, makes the ultimate decision to temporarily close a road. When this occurs, the Public Works Dispatch Office shall contact:

- Traffic Operations Command Centre;
- Fire, Police, and Emergency Medical Services;
- City Central and City Manager's Office;
- Communications Division;
- Local radio/television newsrooms and the Leader Post.

The Manager of Winter Maintenance is responsible for the day-to-day operation and coordination of the Roadway Operations Winter Maintenance Program.

## **2.0 PLOWING**

There are three operating environments involved in the snow plowing operation:

- During a snow event;
- Systematic road plowing; and
- Routine maintenance

### **2.1 ROADS**

The City will classify the road network for snow plowing activities. In all three operating environments, road snow plowing will be conducted in accordance with the Road Categories for Systematic Plowing and Ice Control.

#### **a) During a Snow Event:**

- **General**

During a snow event, the first priority objective for road snow plowing is to maintain passability on roads for emergency response vehicles. As the end of the storm approaches, this operational objective becomes increasingly shared with the next operational objective, that of systematically plowing the road network. Plowing will be initiated on Category 1 and 2 roads when approximately 5 cm of snow has accumulated on the road surface during a snow event. When severe snow events occur, operations to establish and maintain passability may only focus on Category 1 and 2 roads.

- **Locations**

All roads which are not passable for emergency response vehicles.

- **Time Frames**

Time frames are not applicable during a snow event. Operations will continuously cycle for the duration of the snow event. Following typical snow events, all roads will be passable for emergency response vehicles within twenty-four hours from conclusion of snow event.

- **End Conditions**

Passability is maintained on as many roads as resources and weather conditions permit.

Snow and ice accumulation could remain on the road surface

Snow ridges across driveways, intersections, alleys, transit stops, and around parked vehicles may not be reduced in height.

**b) Systematic Plowing:**

- **General**

During systematic road plowing, the operational objective is to re-establish traffic flow in driving lanes and designated turning lanes. Systematic road plowing operations will be triggered by the following snow accumulations during a single snow event:

Category 1 and 2 roads – 5 cm

Category 3 and 4 roads – 10 cm

Category 5 roads – 25 cm

Category 6 roads – 10 cm

Systematic road plowing operations may also be triggered in other circumstances where there are several snow accumulations of less than 5 cm, and the Manager of Winter Maintenance will make the determination to call a systematic response if warranted.

- **Locations**

All roads provided snow accumulation has met or exceeded trigger values for each category.

- **Time Frames**

Systematic road plowing will be completed within the following time frames from end of snow event:

Category 1 roads within 24 hours  
Category 2 roads within 36 hours  
Category 3 roads within 48 hours  
Category 4 roads within 60 hours  
Category 5 roads – no time frames specified  
Category 6 roads – within 60 hours

- **End Conditions**

Systematic road plowing is considered to be complete when the following conditions are met.

All Roads

Snow ridges will be reduced to a maximum height of 30 cm across driveways, intersections, alleys and signed unloading zones (including for school buses adjacent to schools and in front of senior's complexes with over 20 units in a single building).

Snow ridges will be reduced to a maximum height of 15 cm on Transit stops.

Snow ridges of any height may be left around parked vehicles.

Snow ridges placed in parking lanes may encroach up to 30 cm on to the sidewalk.

The driving lanes and designated turning lanes will be plowed to the following conditions during systematic plowing:

- Category 1 and 2 roads to bare pavement as defined
- Category 3 and 4 roads to a compacted snow surface of approximately 8 cm or less depth
- Category 5 roads to a compacted snow surface
- Category 6 roads to a compacted snow surface of approximately 8 cm or less depth

**c) Routine Maintenance**

- **General**



During routine maintenance, the operational objectives are to:

- a) Complete post snow event cleanup on the road network to establish normal winter driving conditions as defined for each category of road;
- b) Maintain the road network to normal winter driving conditions and correct deficiencies which result from cumulative light snow events, spot drifting, or traffic effects; and
- c) Prepare for future snow events.

Category 5 roads may be systematically plowed to reduce snow pack depth resulting from cumulative snow events.

- **Locations**

Routine maintenance is conducted on all roads in accordance with the Road Categories for Systematic Plowing and Ice Control.

- **Time Frames**

- a) Post snow event cleanup will be completed within the following time frames following systematic plowing completion:
  - Category 1 and 2 roads – seven days
  - Category 3 and 4 roads – 14 days
  - Category 5 roads – 21 days
  - Category 6 roads – 14 days
- b) Time frames are not applicable when maintaining the road network to normal winter driving conditions and correcting deficiencies which result from cumulative light snow events, spot drifting, or traffic effects.
- c) Time frame requirements are not applicable when preparing for future snow events.

- **End Conditions**

Normal winter driving conditions are considered to be established on roads when the following conditions are met:

- Snow ridges will be reduced to a maximum height of 30cm across driveways, intersections, alleys and signed unloading zones

(including for school buses adjacent to schools and in front of seniors' complexes with over 20 units in a single building).

- Snow ridges placed in parking lanes may encroach up to 30 cm on to the sidewalk. The outside base edge of the snow ridge will not exceed 60 cm from the curb face.
- On bridge decks and in subways snow ridges will generally be less than 1 metre high or 1.5 metres wide.
- Snow ridges in front of guard rails will generally be less than 30 cm in height.
- Maximum height of snow ridges within transit stops will be 15 cm and will not encroach onto the sidewalk.
- Transit stops will be a minimum of 12 m in length.

Driving lanes and designated turning lanes will be maintained to surface conditions as follows:

- Category 1 and 2 roads to bare pavement including a portion of the parking lanes adjacent to a snow ridge.
- Category 3 and 4 roads rutting in excess of approximately 8 cm will be addressed.
- Category 5 roads rutting in excess of approximately 10 cm will be addressed.
- Category 6 roads rutting in excess of approximately 8 cm will be addressed.

## 2.2 ALLEYS

The City does not classify the alley network for the purpose of prioritizing snow plowing activities in alleys.

### a) During a Snow Event

- **General**

Typically, alleys will not be plowed during a storm event.

### b) Systematic Plowing

- **General**

During systematic alley plowing, the operational objective is to return the alley network to normal winter driving conditions. Systematic alley plowing operations are triggered by a 25 cm snow accumulation during a single snow event.

- **Locations**

All alleys.

- **Time Frames**

Systematic alley plowing will be completed within 96 hours from the end of a snow event.

- **End Conditions**

Normal winter driving conditions are considered to be established on alleys when the following conditions are met:

- The compacted snow surface width will provide single vehicle passage.
- Snow ridges may be formed on both sides of the plowed surface.
- Snow ridges are not reduced in height across garages, driveways, or parking lot entrances.

### c) Routine Maintenance

- **General**

During routine maintenance, the operational objective is to maintain normal winter driving conditions in alleys as defined. Alleys may be systematically plowed to reduce snow pack depth resulting from cumulative snow events.

- **Time Frames**

No time frames specified.

- **End Conditions**

The compacted snow surface width will provide single vehicle passage.

Rutting in the compacted snow surface will not exceed approximately 10 cm.

## 2.3 SIDEWALKS

The City does not classify the sidewalk network for the purpose of prioritizing snow plowing activities on sidewalks.

- a) **During a Snow Event**

Systematic sidewalk plowing operations will be triggered by 5 cm snow accumulations during a single snow event.

- b) **Sidewalk Plowing**

- **General**

The City will plow and maintain specific sidewalk locations.

- **Locations**

- Any sidewalk adjacent to a City owned building or property that is located within the area noted in Schedule B of The Clean Property Bylaw No. 9881.
    - Any sidewalk adjacent to a City owned building or parking lot that is regularly used by the public during the winter season, excluding outdoor rinks.
    - Any sidewalk adjacent to bridge decks and subways.
    - Any sidewalk adjacent to transit stops on the Heritage bus route which is not covered by The Clean Property Bylaw No. 9881.
    - Adjacent to no frontage locations.
    - Adjacent to storm channel and railway crossings on Category 1 and 2 streets.

- Adjacent to vacant land on Category 1 and 2 streets.
- Adjacent to city owned parks on Category 1, 2, 3, and 4 streets.
- Adjacent to city owned parks that are next to a public school.
- Adjacent to city owned buildings or parks not accessed by the public in winter on Category 1 and 2 streets.
- Adjacent to hospital gateway (sidewalks both sides on 14<sup>th</sup> Avenue from Broad Street to the alley east of Halifax Street).
- Adjacent to Core Community Park (Quebec Street side).

- **Time Frames**

Within 72 hours from end of snow event.

- **End Conditions**

Sidewalk locations will be maintained to a general width of 1 metre.

Sidewalk locations will be maintained to a compacted snow surface with a maximum depth of approximately 5 cm.

### 3.0 ICE CONTROL

There are three operating environments involved in the ice control operation:

- During a snow event;
- Systematic ice control; and
- Routine maintenance

Typically, ice control materials are only applied intermittently at spot sections along roads, alleys, or sidewalks. Continuous or uninterrupted application of ice control materials is not standard practice.

To determine if a spot section is treated with ice control material during any given cycle, staff judge the relative visibility of previously applied materials.

#### 3.1 ROADS

The City will classify the road network for ice control activities. In all three operating environments, ice control will be conducted in accordance with the Road Categories for Systematic Plowing and Ice Control. For the ice control activity, time frames are typically expressed as a cycle frequency. Cycle frequency refers to the time interval between successive passes on a road to apply materials as judged by City staff.

## a) During a Snow Event

### • General

During a snow event, the operational objective of the ice control activity is to slow the rate of deterioration in driving conditions.

### • Locations

During a snow event ice control operations on Category 1, 2, 3, and 4 roads will be initiated near the start of snow or freezing rain precipitation.

As snow or freezing rain precipitation continues, ice control operations will be increasingly directed, as determined by City staff, to Category 1 and 2 roads only.

### • Time Frames

From near the start of snow accumulation to a point where approximately 2 cm of snow has accumulated during a single snow event on the road surface, cycle frequency will be as follows:

Category 1 roads (posted speeds > 70kph)	4 hour cycle
Category 1 roads (posted speeds < 70kph)	12 hour cycle
Category 2 roads	12 hour cycle
Category 3 roads	24 hour cycle
Category 4 roads	24 hour cycle

After approximately 2 cm of snow accumulation during a single snow event, cycle frequency will be as follows:

Category 1 roads (posted speeds) > 70kph	4 hour cycle
Category 1 roads (posted speeds) < 70kph	5 hour cycle
Category 2 roads	5 hour cycle
Category 3 and 4 roads	Not specified

### • End Conditions

The effectiveness of ice control can not be pre-determined.

Spot sections of roads that are typically treated, based on the judgement of staff are:

- sections leading up to sign or signal controlled intersections and crosswalks;

- bridge decks and subways including the approach to and exit from;
- grades greater than 5%;
- ramps and merging lanes;
- curves located on Category 1 – 4 roads; or
- public and separate school frontage roads and those intersections immediately adjacent to school properties.

#### **b) Systematic Ice Control**

- **General**

During systematic ice control operations, the operational objective is to complete one cycle of ice control on spot sections of all roads which have been systematically plowed.

- **Locations**

All roads which have been systematically plowed.

- **Time Frames**

Systematic ice control will be completed within the following time frames:

Category 1 and 2 roads within four hours of systematic plowing.

Category 3 and 4 roads within eight hours of systematic plowing.

Category 5 and 6 roads within 24 hours of systematic plowing.

- **End conditions**

The effectiveness of ice control can not be pre-determined.

Spot sections of roads that are typically treated, based on the judgement of staff are:

- sections leading up to sign or signal controlled intersections and crosswalks;
- bridge decks and subways including the approach to and exit from;
- grades greater than 5%;
- ramps and merging lanes;
- curves located on Category 1 – 4 roads; or
- public and separate school frontage roads and those intersections immediately adjacent to school properties.

### c) Routine Maintenance

- **General**

During routine maintenance for the ice control activity, the operational objectives are to:

- Complete one cycle of ice control following post snow event cleanup operations. This cycle will be similar to that provided during systematic ice control.
- Conduct routine ice control on each road category at a pre-determined cycle frequency.

- **Time Frames**

The one cycle of ice control will be completed within eight hours following post snow event clean-up operations.

Routine ice control cycle frequency will be as follows:

Category 1 roads (posted speeds > 70kph)	12 hour cycle
Category 1 roads (posted speed < 70 kph)	24 hour cycle
Category 2 roads	24 hour cycle
Category 3 roads	48 hour cycle
Category 4 roads	48 hour cycle
Category 5 roads	120 hour cycle
Category 6 roads	120 hour cycle

- **End Conditions**

The effectiveness of ice control can not be pre-determined.

End conditions are judged solely on whether cycle frequency time frames have been met.

Spot sections of roads that are typically treated, based on the judgement of staff are:

- sections leading up to sign or signal controlled intersections and crosswalks;
- bridge decks and subways including the approach to and exit from;
- grades greater than 5%;
- ramps and merging lanes;
- curves located on Category 1 – 4 roads; or



- public and separate school frontage roads and those intersections immediately adjacent to school properties.

### 3.2 Alleys

The City does not classify the alley network for the purpose of prioritizing ice control activities in alleys.

Ice control activities for alleys are conducted as time and resources permit. No time frames are specified for ice control in alleys.

- **Locations**

Alleys that will be considered for ice control activity must:

- Have a majority of commercial or apartment building properties adjacent to the alley;
- Be adjacent to school parking lot entrances or school bus unloading zones that are located in an alley; or
- Have grades exceeding 5%

- **End Conditions**

The effectiveness of ice control can not be pre-determined.

Ice control will be applied on spot sections at the alley exit points and on grades exceeding 5%.

### 3.3 Sidewalks

The City does not classify the sidewalk network for the purpose of prioritizing ice control on sidewalks.

- **Locations**

- Any sidewalk adjacent to a City owned building or property that is located within the area noted in Schedule B of The Clean Property Bylaw No. 9881.
- Any sidewalk adjacent to a City owned building or parking lot that is regularly used by the public during the winter season, excluding outdoor rinks.
- Any sidewalk adjacent to bridge decks and subways.
- Any sidewalk adjacent to Transit stops on the Heritage bus routes which are not covered by The Clean Property Bylaw No. 9881.
- Adjacent to no frontage locations.

- Adjacent to storm channel and railway crossings on Category 1 and 2 streets.
- Adjacent to vacant land on Category 1 and 2 streets.
- Adjacent to city owned parks on Category 1, 2, 3, and 4 streets.
- Adjacent to city owned parks that are next to a public school.
- Adjacent to city owned buildings or parks not accessed by the public in winter on Category 1 and 2 streets.
- Adjacent to hospital gateway (sidewalks both sides on 14<sup>th</sup> Avenue from Broad Street to the alley east of Halifax Street).
- Adjacent to Core Community Park (Quebec Street side).

- **Time Frames**

Ice control activities following freezing rain events will be completed within 72 hours from end of event.

Ice control activities on compacted snow surfaces as determined by staff have no time frame for completion specified.

- **End Conditions**

The effectiveness of ice control can not be predetermined.

End conditions are not specified.

## 4.0 SNOW REMOVAL

- **General**

Plowing and ice control activities take precedence over snow removal activities both during a snow event and during systematic plowing or systematic ice control operations. Snow removal operations may be suspended at the beginning of snow events or during systematic operations so resources can be reallocated to address non-typical winter conditions and higher priority objectives.

- **Locations/Time Frames/ End Conditions**

- a) At the following locations, snow ridges of any height caused by plowing will be cleared from those areas within the time frames noted.
  - In school bus unloading zones at schools within 48 hours of road plowing (curb face showing).
  - In unloading zones in front of seniors complexes with over 20 units in a single building within 14 days of plowing.

- In disabled metered parking stalls within 24 hours of plowing.
- b) At the following locations, snow ridge heights caused by plowing will comply with the sight line controls as set out in section 69 and Schedule H of the Traffic Bylaw within the time frames noted:
  - At intersections adjacent to school properties and, at school fence gates that are opening onto roads within seven days of plowing. The snow ridge will be reduced at these locations to a maximum height of 30 cm.
  - At signal or sign controlled pedestrian corridors within 14 days of plowing.
  - At intersections on Category 1 and 2 roads, within 14 days of plowing.
- c) Snow removal involving load and hauling off site will generally be initiated when:
  - On blocks where the school bus unloading zones are located, snow ridges in excess of 75 cm exist – within 14 days of plowing.
  - In metered parking stalls, snow ridges in excess of 60 cm within 14 days.
  - Snow ridges generally greater than 1 m in height that impact travel widths or sight lines as determined by City staff on:
    - Category 1 and 2 roads;
    - Roads within the area bounded by Victoria Avenue to College Avenue and Albert Street to Broad Street;
    - 4th Avenue to Dewdney Avenue and Albert Street to Toronto Street;
    - Roads immediately adjacent to Regina General Hospital;
    - 14th Avenue from Halifax Street to Broad Street;
    - 15<sup>th</sup> Avenue from Broad Street to Winnipeg Street; and
    - Category 3 roads needed to provide City Transit with adequate travel width.



## Appendix C Policy Review and Feedback

The Winter Maintenance Policy review process included research of other municipalities as well as extensive engagement with residents, and external and internal stakeholders. The feedback was used to identify the most critical common areas of improvement in winter maintenance that needed to be addressed.

### Identification of Key Areas of Concern Based on Collective Feedback:

1. Ice control on intersections
2. General conditions of residential roads
3. Accessibility of sidewalks around transit stops
4. General conditions of sidewalks
5. Safety around school zones
6. General conditions around Transit routes
7. General conditions of Bike lanes
8. Simplifying Policy document

### Survey:

A winter Maintenance Policy Review Survey was conducted under '*Be Heard Regina*' initiative during Q1, 2020 to gather feedback from residents, businesses and anyone who was impacted by Winter Maintenance Policy service levels and could provide some useful feedback.

Multiple communication methods were adopted to reach out to maximum residents, businesses, stakeholders and visitors. Some of the communication channels included Public Service Announcements (PSA), media interviews, City of Regina's social media handles like Facebook and Twitter, City's winter webpage and stakeholder engagement.

Approximately 3000 residents and businesses responded to the survey and provided valuable feedback by answering a range of multiple-choice questions and writing comments in response to open-ended questions designed to encourage a richer feedback for final evaluation and analysis purpose. Quantitative and Qualitative data from the survey results was analyzed to identify top five areas of concern relating to winter maintenance.



### Identification of Critical Areas of Concern Based on Survey Feedback:

1. Ice control at intersections
2. General conditions of residential roads
3. Timely plowing of snow
4. General conditions of major roads
5. Sidewalks maintenance
6. Simplification of the policy document for better understanding



### Survey Findings:

As evident from the Table 1 below, generally the respondents are satisfied with the current level of service towards majority of the policy parameters except '*general satisfaction with ice control and snow plow timelines on local/ residential roads*' for which the satisfaction level seems quite low (only 35%).

**Table 1 Winter Maintenance Review Survey Findings**

<b>Key Policy parameter</b>	<b>Respondents % Satisfied with current LOS or No comments</b>	<b>Respondents % Not Satisfied</b>
General satisfaction with road plowing and winter road maintenance	74%	26%
General satisfaction with snow plowing timelines	74%	26%
General satisfaction with ice control and snow plowing timelines on major roads	72%	28%
General satisfaction with ice control and snow plowing timelines on local/ residential roads	35%	65%
General satisfaction with current approach to snow removal	79%	21% However, 59% of these do not want an increased tax component to support snow removal enhancement
Sidewalks	76%	23% However, 53% of these do not want an increased tax-component to assist with the service enhancement
Priority Roads ·General satisfaction with road categorization	80%	20%

**Survey Summary:**

## Survey Report

14 February 2020 - 05 April 2020

# Winter Maintenance Policy Review Survey

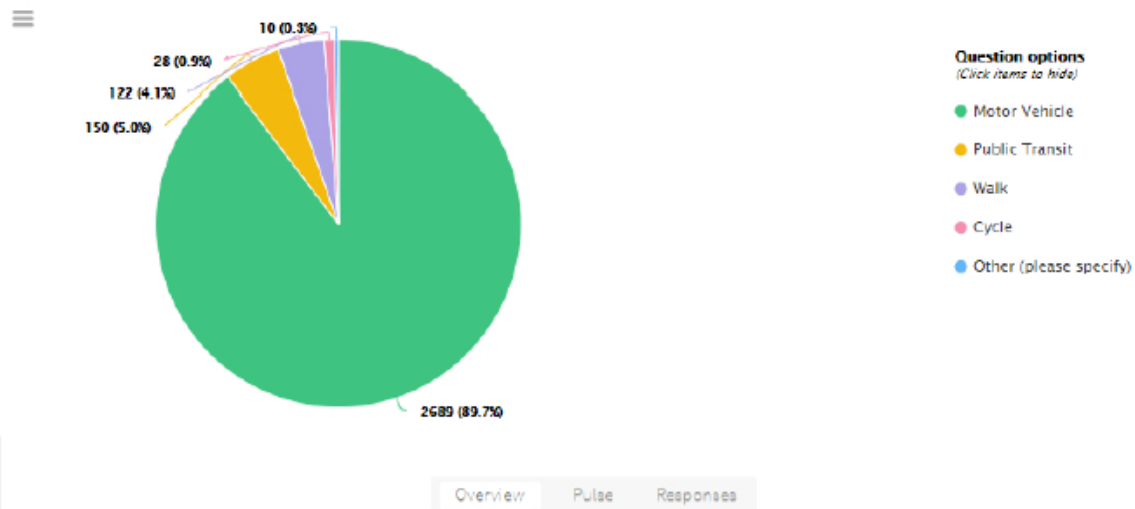
PROJECT: Winter Maintenance Policy Review

**Be Heard Regina**

engagement   
by Bang the Table

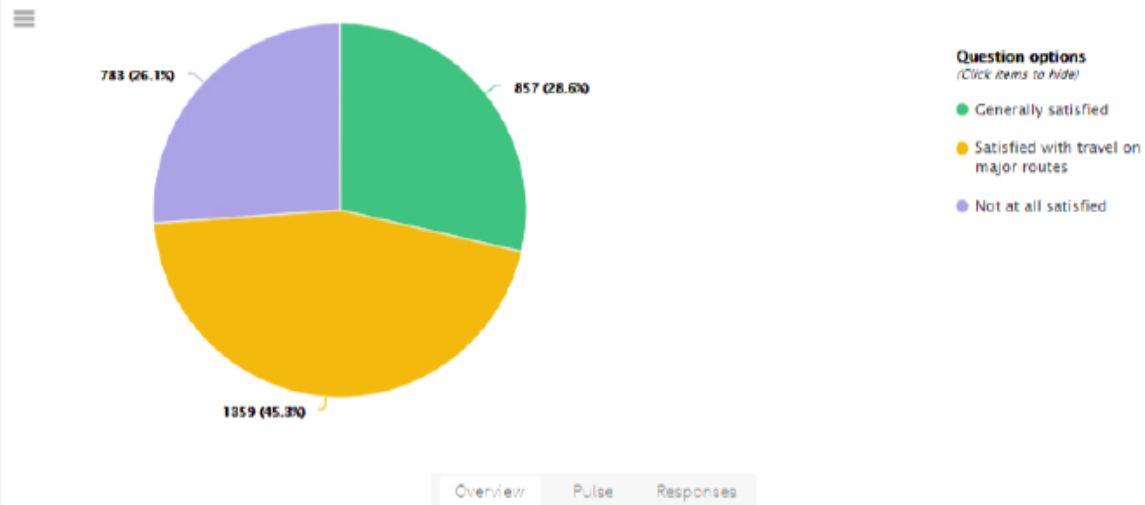


Q3 What is your primary way to get around Regina in winter?



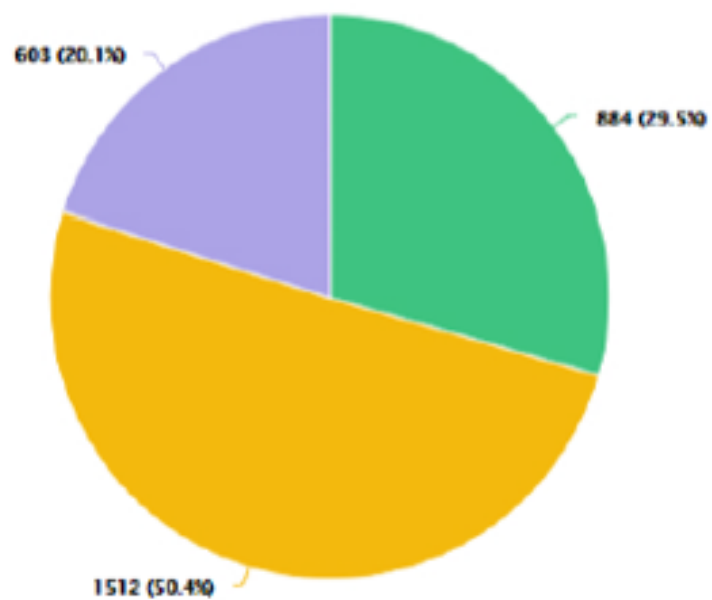
(2999 responses, 0 skipped)

Q4 Thinking back over the last two winters, how satisfied are you with how the City plows and maintains roads from November 1 to March 31?



(2999 responses, 0 skipped)

Q5 How satisfied are you with the above categorization?



**Question options**

*(Click items to hide)*

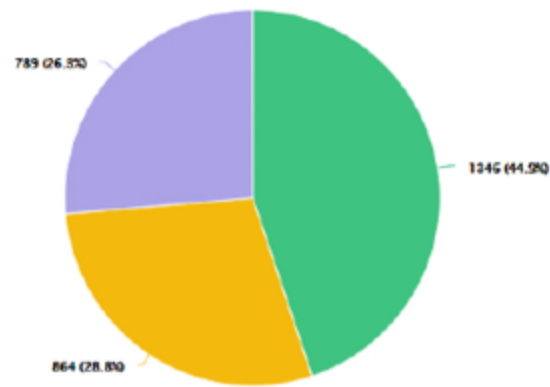
- Satisfied
- Somewhat satisfied
- Not at all satisfied

Overview

Pulse

Responses

Q8 The City of Regina's snow plowing activities typically occur within a reasonable amount of time.



**Question options**

*(Click items to hide)*

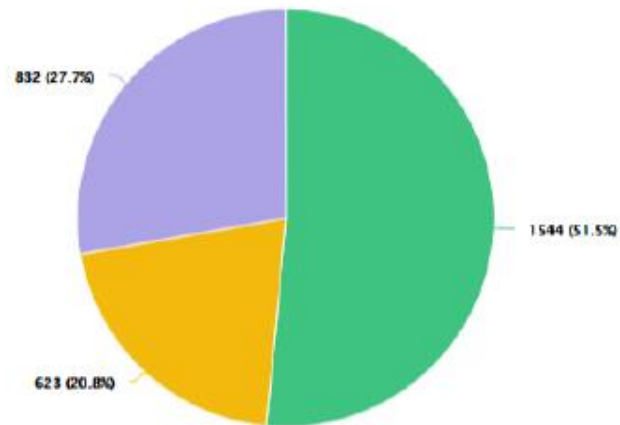
- Agree
- Neither agree or disagree
- Disagree

Overview

Pulse

Responses

Q9 I am satisfied with ice control and snow plowing of major roads.



**Question options**  
(Click items to hide)

- Agree
- Neither agree or disagree
- Disagree

Overview Pulse Responses

(2999 responses, 0 skipped)

Q10 I am satisfied with ice control and snow plowing of residential streets.

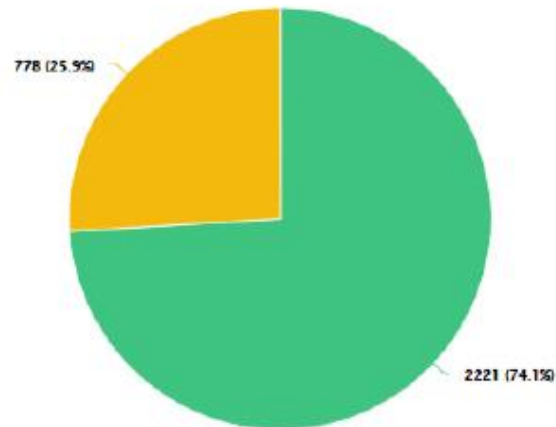


**Question options**  
(Click items to hide)

- Agree
- Neither agree or disagree
- Disagree

Overview Pulse Responses

Q14 Were you aware that the City has a Winter Maintenance policy to guide how streets are plowed during the winter?



**Question options**

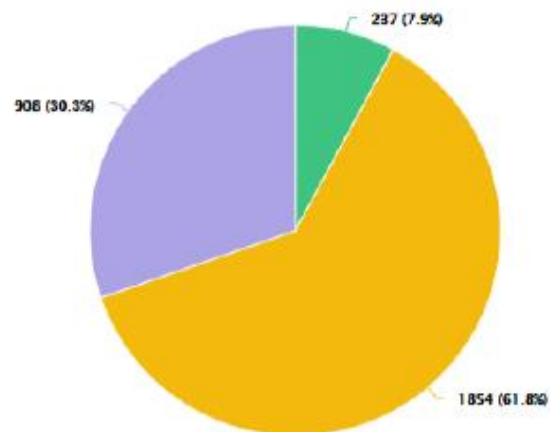
*(Click items to hide)*

- Yes
- No

Overview Pulse Responses

(2999 responses, 0 skipped)

Q15 How well does the City communicate its priorities for winter snow plowing and maintenance?

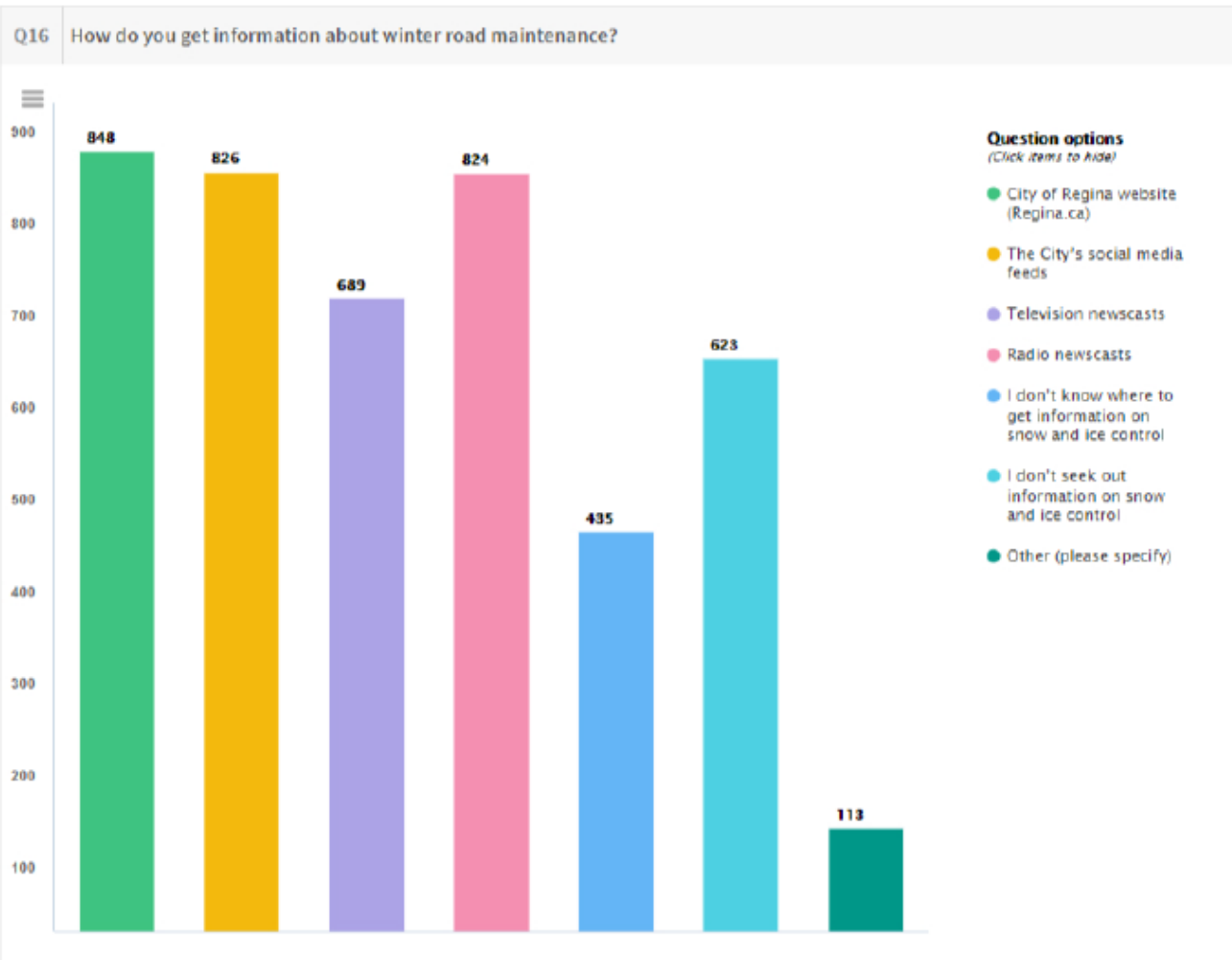


**Question options**

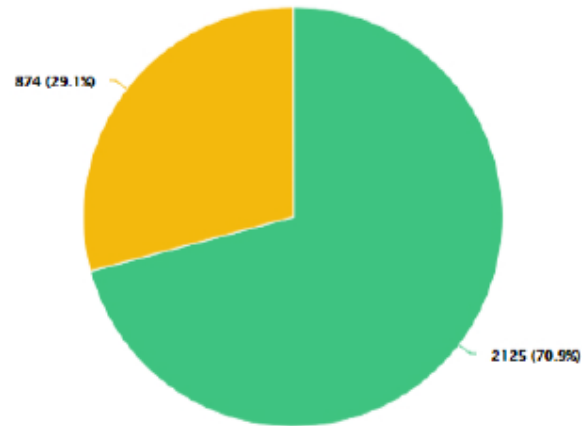
*(Click items to hide)*

- Very well. I know when and to what levels snow plowing and sanding will take place.
- Adequate. I have a general idea as to when major roads will be plowed and sanded.
- Not well. I am not sure how the City prioritizes roads and levels of service.

Overview Pulse Responses



Q17 I am aware of the City's approach to winter sidewalk maintenance.



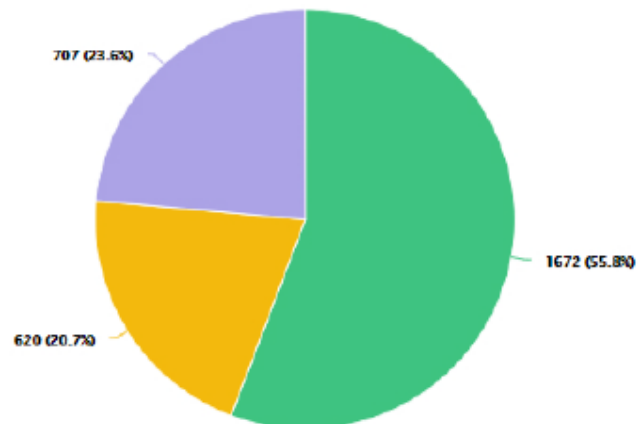
**Question options**  
(Click items to hide)

- Yes
- No

Overview Pulse Responses

(2999 responses, 0 skipped)

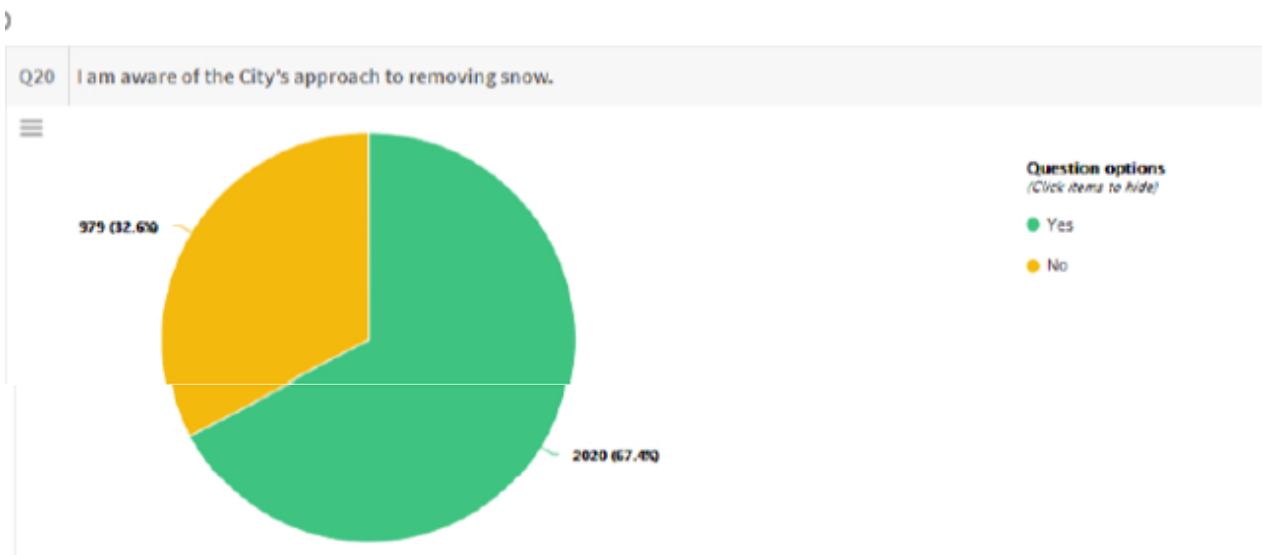
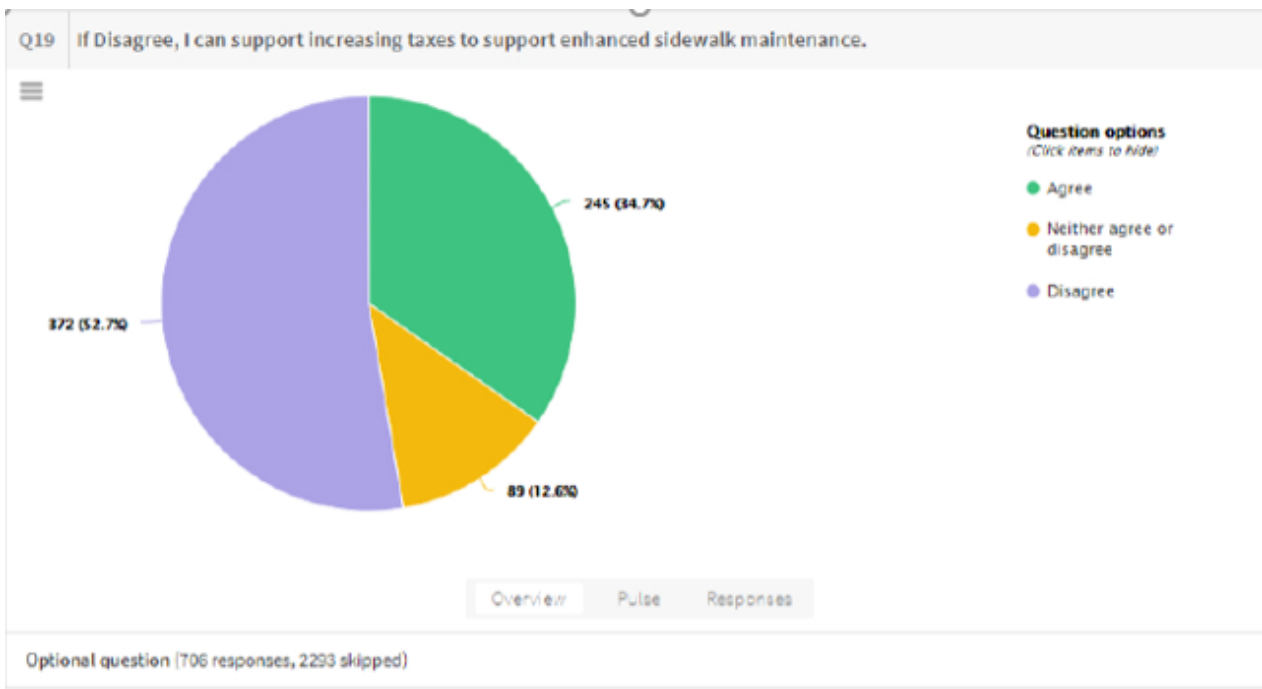
Q18 I can support the approach the City is taking to sidewalk maintenance, including requiring businesses and encouraging citizens to be responsible for their own sidewalk clearing.



**Question options**  
(Click items to hide)

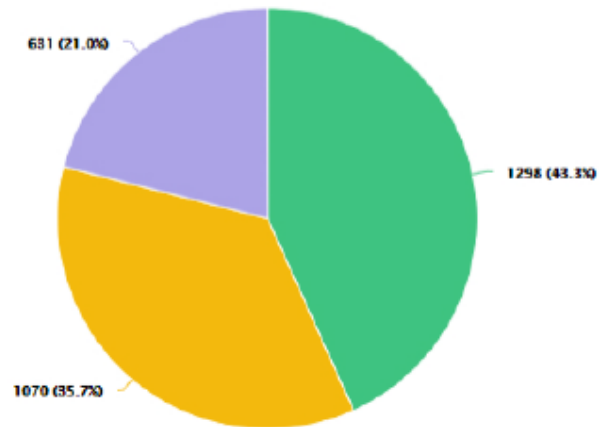
- Agree
- Neither agree or disagree
- Disagree

Overview Pulse Responses





Q21 I can support the City's approach to removing snow.



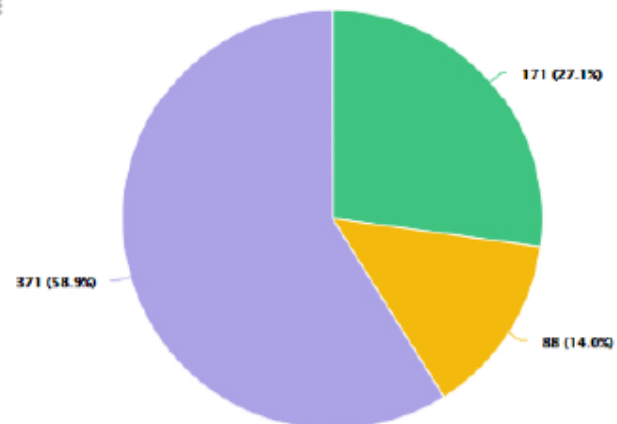
**Question options**  
(Click items to hide)

- Agree
- Neither agree or disagree
- Disagree

Overview Pulse Responses

(2999 responses, 0 skipped)

Q22 If Disagree, I can support increasing taxes to support enhanced snow removal.

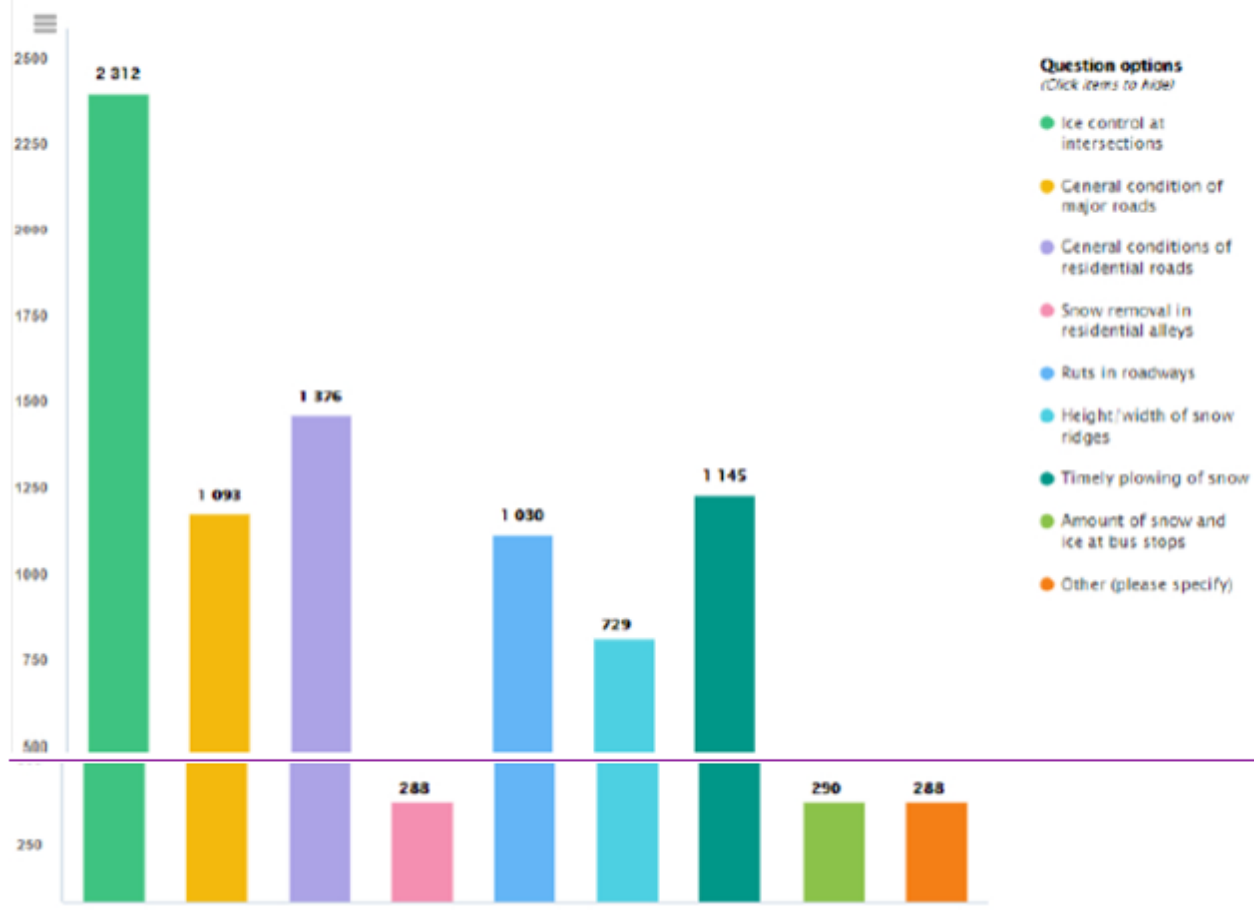


**Question options**  
(Click items to hide)

- Agree
- Neither agree or disagree
- Disagree

Q25

As a resident, I would prioritize the following three areas for improvements to winter road maintenance. Please select your top three choices.



**Table 2: Qualitative data from the Winter Maintenance Policy Review Survey:**  
(based on responses to the open-ended questions)

Other Observations from Survey Results	Evidence
Demand for enhanced residential winter maintenance programs including ice control, road plowing and frequent removal to avoid slippery conditions and ruts	Over 350 comments
Better coordination required between plowing and sanding activities. Especially, the time gap between plowing and sanding activity should be minimized	Over 300 comments
<ul style="list-style-type: none"> <li>- Residents' want to establish a system of getting accountability and assurance from those private property owners who do not clear their sidewalks on time causing inconsistency around the city.</li> <li>- Demand for strict enforcement of existing sidewalk clearing clause in the <i>Clean Property Bylaw</i> for businesses, commercial property owners.</li> <li>- Some suggestions for creating a new bylaw provision enforcing citywide residents/ private property owners to clear their walks within 48 hours like in other jurisdictions.</li> </ul>	Over 300 comments
Suggestions regarding making small changes in the current operational practices in order to achieve compliance to the levels of service for several policy parameters	Based on over 300 comments
Feedback to not raise taxes to achieve desired levels of service	Over 100 comments
Improve School zones plowing and removal. Do not leave ridges on either side of the streets around schools	Over 100 comments
Eliminating unnecessary cycling of roads with sanding equipment when no freeze thaw conditions	Over 100 comments
Finding: Residents' general awareness about current Winter Maintenance Policy not sufficient. Several comments could have been avoided if sufficient awareness was there.	Several examples in the survey comments
Improve communication relating to winter activities as well as policy.	Over 70
Full scale plowing activity on all roads should start while it is still snowing. Residents want all plows to be out even when <5cm snow on the ground or just at the start of snowfall	Over 60 comments
Many residents commented that the current WM policy is very good. No need to change. Just need to properly implement	Over 100 comments

### **Stakeholder Feedback:**

Several internal and external stakeholders in the city and their associates get impacted by City's Winter Maintenance Policy. City Administration identified such stakeholders and engaged with them through meetings, phone calls and emails to get their feedback on current policy as well as expectations relating to improved winter maintenance service levels.

Feedback received from the stakeholders was utilized to identify their key concerns relating to winter maintenance.

Following are the key stakeholders who were approached for feedback:

#### *Internal Stakeholders:*

Transit and Fleet (including Transit Operations, Paratransit & Revenue Services, Fleet Maintenance), Regina Fire & Protective Services, Emergency Preparedness and Business Continuity, Service Regina, Parking Services, Bylaw Enforcement, Citizen Services

#### *External Stakeholders:*

Regina Public and Catholic School Boards, Regina Downtown business Improvement District (RBID), Saskatchewan Health Authority (SHA), City of Regina Accessibility Committee, Pedestrian School Traffic Safety Committee, Saskatchewan General Insurance (SGI)/ City of Regina/ Regina Police Service Traffic Safety Committee, Regina Police Services, Business Owners & Managers' Association (BOMA)

### **Identification of Critical Areas of Concern Based on Stakeholder Feedback:**

1. Transit routes & Bike lanes to get higher priority and enhanced levels of service
2. Sidewalks around transit stops to get enhanced LOS especially for wheelchair accessibility
3. Safer school zones. Snow ridges to be removed from both sides of roads around schools
4. General sidewalk clearing all over the city
5. Simplification of the policy document for better understanding

### **Address Gaps in the current Winter Maintenance Policy:**

The review of the current Winter Maintenance Policy indicated that although we are currently performing the work, there are some general activities under current Winter Road Maintenance Program that were identified "*to be inserted at later date*"

The review indicated that it would be appropriate to include these general activities in the program in the new policy document as these are critical components of the program and significantly impact residents or businesses in the city.

Following general activities should be considered for inclusion in the new Winter Maintenance Policy:

1. Snow storage sites
2. Snow fencing (ridging)

### **Research:**

Research was carried out to study snow and ice control policies and level of service for municipalities in Western Canada that face similar operational challenges during winter season. These municipalities included Saskatoon, Moose-Jaw, Edmonton, Calgary and Winnipeg. Some of these cities have already gone through the process of updating their snow and ice control policies/ programs in recent years.

Research activity also included evaluating past feedback on winter activities based on Service Requests, engagement with City Council, operational staff, and recommendations, operational challenges, and outcomes of the best practices as recorded in previous Winter Maintenance Summary Reports.

### **Identification of Critical Areas of Concern Based on Research:**

*SRs, Council and Operations Staff/ field interactions, previous years' Annual Winter Summary Report, MBN report*

1. Priority Roads/ Categorization of roads
2. Sidewalks
3. Residential Roads
4. Snow Ridges
5. School Zones
6. Simplification of the policy document for better understanding

### **Municipal Benchmarking Network Canada (MBNCanada)**

The following graphs from the MBN Canada Performance Measurement Report 2018 indicate the comparison of winter maintenance costs (per lane km) of different municipalities in Canada. The costs are incurred to meet the Policy guidelines relating to the level of winter maintenance service for different programs.

Figures 28.4 and 28.3 below indicate the following:

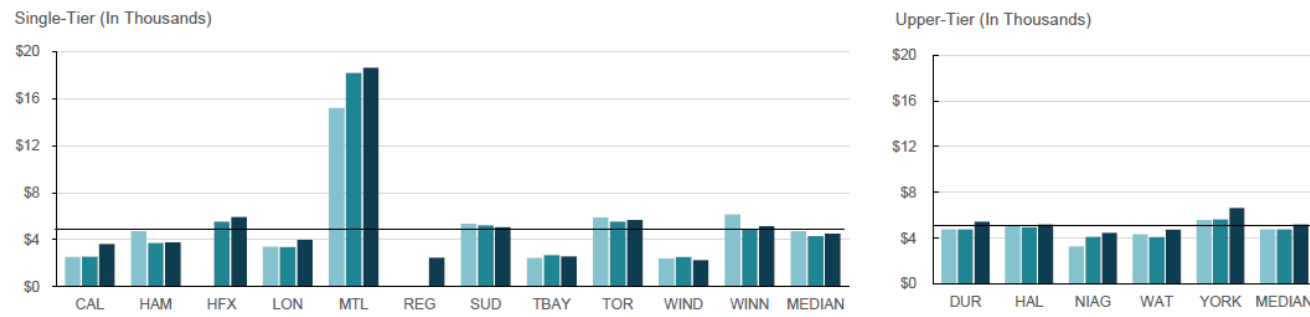
- Total cost for winter maintenance of roads per lane km for Regina is lower than most other municipalities in Canada that face similar challenges during winter but provide higher customer level of service. This shows that the cost of providing winter maintenance service in Regina could increase due to proposed enhancements of level of service.
- Total cost of winter maintenance per lane km of roads is fairly consistent for most municipalities. If required, this finding would be further studied and verified considering influencing factors like weather conditions and traffic volumes.

## MBN Report 2018:

### Roads

**Figure 28.4 Total Cost for Winter Maintenance of Roads per Lane Km Maintained**

This measure represents the total cost for winter maintenance of a single lane km. It includes all functions included in clearing and maintaining the roadway, and is not inclusive of sidewalk snow clearing and parking lots.



2016	\$2,541	\$4,736	N/A	\$3,406	\$15,189	N/A	\$5,352	\$2,464	\$5,872	\$2,406	\$6,147	\$4,736	\$4,760	\$5,148	\$3,277	\$4,322	\$5,600	\$4,760
2017	\$2,566	\$3,725	\$5,538	\$3,383	\$18,167	N/A	\$5,215	\$2,693	\$5,553	\$2,534	\$4,905	\$4,315	\$4,779	\$4,975	\$4,108	\$4,089	\$5,642	\$4,779
2018	\$3,637	\$3,788	\$5,946	\$3,974	\$18,624	\$2,496	\$5,065	\$2,580	\$5,665	\$2,275	\$5,159	\$3,974	\$5,450	\$5,202	\$4,459	\$4,729	\$6,643	\$5,202

Source: ROAD309T (Efficiency)

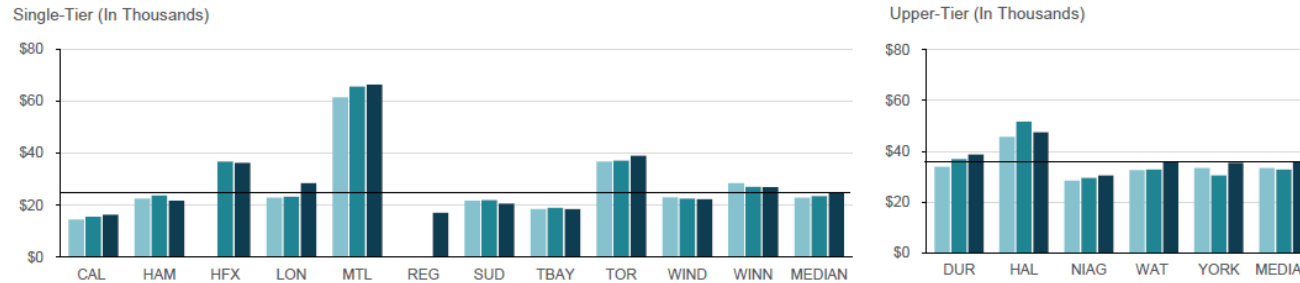
Montreal: The service thresholds for responding to weather incidents and the volume and type of snow removal required due to population density contribute to Montreal's higher cost.

York: Expenditures for the renovation of Central Maintenance Yard and additional snowplows to maintain new Rapidways.

## Roads

**Figure 28.3 Total Cost for Roads - All Functions Per Lane Km**

This measure represents the total cost of all functions related to road maintenance. This includes operating costs and amortization associated with capital costs for paved and unpaved roads, bridges and culverts, traffic operations, roadside maintenance, and winter control for roadways, sidewalks, and parking lots.



2016	\$14,454	\$22,507	N/A	\$22,966	\$61,492	N/A	\$21,698	\$18,486	\$36,759	\$23,014	\$28,459	\$22,966	\$33,808	\$45,667	\$28,472	\$32,568	\$33,341	\$33,341
2017	\$15,607	\$23,785	\$36,780	\$23,250	\$65,657	N/A	\$21,958	\$18,983	\$37,131	\$22,506	\$27,128	\$23,518	\$36,956	\$51,644	\$29,461	\$32,838	\$30,538	\$32,838
2018	\$16,394	\$21,722	\$36,402	\$28,430	\$66,366	\$17,045	\$20,704	\$18,560	\$39,117	\$22,356	\$26,953	\$22,356	\$38,775	\$47,542	\$30,425	\$35,718	\$35,441	\$35,718

Source: ROAD308T (Efficiency)

Halton: Roads restoration costs, contracted services costs and road and bridges amortization increased due to Halton Region's continuous growth, new construction and roads rationalization.

London: Increase in 2018 expenditures due to some project contributions related to non-City owned assets.

Montreal: The higher cost can be attributed to investments in infrastructure and higher amortization costs.

## Winter Maintenance Policy Comparison:

Table B below provides summary of the comparison of winter maintenance policies of some municipalities in Western Canada. The table provides comparison of road network classification of different jurisdictions for the purpose of providing winter maintenance and brief information about major winter maintenance programs like road plowing, residential plowing, sidewalk plowing etc.

Table B: Summary of Winter Maintenance Policy LOS & Timelines for Different Cities in Western Canada

	Regina	Saskatoon	Edmonton	Calgary	Moose Jaw	Winnipeg
Facts	<b>Roadways:</b> 1100Km <b>Sidewalks</b> >1300 Km <b>Equipment:</b> Access to 30 graders, 16 sanding plow trucks, 8 sidewalk machines, 4 blowers, 4 loaders, 2 under body plow trucks, 32 dump trucks-semis/tandems <b>Budget:</b> 8.8 million (2019)	<b>Roadways:</b> 4000 lane Km <b>Sidewalks:</b> n/a <b>Equipment:</b> n/a <b>Budget:</b> 12.59 million (2017)	<b>Roadways:</b> 11,000 Km <b>Sidewalks:</b> 1,380 Km (walks & trails) <b>Equipment:</b> Access to 150 plows, 300 graders, 260 end dumps <b>Budget:</b> 65 million (2019)	<b>Roadways:</b> 16,000 lane Km <b>Sidewalks:</b> 2,000km (city), 4500km (private) <b>Equipment:</b> 27 graders, 74 tandem trucks with underbody plow, 18 tandems with front plow and 6 blowers <b>Budget:</b> 40.4 million (2019)	<b>Roadways:</b> 200 Km <b>Sidewalks:</b> 210 Km <b>Equipment:</b> n/a <b>Budget:</b> n/a	<b>Roadways:</b> 7200 Km <b>Sidewalks:</b> 3000 Km <b>Heavy equip:</b> 300 <b>Budget:</b> 30-40 million
Policy Document	Winter Maintenance Policy	Service Level for Snow and Ice Maintenance	Snow & Ice Control Policy	Snow & Ice Control Policy	Winter Maintenance Policy	Snow Clearing & Ice Control Policy
Road Classification	<b>Category 1 to 6</b>  <b>Category 1</b> Freeway, major arterials, designated hospital emergency route. <b>Category 2</b> Minor arterials, major collectors with traffic volumes > 5,000 vpd, downtown. <b>Category 3</b> Major collectors (traffic volumes < 5,000 vpd), industrial/ commercial roads, minor collector or major residential local roads on a designated transit or truck route. <b>Category 4</b> Minor collectors and major residential local roads leading into school bus unloading zones. <b>Category 5</b> Residential local roads <b>Category 6</b> Gravel roads.	<b>Priority 1 to 3</b>  <b>Priority 1:</b> Freeways, High-use roads, Emergency routes  <b>Priority 2:</b> Medium use roads & Transit routes  <b>Priority 3:</b> School zones, bus stops, downtown, business districts	<b>Priority I to 4</b>  <b>Priority1</b> <ul style="list-style-type: none"><li>- Freeways, Arterial roadways</li><li>- Business districts, Busways</li><li>- Bus stops adjacent to City property</li><li>- Prioritized sidewalks, trails and bike routes</li></ul> <b>Priority 2</b> <ul style="list-style-type: none"><li>- Collector/Bus Route Roadways, Transit Park and Ride access roads</li></ul> <b>Priority 3</b> <ul style="list-style-type: none"><li>- Local Industrial Roadways</li></ul> <b>Priority 4</b> <ul style="list-style-type: none"><li>- Residential Roadways, Alleys</li></ul>	<b>Priority I to 4</b>  <b>Priority 1</b> <ul style="list-style-type: none"><li>- Streets in Central business district with traffic volumes &gt; 8,000 vpd</li><li>- Designated routes on high-traffic-volume arterials (&gt; 20, 000 plus vpd).</li></ul> <b>Priority 2</b> <ul style="list-style-type: none"><li>- Designated streets 5,000 to 19,999 vpd</li><li>- Traffic lights and controlled crosswalks</li><li>- Designated emergency routes (adjacent to hospitals and police and fire stations)</li><li>- Roadways which facilitate marked, on-street bike lanes</li><li>- Problem areas</li></ul> <b>Priority 3</b> <ul style="list-style-type: none"><li>- Designated feeders, collectors and bus routes</li><li>- School and playground zones.</li><li>- Designated hills.</li><li>- Stop/yield signs.</li><li>- Bus stops.</li></ul> <b>Priority 4</b> <ul style="list-style-type: none"><li>- Residential areas at:</li></ul>	<b>Priority I to 6</b>  <b>Priority 1</b> <ul style="list-style-type: none"><li>- arterial roads</li><li>- emergency services buildings.</li></ul> <b>Priority 2</b> <ul style="list-style-type: none"><li>- bus routes</li></ul> <b>Priority 3</b> <ul style="list-style-type: none"><li>- remaining collector roads and areas with potential drainage issues.</li></ul> <b>Priority 4</b> <ul style="list-style-type: none"><li>- local collector routes</li></ul> <b>Priority 5</b> <ul style="list-style-type: none"><li>- all remaining roads</li></ul> <b>Priority 6</b> <ul style="list-style-type: none"><li>- parking lots.</li></ul>	<b>Priority 1 to 3</b>  <b>Priority 1</b> All Regional Streets, hospital route  <b>Priority 2</b> Non-regional bus routes and collector streets based on traffic counts, some streets in industrial areas  <b>Priority 3</b> Residential and/or little used industrial streets.



		Regina	Saskatoon	Edmonton	Calgary	Moose Jaw	Winnipeg
					<ul style="list-style-type: none"> <li>- School and playground zones</li> <li>- Designated hills</li> </ul>		
<b>Plow Triggers</b>	Arterials	5 cm	5 cm	-	5 cm	-	3 cm
	Collectors	5-10 cm	5 cm	-	5 cm	-	5 cm
	Residential	25 cm	15 cm	-	12 cm (using graders); 5 cm (plow trucks)	-	10 cm
<b>Plow Timelines</b>	Arterials & Collectors	PLOWED & SANDED in 60 Hours to Bare pavement	PLOWED & SANDED in 72Hours to Bare pavement	PLOWED & SANDED in 48Hours to Bare pavement	PLOWED & SANDED in 48Hours to Bare pavement	PLOWED & SANDED in 48Hours to Bare pavement	PLOWED & SANDED in 36Hours to Bare pavement
	Residential	Residential systematic plow timeline not specified. Typically completed in 12-14 days after snow event	Residential plow timeline not specified	completed within 7 days, commencing within 48 hours following the end of the snowfall.	completed within 4 days, commencing within 48 hours following the end of the snowfall.	<ul style="list-style-type: none"> <li>- maintained based on rutting and drainage</li> <li>- Residential streets are not normally completed as part of the Snow Management program</li> </ul>	The snow plowing operations shall be completed within five working days
<b>Sidewalk Policy</b>		Encouragement model	Enforcement model	Enforcement model	Enforcement model	-	City clears
<b>Transit Routes</b>		Category 3	Priority 2	Priority 2	Advanced priority when plowing	-	Advanced priority when plowing
<b>School Zones</b>		Snow removed completely from one side of school unloading zones	Snow removed completely from both sides of school unloading zones	Snow removed completely from both sides of school unloading zones	The policy document does not specifically mention details of the school zone snow clearing. The only reference about schools in the main policy comes under road classification.	-	Priority shall be given to remove snow from high piles located at intersections and lane entrances in the vicinity of elementary schools. (No mention of the pile height in policy document)

## Appendix D Road Network Reclassification

### Current Classification:

Based on the current Winter Maintenance Policy, the City of Regina roads including expressways, arterials, collectors, locals, gravel roads etc. are classified into six categories primarily based on the daily traffic volumes.

Category	Length Km	Timeline- Hour	Snowfall trigger- cm
<b>Category1:</b> Freeways/ Expressways including ramps and loops, major arterials, and any road on a designated hospital route	157	24	5
<b>Category2:</b> Minor arterial roads, major collector roads with traffic volumes greater than 5,000 vehicles per day (VPD) and all roads in the area referred to as Regina downtown	114	36	5
<b>Category3:</b> Major collector roads with traffic volumes less than 5,000 VPD, industrial/ commercial roads, and any minor collector or major residential local roads on a designated transit or truck route	178	48	10
<b>Category4:</b> Minor collector roads and major residential roads which lead into school bus unloading zones	59	60	10
<b>Category5:</b> Residential local roads	541	No	25
<b>Category6:</b> Gravel roads	47	60	10
Total	1096 Km		

**Concern:** Based on survey feedback, major roads like transit routes, high traffic residential roads, gravel roads getting lower level of service. In addition the road classification needed to be simplified.

**Recommended Classification:** Roads classified into 5 categories only

Category	Length Km	Expected Timeline- Hour	Snowfall trigger- cm
<b>Category 1:</b> Freeways/ Expressways, major arterials, roads on a designated hospital route	157	24	5
<b>Category 2:</b> Minor arterial roads, major collector roads with traffic volumes greater than 5,000 vehicles per day (VPD), transit routes, all roads in the area referred to as Regina downtown, and all bike lanes	204	36	5
<b>Category 3:</b> Major collector roads with traffic volumes less than 5,000 VPD, minor collector roads, industrial / commercial roads. Residential / local with traffic volume greater than 1500 VPD and roads which lead into school bus unloading zones.	156	48	5
<b>Category 4:</b> All gravel roads	47	60	5
<b>Category 5:</b> All local/ residential with traffic volume less than 1500 VPD	532	No	15
Total	1096 Km		

**CATEGORY 1:**

No changes in the road categorization for Category 1 roads. Levels of service remain the same as in the existing Policy.

**CATEGORY 2:**

Significant change in this category as all transit routes and bike lanes are added to this category. This would ensure enhanced level of service for transit routes and bike lanes in comparison with the existing policy.

**CATEGORY 3:**

Reclassification of the roads would allow all roads currently classified under existing policy as category 3 and 4 to be classified as category 3 roads. All residential / local roads with traffic volume greater than 1500 VPD would also be escalated to category 3, receiving an increased level of service. The Category 3 road network would include remaining collectors, roads in industrial and commercial zoning areas, roads leading to school bus unloading zones as well as all residential / local roads with traffic volume greater than 1500 VPD.

**CATEGORY 4:**

Gravel roads within City limits.

**CATEGORY 5:**

All residential roads with traffic volume less than 1500 VPD to be classified as category 5 roads.

**Cost of Enhancement:** As specified in Appendices E to M

**Advantages:**

- plowing all arterial and collector roads after a 5-centimetre event
- plowing residential roads after a 15-centimetre event
- transit routes and bike lanes upgraded to Category 2 roads or higher
- school unloading zones upgraded to a Category 3 road or higher
- residential roads with traffic volumes greater than 1500 VPD upgraded to a Category 3 road
- snow removal would take place on arterial and collector roads when lane widths and/or sightlines negatively impacted due to repeated plowing operations
- simpler classification

**Disadvantages:**

- None

## **Appendix E**

### **School Unloading Zones**

#### **Current Policy:**

The current Winter Maintenance Policy for snow clearing in front of schools specifies that snow ridges are removed when they exceed 30 centimeters in the School Bus Unloading Zone and exceed 75 centimeters on the remainder of the road adjacent to the school. However, there are no provisions for snow removal on the side of the road opposite of the school.

#### **Concern:**

Leaving snow ridges on the opposite side of the school hinders with the parking of the vehicles especially during pick-up and drop-off times. The snow ridges also pose as a safety hazard for children and others accessing the schools. The snow ridge on one side of the school may impact the road capacity in front of the schools.

Feedback from the survey, stakeholders and Service Requests suggested that snow ridges should be removed from both sides of the road after a snowfall and systematic plowing operations.

#### **Recommendation:**

Upgrade the road plowing classification of all school unloading zones to Category 3 or higher and remove the snow ridges completely on both sides of the road adjacent to a school after a systematic plowing event. Removal activity would be performed during off peak school hours.

#### **Cost of Enhancement:**

The cost for this enhancement is \$100,000 annually.

#### **Advantages:**

- snow ridge free school drop-off zones
- provide safer school unloading zones and would improve road capacity around schools
- no equipment on school zones between 8 am and 4 pm

#### **Disadvantages:**

- operational flexibility lost as maintenance work around schools would be restricted during daytime

## **Appendix F**

### **Transit Stop Accessibility**

#### **Current Policy:**

The current Winter Maintenance Policy for snow plowing on sidewalks includes maintaining sidewalks adjacent to City-owned parks and facilities, bridge decks and subways, and locations that do not have a property owner fronting the sidewalk.

Examples of the locations where City crews clear sidewalks:

- Adjacent to city owned buildings
- Adjacent to Bridge decks and subways
- Adjacent to Transit stops on the Heritage bus route
- Adjacent to No frontage locations on all Category streets
- Adjacent to Storm channel and railway crossings on Category 1 and 2 streets
- Adjacent to Vacant land on Category 1 and 2 streets
- Adjacent to city owned parks on Category 1, 2, 3, and 4 streets
- Adjacent to city owned parks that are next to a public school
- Adjacent to the General Hospital gateway (sidewalks both sides on 14th Avenue from Broad Street to the alley east of Halifax Street)
- Adjacent to Core Community Park (Quebec Street side)

Sow clearing on these sidewalks is triggered with the systematic plow and the target is to clear within three days following a winter storm.

#### **Concern:**

The above locations only represent a small percentage of sidewalks in the community, with most of the responsibility assigned to the property owners adjacent to the sidewalk.

There is a requirement for commercial properties to clear their sidewalk as outlined in *The Clean Property Bylaw*, however residential properties are not included. The City uses an encouragement approach rather than an enforcement approach to motivate residents to be a good neighbor and clear their sidewalks. Unfortunately, this does not always happen, and it creates accessibility challenges for users of the transit system when the pick-up and drop-off locations are not consistently cleared.

Feedback from the survey, Service Requests and engagement with stakeholders suggested that there was a need to significantly improve snow clearing efforts around transit stops. This is also in alignment with OCP goals of offering a range of year-round sustainable transportation choices for all, as well promoting active transportation.

It should be noted that this option would not be required if City Council opted to implement a Bylaw requiring all property owners to clear the sidewalk adjacent to their property.

#### **Recommendation:**

Plow all sidewalks adjacent to transit stops. This will mean plowing snow from approximately 160 kilometres of sidewalks with over 1400 transit stops all over the community. The complete stretch of the sidewalk with transit stop will be plowed for the entire block.

**Cost of Enhancement:**

The cost for this enhancement is \$339,000 annually

**Advantages:**

- improved accessibility of transit stops
- meet long standing request of stakeholders
- benefit community's aging demographics, persons with disabilities and accessibility challenges, transit users and pedestrians in general
- aligns with City's OCP/ TMP goals

**Disadvantage:**

- sidewalks not adjacent to the transit stops will not be cleared and there may be a negative perception that the City is clearing some residents sidewalks and not others
- does not address accessibility on the remaining sidewalk network

## **Appendix G**

### **Transit Route General Conditions**

#### **Current Policy:**

The current Winter Maintenance Policy states that all transit routes are to be classified as a Category 3 priority or higher. This means that during systematic plowing operations, many of the transit routes in the community can take up to 48 hours to complete after a snow event.

#### **Concern:**

Regina Transit needs clear and safe roads to carry out consistent service level commitments and schedules thereby elevating the role of public transit and optimizing the road network capacity. Regina transit routes cover a total of 650 km of the road network.

Regina Transit may be the primary mode of transportation for many residents after a snowfall. This may be especially true during a major snow event when major roads are cleared relatively quickly but residential roads take more time.

Feedback from Service Requests and internal stakeholders such as Regina Transit and Winter Maintenance staff suggest that transit routes should be classified as a higher priority and cleared faster.

#### **Recommendation:**

Upgrade the road plowing classification of all transit routes to Category 2 or higher. This will ensure the transit routes are plowed earlier and more frequently. Administration will also recommend frequent quality checks after maintenance work is completed at the end of each storm.

#### **Cost of Enhancement:**

There are no costs associated with this level of service enhancement and Administration will utilize existing tools and resources to implement this enhancement for the 2021/2022 season.

#### **Advantages:**

- elevates the role of public transit (OCP/ TMP Goal 2)
- enhanced level of service for transit routes
- reduced snow build-up on transit routes due to frequent plowing with 5 centimetres accumulation
- all transit routes will be plowed within 36 hours

#### **Disadvantages:**

- transit routes may change every season

## **Appendix H**

### **Residential Road General Conditions**

#### **Current Policy:**

The current policy classifies the residential roads as Category 5 roads and specifies that they are plowed after a snow event greater than 25 centimetres or when rutting exceeds ten centimetres. The City performs ice shaving activity to reduce ruts generally throughout the season to keep rutting to a minimum.

In the previous years, with more snowfall residential roads were generally plowed twice. However, in the last five years, on an average the residential plow was performed only once annually due to reduced amount of snowfall during this period. Currently the length of the residential road network is approximately 541 kilometres. The residential road network is almost half of the entire road network in the community. Plowing the residential roads comes with several challenges like parked cars and narrow streets.

#### **Concern:**

Feedback from the survey and Service Requests suggest that general satisfaction is low regarding snow clearing on residential roads.

#### **Recommendation:**

Administration is recommending that residential roads that are acting more as collector roads serving over 1500 vehicles per day be classified as a higher priority Category 3 roads and included in systematic plowing operations that starts with five centimetres snow accumulation.

In addition, Administration also recommends that residential roads be included in systematic plowing operations after snow events greater than 15 centimetres. Based on historical data, this will provide one additional residential plow during the season. The City will continue utilizing the Ice Shaving Program to maintain ruts and have discretion to plow all residential roads if there are unusual or extenuating circumstances during the winter.

#### **Cost of Enhancement:**

The cost for this enhancement is \$304,000 annually.

#### **Advantages:**

- all high traffic residential roads would get enhanced level of service
- significant improvement in general residential road conditions
- increased resident satisfaction during winter seasons
- rutting will be reduced
- more frequent ice control cycles and inspections on major residential roads
- changes in line with municipalities like Calgary, Edmonton

#### **Disadvantages:**

- increased cost
- snow ridges created as a result of plowing more often and reducing on-street parking availability



## **Appendix I**

### **Bike Lane General Conditions**

#### **Current Policy:**

The current Policy does not include any reference to bike lanes. Majority of the existing bike lanes are located on Category 1 or 2 roads; therefore, they are plowed within 36 hours of a snowfall event. There are some bike lanes located on Category 3 roads.

#### **Concerns:**

Feedback received from the survey and stakeholder engagement indicated that the bike lanes should get enhanced level of service including snow plowing and ice control in order to ensure safer winter biking conditions. The feedback also indicated that availability of ice, snow and slush especially during spring and shoulder season could become safety hazards for the bike lane users.

#### **Recommendation:**

To meet corporate goals of providing a range of year-round transportation choices and promote active transportation, all existing and future bike lanes will be classified as Category 2 or higher. With this, the bike lanes currently located on Category 3 roads would be upgraded to Category 2 or higher, as well as any bike lanes added to the network in the future.

The enhanced level of service will include plowing and ice control activities after a snowfall, as well as routine inspections to ensure ice, snow, and slush is cleared from the bike lane especially during spring and shoulder seasons.

#### **Cost of Enhancement:**

As most of the bike lanes are already located on higher priority roads, there are no costs associated with this enhancement. Routine inspections will be built into current inspection program.

#### **Advantages:**

- safer bike lanes
- supports City's Official Community Plan (OCP) goals # 1, 3, 4 and 5:
  - offer a range of year-round sustainable transportation choices for all
  - integrate transportation and land use planning in order to facilitate better walking, cycling and transit trips.
  - optimize road network capacity.
  - promote active transportation for healthier communities

#### **Disadvantages:**

- None

## **Appendix J**

### **Intersection Ice Control**

#### **Current Policy:**

The current Winter Maintenance Policy for ice control outlines minimum cycling times based on category during snow events and when slippery conditions are present. Sand and salt is placed on the road in advance of intersections, crosswalks, ramps and merge lanes, curves and adjacent to school properties. After a snowfall, ice control material is placed on the road up to 24 hours after systematic plowing operations have been completed.

#### **Concern:**

Frequent freeze thaw cycles during the season require special attention of the sanding crews as the pavement conditions can change significantly during the day or night. While 2019/ 2020 winter season saw 64 freeze thaw days, last five-year average was 71 freeze thaw days.

Feedback from the survey showed general satisfaction of ice control operations, however comments suggested a need to enhance ice control activities in the community especially around the busy intersections. Comments also suggested there could be better coordination between snow plowing and ice control activities.

#### **Recommendation:**

Enhancement of ice control at intersections through operational efficiency. This will include:

- categorizing intersections based on traffic volume and collision history and prioritizing ice control activities as required
- quicker response time to Service Requests and frequent inspections by supervisors
- implementing routes based on priority and classification for both ice control and plowing operations for greater consistency and for reducing the time delay between the coordinated activities.

#### **Cost of Enhancement:**

There is no cost associated with this level of service enhancement and Administration will utilize existing tools and resources to implement this enhancement for the 2021/2022 season.

#### **Advantages:**

- sustainable option that would continue providing safer driving conditions through future seasons
- low implementation cost
- routing plan can include both ice control and plowing activity for a better coordinated maintenance activity
- categorization of intersections would ensure safer winter driving conditions by prioritizing ice control activities on high traffic and high-risk intersections
- improved safety and satisfaction of intersection users like drivers and pedestrians
- reduced claims due to less collision

#### **Disadvantages:**

- None

## **Appendix K**

### **Snow removal on Category 1-3 Roads**

#### **Current Policy:**

The current Winter Maintenance Policy specifies that snow removal will generally take place when snow ridges impact sight lines and lane widths on Category 1 and 2 roads, as well as Category 3 Transit routes.

#### **Concern:**

After each snow event greater than five centimetres, a systematic plow is completed and snow is plowed and placed in the parking lanes and centre medians. As the season progresses, snow ridges become higher and wider with each plow and snow storage capacity is reduced and sight lines become negatively affected as motorists cannot see around or over the snow ridge. In addition, lane widths become narrow as the snow ridge becomes wider and, causing traffic congestion and unsafe driving conditions.

Feedback from the survey indicated that the snow removal activities should be further enhanced on major roads after each systematic plow. Removing the snow from all arterial and collector roads that are plowed after each five-centimeter snow event would provide safer winter driving conditions by improving road capacity and visibility.

#### **Recommendation:**

Remove snow on all Category 1, 2, 3 roads when sightlines and lane widths are impacted.

#### **Cost of Enhancement:**

There is no cost associated with this level of service enhancement as Administration has gained efficiencies in snow removal operations in the last few years and has typically performed this work out of necessity. Administration will utilize existing tools and resources to implement this enhancement.

#### **Advantages:**

- safer driving conditions on major roads
- increased visibility at intersections
- maintain regular traffic flow

#### **Disadvantages:**

- None

## Appendix B

### Operational Policy

Policy Title:		Applies to:		Reference #
Winter Maintenance Policy		Roadways & Transportation		###-XXX-##
Authority		Dates:		Total # of Pages
City Council		Effective:	01-NOV-2021	24
		Last Review:	dd-mmm-yyyy	
		Next Review:	dd-mmm-yyyy	
Alignment with Corporate Direction	The Policy supports the Transportation Master Plan (TMP) and <i>Design Regina: The Official Community Plan</i> (OCP), specifically:			
	<p><i>OCP Section D3, Transportation:</i></p> <ul style="list-style-type: none"><li>• <i>Goal 1 – Sustainable Transportation Choices; Offer a range of year-round sustainable transportation choices for all, including a complete street framework.</i></li><li>• <i>Goal 2 – Public Transit; Elevate the role of public transit.</i></li><li>• <i>Goal 3 – Integrated Transportation and Land Use Planning; Integrate transportation and land-use planning in order to better facilitate walking, cycling, and transit trips.</i></li><li>• <i>Goal 4 – Road network Capacity; Optimize road network capacity.</i></li><li>• <i>Goal 5 – Active Transportation; Promote active transportation for healthier communities</i></li></ul> <p>The Policy supports City Council's resolution to continue providing winter maintenance that effectively supports the health, attractiveness, and economic viability of our community.</p>			
Other Guiding Documents	<ul style="list-style-type: none"><li>• City of Regina VISION statement</li><li>• City of Regina Strategic Plan (2018-2021)</li><li>• Customer Level of Service (CLOS) FOR Winter Maintenance (2021-2022). See Appendix C</li><li>• City of Regina Salt Management Plan (2021-2022)</li><li>• <i>The Clean Property Bylaw</i> (No. 9881)</li><li>• <i>The Regina Traffic Bylaw, 1997</i> (No. 9900)</li><li>• City of Regina Transit Routes (Ongoing)</li></ul>			

#### 1.0 Purpose

The purpose of the Winter Maintenance Program is to provide winter maintenance that effectively supports the health, safety, attractiveness, and economic viability of this community. This policy provides an overview of guidelines for the Winter Maintenance Program. Both the policy and program are intended to be complimentary with the City of Regina's (City) Salt Management Plan.

## 2.0 Scope

The scope of the Winter Maintenance Program and Policy includes public right of way assets involving streets, sidewalks, bicycles only lanes, alleys and easements.

The scope of the Winter Maintenance Program and Policy does not include the following public and private property or right of way assets that are located within City limits:

- a) in City parks and open spaces
- b) on City facilities and properties or on properties that are controlled by the City
- c) in the F.W. Hill Mall
- d) sidewalks that are property owner's responsibility to clear in accordance with *The Clean Property Bylaw*
- e) on properties controlled by the Provincial Capital Commission
- f) are the responsibility of the Ministry of Highways
- g) on private roads, sidewalks, facilities, or properties

The Winter Road Maintenance Program includes following general activities:

- a) snow plowing of streets, roads, alleys, bicycles only lanes and sidewalks
- b) ice control of streets, roads, alleys, bicycles only lanes and sidewalks
- c) snow removal
- d) snow storage
- e) opening catch basins
- f) success indicators, monitoring, documentation and reporting

## 3.0 Definitions

*Alley* – means a public highway intended primarily to give vehicles access to the rear or side of real property.

*Bicycles only lane* - means that portion of a longitudinal division of a highway that is designated for bicycles only by the *Traffic Bylaw* and is indicated through signs and/or pavement markings as being for bicycles only.

*Business Day* - means a working day of the week (Monday to Friday) with working hours of 8:00 a.m. to 4:45 p.m.

*Downtown* - means the area of the city of Regina bounded by Victoria Avenue to the south, Albert Street to the west, Saskatchewan Drive to the north and Broad Street to the east, including the sidewalks and boulevard on both sides of those streets;

*Ice Control* – the application of aggregate abrasives and/or chemicals to a driving or walking surface to improve traction.

*Parking lane*- means that portion of longitudinal division of a highway of sufficient width to accommodate the storage of a single line of vehicles adjacent to the curb and where parking is permitted.

*Public highway*- means a street, alley or other road designed and intended for or used by the general public for the passage of vehicles, but does not include any privately or publicly owned area primarily intended to be used for the parking of vehicles and the necessary passageways on that area;

*Plow Snow (for Alleys)* – the pushing of accumulated snow from the centreline of the alley surface, leaving snow ridges on each side, such that one vehicle width is provided.

*Plow Snow (for Roads)* - the pushing of accumulated snow from driving or parking lanes. The resulting snow ridges may be stored in centre medians or in parking lanes adjacent to the curb.

*Plow Snow (for Sidewalks)* – the pushing of accumulated snow from the sidewalk surface, resulting in a compacted snow walking surface, leaving snow ridges on both sides of the sidewalk.

*Road*- means a thoroughfare or a street intended for the use by vehicles. Roads may be paved or gravel. Roads provide passage and parking for vehicles as per instructions on the displayed traffic signs.

*Roadway* - that portion of the street set aside for the specific use of the general public for the passage of vehicles but does not include any privately or publicly owned area primarily intended to be used for the parking of vehicles and the necessary passageways on that area.

*Road Categories for Systematic Plowing and Ice Control* – every road segment within the entire road network is classified into one of five categories which are defined as follows:

<b>Category 1</b>	<ul style="list-style-type: none"> <li>• freeways/expressways</li> <li>• major arterials</li> <li>• Roads on a designated hospital route</li> </ul>
<b>Category 2</b>	<ul style="list-style-type: none"> <li>• Minor arterial roads, major collector roads with traffic volumes greater than 5,000 vehicles per day (VPD)</li> <li>• transit routes</li> <li>• all roads in Downtown</li> <li>• all bicycles only lanes (bicycles only lanes)</li> </ul>
<b>Category 3</b>	<ul style="list-style-type: none"> <li>• Major collector roads with traffic volumes less than 5,000 VPD, minor collector roads</li> <li>• industrial/commercial roads</li> <li>• residential/local roads with traffic volume greater than 1,500 VPD</li> </ul>

	<ul style="list-style-type: none"> <li>roads adjacent to School Drop-off Zones</li> </ul>
<b>Category 4</b>	All gravel roads
<b>Category 5</b>	All local/residential roads with traffic volume less than 1,500 VPD

*Routine-Mode Maintenance*- refers to the post snow event cleanup including plowing and ice control as required, on the road network or sidewalks to establish seasonal driving or walking conditions and to correct deficiencies resulting from cumulative light snow events, spot drifting, or traffic effects and prepare for future snow events during the season. There are no timelines associated with Routine-Mode with maintaining the road network to Seasonal Driving Conditions, correcting deficiencies and preparing for future Snow Events.

*Salt Management Plan* – the most recent version of the City’s plan developed in accordance with Environment Canada’s “Code of Practice for the Environmental Management of Road Salts”.

*Sandbox Program*- The City provides free sand/salt mix for Regina residents to apply to icy sidewalks throughout the winter to help residents increase safety for pedestrians by applying the mix to sidewalks. This program is for individual residents and not for contractors.

*School Drop-off Zone*- pick-up or drop-off location as marked at the entrance of schools.

*School Zone*- as defined in *The Regina Traffic Bylaw, 1997 Section 10(1)(b)*.

*Seasonal Winter Driving Conditions*- are those conditions identified in Appendix D, Winter Conditions Terminology to this Policy.

*Sidewalk* – means the actual sidewalk where constructed on or adjacent to a part of a public highway or that portion of a public highway intended primarily for use by pedestrians or any structure in a park or other public place designed and intended for use by pedestrians.

*Snow Event* – a combination of snow, rain, freezing rain or wind, or other weather conditions causing snow or ice to accumulate on driving or walking surfaces or that have a similar effect on road surfaces. The end of a Snow Event is when precipitation or weather conditions no longer accumulates on road or sidewalk surfaces for a sufficient period of time to allow complete systematic plowing and ice control to be completed as specified in this Policy.

*Snow Removal* – refers to the reducing or clearing away of snow ridges or piles.

*Snow Ridge* – the row of excess snow formed by plowing roads, alleys, or sidewalks. *Snow ridges up to 30 centimetres height may be left across driveways, intersections, alleys and signed unloading zones after the plow.*

*Snow Routes* -refer to the designated route including specific road network and streets where a 24-hour parking ban is implemented in order to keep traffic moving and expedite snow plowing after heavy snowfall. Minimum eight hour notification is provided to residents and businesses by adopting multiple communication channels. Details about the Snow Route Program are available on [Regina.ca/snowroutes](http://Regina.ca/snowroutes).

*Storm Mode Maintenance*- refers to plowing and ice control (as required) of streets, roads, alleys or sidewalks when the snow event is still in progress.

*Street* - means that portion of a public highway lying between curbs where constructed and intended primarily for use by vehicles, or where no curb exists, that portion of a public highway intended for use by vehicles;

*Systematic Ice Control* - refers to a methodical approach taken to complete one ice control or sanding cycle on the road network or sidewalks as specified in this Policy following the end of a Snow Event or freezing rain.

*Systematic Mode Maintenance*- refers to performing Systematic Plowing and Systematic Ice Control activities during winter season.

*Systematic Plowing*– refers to a methodical approach taken to complete one plowing cycle on the road network or sidewalks as specified in this Policy following the end of a Snow Event.

*Transit Stop*- refers to the marked locations in the city where City buses stop to load or unload passengers utilizing City's conventional transit system.

*Typical Winter* –refers to the typical weather conditions for Regina based on the past five winter seasons between October and April time period, and includes all or one or more of the following parameters:

- (a) average snow fall amounts
- (b) average number of snow days with greater than two centimetres Snow Event
- (c) average number of freeze thaw days during the season
- (d) average monthly temperatures ranging
- (e) high wind speeds on several days in a season causing drifting or blowing snow conditions

*Weather Authority* - means the federal, provincial or local weather source that the City uses to determine weather related measurements or conditions for the purpose of this Policy and includes but is not limited to Environment Canada and other professional weather forecasting models and services as the City considers appropriate and reliable.



## 4.0 Policy

### 4.1 General

The performance and end condition objectives outlined by this policy include the following underlying assumptions:

- a) That operational activities are being undertaken during a typical weather event, during a Typical Winter season. The City acknowledges that Regina may be subject to extreme or extraordinary weather which may diminish the City ability to achieve the policy objectives within the targeted time frames.
- b) The activities detailed herein attempt to reduce hazardous pavement conditions including road, sidewalk and alley surfaces caused by winter weather; however, the City acknowledges that weather conditions are beyond the City's control and dangerous conditions may nonetheless result despite the City's adherence to the Policy.
- c) The City's decisions and measurements relating to weather conditions in this Policy will be based on collective information the City obtains from various Weather Authority sources like Government of Canada's Weather, Climate and Hazards related services, weather forecasting professionals (agencies) and actual field conditions.
- d) That road safety is a cooperative activity between users of the roadways and the City. The City expects that users of the roadways will exercise reasonable care for their own safety and the safety of others when travelling on the road during winter conditions.

When weather conditions become so severe as determined by Manager, Roadways Seasonal Operations or their designate that the City's winter maintenance operations cannot continue without compromising public and/or employee safety, then temporary road closures may be implemented. The Manager of Roadways Seasonal Operations, or their designate, makes the decision to temporarily close a road. When this occurs, City's Dispatch Office shall contact:

- City Manager's Office
- Communications & Engagement department
- Emergency Planning and Business Continuity Branch (EP&BC)
- Fire, Police, and Emergency Medical Services
- Traffic Operations branch

### 4.2 Levels of Service

<b>Objective 1</b>	Roads are made passable for emergency (fire, police, ambulance) response vehicles.
<b>Objective 2</b>	Seasonal winter driving conditions on roads and intersections are provided on key routes through Systematic Plowing and ice control operations.

<b>Objective 3</b>	Sidewalks access is provided on specific City-maintained sidewalk locations through systematic sidewalk snow plowing and ice control operations.
<b>Objective 4</b>	Access is provided in all alleys for the solid waste and recycling collection, utility companies and residents.
<b>Objective 5</b>	Safety and travel efficiency is ensured through the plowing and removal of snow ridges from in front of guardrails and off of bridge decks.
<b>Objective 6</b>	Seasonal winter driving conditions are maintained through snow removal operations.
<b>Objective 7</b>	A snow storage facility is available during the peak winter season for businesses, residents and City crews to store a <sup>1</sup> reasonable amount of snow brought from private and public properties.
<b>Objective 8</b>	School zones are safe during winter.
<b>Objective 9</b>	Flooding conditions caused due to snow and ice melt are mitigated by providing catch basins opening service and by creating drainage channels during spring season as required.
<b>Objective 10</b>	Seasonal winter biking conditions are provided on bicycles only lanes through Systematic Plowing and ice control operations.
<b>Objective 11</b>	Transit stops are accessible
<b>Objective 12</b>	City roads along fields and open areas are accessible for emergency response vehicles, transit, and other City services by creating snow ridges where possible.
<b>Objective 13</b>	Availability of free sand for residents is improved to help mitigate icy sidewalk conditions by expanding the Sandbox Program citywide
<b>Objective 14</b>	Effectiveness of snow-plow operation are improved by temporarily removing parked cars through the Snow Routes Program.

### 4.3 Communication Plan

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<sup>1</sup> Factors like weather conditions and overall safety at the snow storage site will decide what would be the 'reasonable' amount of snow that can be stored safely every season. Unsafe conditions due to factors like frequent freeze thaw conditions may force City to shut the snow storage site during middle of the season.

The Manager of Roadway Seasonal Operations or their designate shall work with Communications & Engagement to create a communication plan to clearly outline the level of service to be expected by residents leading into the winter season and throughout the winter season as required.

## 5.0 Roles & Responsibilities

This Policy is established by City Council.

The Manager of Roadways Seasonal Operations is responsible for the day-to-day operation and coordination of the Roadway Seasonal Operation's Winter Maintenance Program.

## 6.0 Reference Material

- City of Regina Salt Management Plan
- *The Clean Property Bylaw*, No. 9881
- *The Regina Traffic Bylaw*, 1997, No. 9900

## 7.0 Revision History

Date	Description of Change	(Re)-Approval Required (y/n)
dd-mmm-yyyy	Initial Release.	Yes

**Appendix A (of Appendix B)**  
**Winter Maintenance Policy- Level of Service (LOS)**

LOS Objective	Measures	Attribute	Goal	Data Source	Data Owner	Seasonal Monitoring Tools	Documentation & Reporting
	ROADS						
<b>Objective 1</b> Roads are made passable for emergency (fire, police, ambulance) response vehicles.	<b>All Roads:</b>  Level of Service <ul style="list-style-type: none"><li>Roads will be made passable for emergency response vehicles</li><li>Storm Mode Maintenance will be provided</li><li>When severe snow event occurs, operational focus would be to establish and maintain passability on these roads</li></ul>	Accessibility, Health & Safety, Legislative	All Road Categories (1-5): <ul style="list-style-type: none"><li>Requests by the emergency response vehicles to make any route passable are attended on top priority</li></ul>	<ul style="list-style-type: none"><li>Site inspections</li><li>Service requests</li><li>Daily shift supervisor's Plow &amp; Ice Control Report</li><li>Feedback from City's Operations staff, Regina Police Services, Emergency Medical Services (Saskatchewan Health Authority), Fire and Protective Services</li></ul>	Seasonal Roadways Operations, Regina Police Services, Emergency Medical Services (Saskatchewan Health Authority), Fire and Protective Services	<ul style="list-style-type: none"><li>Number of service requests</li><li>Telematics data</li><li>Plow/ ice-control/ snow Removal lists</li></ul>	<ul style="list-style-type: none"><li>Annual Winter Maintenance Summary Report to Council,</li><li>Post -Snow Event Report to key stakeholders</li></ul>
<b>Objective 2</b> Seasonal Winter Driving Conditions on roads and intersections are provided on key routes through Systematic Plowing and Ice Control operations.	<b>Category 1 Roads:</b>  Targeted timeline to complete Systematic Plowing and Systematic Ice Control: <ul style="list-style-type: none"><li>Within 24 hours of end of Snow Event with 5 cm or more snow accumulation</li></ul> Level of Service: <ul style="list-style-type: none"><li>Snow ridges will be reduced</li><li>Snow ridges will be left around parked vehicles</li><li>Driving lanes and designated turning lanes will be plowed</li></ul> Routine Mode Maintenance: <ul style="list-style-type: none"><li>Post snow event clean-up will be completed within seven days following Systematic Plowing competition</li></ul> <b>Category 2 Roads:</b>  Targeted timeline to complete Systematic Plowing and Systematic Ice Control: <ul style="list-style-type: none"><li>Is within 36 hours of end of Snow Event with 5 cm or more snow accumulation</li></ul> Level of Service <ul style="list-style-type: none"><li>Snow ridges will be reduced</li><li>Snow ridges will be left around parked vehicles</li></ul>	Accessibility, Health & Safety, Legislative	All Road Categories (1-5): <ul style="list-style-type: none"><li>Ensure all Levels of Service mentioned under 'Measures' are met consistently on Category 1-5 roads during the season and Seasonal Winter Driving Conditions are restored within specified timelines for respective road category</li><li>Reasons for any deviations from the goal are analysed and reported</li></ul>	<ul style="list-style-type: none"><li>Site inspections</li><li>Service requests</li><li>Daily shift supervisor's Plow &amp; Ice Control Report</li><li>Feedback from City Transit Operations staff</li></ul>	Seasonal Roadways Operations	<ul style="list-style-type: none"><li>Number of service requests,</li><li>Telematics data</li><li>Plow/ ice-control/ snow Removal lists</li></ul>	<ul style="list-style-type: none"><li>Annual Winter Maintenance Summary Report to Council</li><li>Post -Snow Event Report to key stakeholders</li></ul>

<div><ul style="list-style-type: none"><li>• Driving lanes and designated turning lanes will be plowed</li></ul><p>Routine Mode Maintenance:</p><ul style="list-style-type: none"><li>• Post snow event clean-up will be completed within seven days following Systematic Plowing competition</li></ul><p><b><u>Category 3 Roads:</u></b></p><p>Targeted timeline to complete Systematic Plowing and Ice Control:</p><ul style="list-style-type: none"><li>• Is within 48 hours of end of Snow Event with 5 cm or more snow accumulation</li></ul><p>Level of Service</p><ul style="list-style-type: none"><li>• Snow ridges will be reduced</li><li>• Snow ridges will be left around parked vehicles</li><li>• Driving lanes and designated turning lanes will be plowed</li></ul><p>Routine Mode Maintenance:</p><ul style="list-style-type: none"><li>• Post snow event clean-up will be completed within 14 days following Systematic Plowing competition</li></ul><p><b><u>Category 4 Roads:</u></b></p><p>Targeted timeline to complete Systematic Plowing:</p><ul style="list-style-type: none"><li>• Is within 60 hours of end of Snow Event with 5 cm or more snow accumulation</li></ul><p>Level of Service</p><ul style="list-style-type: none"><li>• Snow ridges will be reduced</li><li>• Snow ridges will be left around parked vehicles</li><li>• Driving lanes and designated turning lanes will be plowed</li><li>• Roads will be plowed to a compacted snow surface</li></ul><p>Routine Mode Maintenance:</p><ul style="list-style-type: none"><li>• Post snow event clean-up will be completed within 14 days following Systematic Plowing competition</li></ul><p><b><u>Category 5 Roads:</u></b></p><p>Residential snow plowing activity is triggered by:</p><ul style="list-style-type: none"><li>• 15 cm or more snow accumulation after a Snow Event</li><li>• No specific Timeline to complete plowing and ice control activity on local/ residential roads</li></ul><p>Level of Service:</p><ul style="list-style-type: none"><li>• The ice control on residential roads is based on Field Supervisor inspection</li><li>• Driving lanes and Turning lanes to be plowed to compacted snow surface</li></ul></div>						
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	<ul style="list-style-type: none"><li>Rut heights to be reduced as required during the season based on Field Supervisor inspection.</li></ul> <p>Routine Mode Maintenance:</p> <ul style="list-style-type: none"><li>Post snow event clean-up will be completed within 21 days following Systematic Plowing competition</li></ul> <p><b>Note:</b> Systematic Road Plowing operations may also be triggered in other circumstances where there are several snow accumulations of less than 5 cm, and the Manger of Roadways Seasonal Operations will make the determination to call a systematic response if warranted.</p>						
<b>Objective 3</b> Sidewalks access is provided on specific City-maintained sidewalk locations through systematic sidewalk Snow Plowing and Ice Control operations.	<p>The City will make all City maintained sidewalks, that are typically adjacent to City owned properties, accessible for pedestrians as per details mentioned below:</p> <p>Level of Service:</p> <ul style="list-style-type: none"><li>Systematic Plowing for sidewalk operations will be triggered by 5 cm snow accumulations during a single Snow Event</li><li>Targeted timeline to plow sidewalks is within 48 hours after the end of Snow Event. Sidewalk locations in Schedule B- Downtown will be plowed within 24 hours</li><li>Sidewalk will be sanded after completion of plowing activity as required and as determined by the Field Supervisor</li></ul>	Accessibility, Customer Service, Health & Safety, Legislative	<ul style="list-style-type: none"><li>Ensure all Levels of Service mentioned under ‘Measures’ are met consistently on all City-maintained sidewalks during the season and Seasonal Winter Walking conditions are restored within specified timelines</li><li>Reasons for any deviations from the goal are analysed and reported</li></ul>	<ul style="list-style-type: none"><li>Service requests</li><li>Feedback from Operations staff</li><li>Daily shift supervisor's Sidewalk Maintenance Report</li><li>Enforcement data</li></ul>	Facilities Services, Parks & Open Space, Seasonal Roadways Operations, Bylaw Enforcement	<ul style="list-style-type: none"><li>Number of service requests,</li><li>Telematics data</li><li>Plow/ ice-control/ snow Removal lists</li></ul>	<ul style="list-style-type: none"><li>Annual Winter Maintenance Summary Report to Council</li><li>Post -Snow Event Report to key stakeholders</li></ul>
<b>Objective 4</b> Access is provided in all alleys for the solid waste and recycling collection, utility companies and residents.	<p>Alleys will be made passable for the collection of solid waste and access by utility companies and the public during the season. Ice control would be provided only as required.</p> <p>When 15 cm snow accumulation in a single Snow Event occurs then the City will Systematically Plow the alley network within 96 Hours of such Snow Event.</p> <p>Level of Service:</p> <ul style="list-style-type: none"><li>Single vehicle passage width would be provided on a compacted snow surface</li><li>Rut heights to be reduced as required during the season based on Field Supervisor inspection</li><li>Ice control would be provided as required on spot sections at the alley exit points and on grades exceeding 5%, based on Field Supervisor inspection</li><li>Snow ridges may be formed on both sides of the plowed surface and are not reduced in height across garages, driveways, or parking lot entrances</li><li>Driving lanes and Turning lanes to be plowed to compacted snow surface</li></ul>	Accessibility, Customer Service, Health & Safety	<ul style="list-style-type: none"><li>Ensure all Levels of Service mentioned under ‘Measures’ are met consistently for City’s alley network during the season</li><li>All requests relating to solid waste and recycling collection, and utility companies’ priorities are attended based on mutually agreed timelines</li><li>Reasons for any deviations from the goal are analysed and reported</li></ul>	<ul style="list-style-type: none"><li>Residential Plow lists/ maps</li><li>Trouble spots</li><li>Daily Shift-Supervisor's Report</li></ul>	Seasonal Roadways Operations	<ul style="list-style-type: none"><li>Number of service requests,</li><li>Telematics data,</li><li>Alley maintenance lists</li></ul>	<ul style="list-style-type: none"><li>Annual Winter Maintenance Summary Report to Council</li><li>Post -Snow Event Report to key stakeholders</li></ul>

<p><b>Objective 5:</b> Safety and travel efficiency are ensured through the plowing and removal of Snow Ridges from in front of guardrails and off of bridge decks.</p>	<p>As part of Routine Mode Maintenance, safety and travel efficiency will be improved through snow plowing and snow removal activities in front of guardrails, subways and bridge-decks all over the city.</p> <p>Level of Service:</p> <ul style="list-style-type: none"> <li>Safety and travel efficiency will be improved</li> <li>Excessive amount of snow in front of guardrails, subways and bridge decks will be removed</li> </ul>	<p>Accessibility, Health &amp; Safety, Legislative</p>	<ul style="list-style-type: none"> <li>All guardrails and bridge deck locations in the city are plowed and removed as required as part of Routine Mode Maintenance</li> <li>Plow and removal activity during the season is consistently validated through field inspection</li> <li>Reasons for any deviations from the goal are analysed and reported</li> </ul>	<ul style="list-style-type: none"> <li>Service requests</li> <li>Parks pathways/ walkways lists</li> <li>Feedback from Parks Operations Staff</li> <li>Daily Shift Supervisor's Plow Report</li> </ul>	<p>Seasonal Roadways Operations</p>	<ul style="list-style-type: none"> <li>Number of service requests</li> <li>Telematics data</li> <li>Plow/ Ice-control/ snow removal lists</li> </ul>	<ul style="list-style-type: none"> <li>Annual Winter Maintenance Summary Report to Council</li> <li>Post -Snow Event Report to key stakeholders</li> </ul>
<p><b>Objective 6:</b> Seasonal Winter Driving Conditions are maintained through Snow Removal operations.</p>	<p>Snow Ridges will be removed where they impact street, lane, travel widths or sight lines as determined by City staff on all Category 1 to 3 roads. Snow Removal would generally involve loading and hauling of snow off site.</p> <p>Level of Service:</p> <ul style="list-style-type: none"> <li>Snow Ridges will be reduced to a maximum height of 30 cm across driveways and intersections</li> <li>Snow Ridges of any height would be removed from Accessible Parking Meter stalls within 24 hours of Systematic Plowing</li> <li>Snow Ridges of any height would be removed from between signed accessibility parking spots.</li> <li>Snow Ridges would be removed from both sides of the School Drop-off Zones</li> <li>Snow Ridges would be removed at Transit stops.</li> <li>Snow Ridges of any height may be left around parked vehicles</li> <li>Snow Ridges in downtown metered parking stalls will be removed within 48 hours of Systematic Plow</li> </ul>	<p>Legislative, Accessibility, Health &amp; Safety</p>	<ul style="list-style-type: none"> <li>Snow removal activity completed on all identified locations as per the level of service mentioned under 'Measures'</li> <li>Reasons for any deviations from the goal are analysed and reported</li> </ul>	<ul style="list-style-type: none"> <li>Site inspections</li> <li>Service requests</li> <li>Daily shift supervisor's Snow Removal report</li> <li>Feedback from stakeholders like Regina Police Service, Transit Operations staff, Regina Downtown Business Improvement District (RDBID)</li> </ul>	<p>Seasonal Roadways Operations</p>	<ul style="list-style-type: none"> <li>Number of service requests</li> <li>Telematics data</li> <li>Snow removal lists</li> <li>Contractor tickets for contracted trucks</li> </ul>	<ul style="list-style-type: none"> <li>Annual Winter Maintenance Summary Report to Council</li> <li>Post -Snow Event Report to key stakeholders</li> </ul>
<p><b>Objective 7:</b> A snow storage facility is available during the peak winter season for businesses, residents and City crews to store a <sup>2</sup>reasonable amount of snow brought from private and public properties.</p>	<p>City owned and managed snow storage facility will be provided throughout the season to systematically store snow hauled by private contractors, residents and City crews.</p> <p>Level of Service:</p> <ul style="list-style-type: none"> <li>Number of days the snow storage site was open for public and businesses in a season</li> <li>Number of safety concerns reported/ resolved in a season.</li> <li>Number of Service Requests complaints received</li> <li>Percentage of Cost recovered from private snow haulers as part of the Snow Storage Site user fee</li> </ul>	<p>Customer Service, Sustainability, Environmental Stewardship, Accessibility</p>	<ul style="list-style-type: none"> <li>Snow storage site open 24 hours a day 7 days a week throughout the season, weather permitting</li> <li>Safety not compromised through regulated traffic flow, adequate lighting, adequate signage and well-maintained roads Daily tail-gate talks, immediate review of any safety concerns and creation of a corrective action plan to mitigate any safety related concerns for future</li> <li>Approximately 60% of the cost to operate the Snow Storage Site is recovered to cover the cost of</li> </ul>	<ul style="list-style-type: none"> <li>Service requests</li> <li>OnGuard reports</li> <li>Monthly revenue</li> </ul>	<p>Seasonal Roadways Operations</p>	<ul style="list-style-type: none"> <li>Number of service requests</li> <li>Snow Storage Site seasonal opening and closing dates</li> <li>OnGuard reports based on RFID data</li> <li>Contractor tickets for contracted trucks</li> <li>Daily Activity Report, Daily</li> </ul>	<ul style="list-style-type: none"> <li>Annual Winter Maintenance Summary Report to Council</li> <li>Post -Snow Event Report to key stakeholders</li> <li>OnGuard Report for Snow Storage Site transactions</li> </ul>

<sup>2</sup> Factors like weather conditions and overall safety at the snow storage site would decide what would be the 'reasonable' amount of snow that can be stored safely every season. Unsafe conditions due to factors like frequent freeze thaw conditions may force City to shut the snow storage site during middle of the season.

			storing snow brought by private contractors and haulers (as per City’s Official Community Plan OCP guidelines) <ul style="list-style-type: none"><li>Reasons for any deviations from the goal are analysed and reported</li></ul>			Tailgate Talk Report	
<b>Objective 8:</b> School Zones are safe during winter	Snow Removal activity around School Drop-off Zones is enhanced on both sides of the road, after completion of a Systematic Plow following a Snow Event.  Level of Service: <ul style="list-style-type: none"><li>Snow Ridges of any height would be removed from both sides of the School Drop-off Zones within 72 hours</li></ul>	Legislative, Health & Safety	<ul style="list-style-type: none"><li>Ensure the Level of Service mentioned under ‘Measures’ met consistently for the School Drop-off Zones during the season</li><li>Reasons for any deviations from the goal are analysed and reported</li></ul>	<ul style="list-style-type: none"><li>Dispatch calls</li><li>Service requests</li><li>Calls from Emergency Response Management teams</li></ul>	Seasonal Roadways Operations	<ul style="list-style-type: none"><li>Number of service requests</li><li>Telematics data</li><li>Contractor tickets for contracted trucks</li><li>Removal-tracking Lists</li><li>Feedback from school boards</li></ul>	<ul style="list-style-type: none"><li>Annual Winter Maintenance Summary Report to Council</li><li>Post -Snow Event Report to key stakeholders</li></ul>
<b>Objective 9:</b> Flooding conditions caused due to snow and ice melt are mitigated by providing catch basins opening service and by creating drainage channels during or before the onset of spring season as required.	Catch basin opening activity along the entire road network and creation of drainage channels in open areas as required to mitigate flooding conditions and manage drainage issues.  Level of Service: <ul style="list-style-type: none"><li>Snow and ice build-up from the surface of the catch basins is removed using equipment and hand crew during spring season as required</li><li>Drainage channels are created before the onset of spring season in open areas adjacent to vulnerable areas as required</li><li>Above activities may require deploying multiple crews and equipment towards the end of the winter season based on weather and field inspections</li></ul>	Accessibility, Health & Safety, Legislative	<ul style="list-style-type: none"><li>All blocked catch basins due to snow and ice are opened as required during spring to improve drainage and mitigate flooding situations citywide</li><li>Field inspections carried out to confirm all catch basins are providing drainage of snow and ice melt successfully</li><li>Field inspections carried out to identify vulnerable open areas based on the amount of snow and create drainage channels on identified locations, as required</li><li>Reasons for any deviations from the goal are analysed and reported</li></ul>	<ul style="list-style-type: none"><li>Field inspections</li><li>Service requests</li><li>Daily shift supervisor's Activity Report</li></ul>	Seasonal Roadways Operations	<ul style="list-style-type: none"><li>Number of service requests</li><li>Catch basin sector maps</li></ul>	<ul style="list-style-type: none"><li>Annual Winter Maintenance Summary Report to Council</li><li>Post -Snow Event Report to key stakeholders</li></ul>
<b>Objective 10:</b> Seasonal Winter Biking conditions are provided on Bicycles Only Lanes through Systematic Plowing and Ice Control operations.	Bicycles only lanes would be plowed, sanded and snow removed based on the road category as well as based on field inspection findings.  Level of Service: <ul style="list-style-type: none"><li>Since the current Bicycles only lanes are Category 2 lanes, these would be plowed within a targeted timeline of 36 hours after a Snow Event with 5 cm of snow</li><li>The Bicycle Only Lanes will get the same level of service as Category 2 roads with additional monitoring through focused bike lane field inspections</li><li>All bicycle only lanes would be cleared in a consistent manner</li></ul>	Accessibility, Health & Safety, Legislative	<ul style="list-style-type: none"><li>All bicycles only lanes are inspected and plowed/ sanded/snow-removed as per the Level of Service mentioned under ‘Measures’.</li><li>Bicycle only lane surfaces are maintained consistently for each lane</li><li>Reasons for any deviations from the goal are analysed and reported</li></ul>	<ul style="list-style-type: none"><li>Field inspection</li><li>Service requests</li><li>Daily shift supervisor's Plow &amp; Ice control report</li></ul>	Seasonal Roadways Operations	<ul style="list-style-type: none"><li>Number of service requests</li><li>Bicycle Only Route Maintenance Maps</li><li>Telematics data</li><li>Post-season stakeholder meeting</li></ul>	<ul style="list-style-type: none"><li>Annual Winter Maintenance Summary Report to Council</li><li>Post -Snow Event Report to key stakeholders</li></ul>



<b>Objective 11:</b> Transit stops are accessible	<p>Sidewalk adjacent to the transit stops plowed by City crews to mitigate accessibility challenges for users of the transit system.</p> <p>Level of Service:</p> <ul style="list-style-type: none"><li>• All sidewalks with transit stops would be cleared within 48 hours’ time-period</li><li>• Snow Ridges of any height would be removed from between signed Transit stops</li><li>• Since the Transit routes are classified as category 2 or higher, these would be plowed within a targeted timeline of 36 hours after a Snow Event with 5 cm of snow<ul style="list-style-type: none"><li>○ This would help in ensuring the parking lanes on transit routes along transit stops are cleared during Systematic Plow, thereby enhancing accessibility</li></ul></li></ul>	Accessibility, Health & Safety, Sustainability	<ul style="list-style-type: none"><li>• All sidewalks with transit stops are cleared of snow or ice and validated by quality inspections</li><li>• Reasons for any deviations from the goal are analysed and reported</li></ul>	<ul style="list-style-type: none"><li>• Field inspection</li><li>• Service requests</li><li>• Daily shift supervisor's Plow &amp; Ice control Report</li></ul>	Seasonal Roadways Operations, Bylaw Enforcement	<ul style="list-style-type: none"><li>• Number of service requests</li><li>• Transit Route Maintenance Maps</li><li>• Telematics Data</li><li>• Post-season stakeholder meeting</li></ul>	<ul style="list-style-type: none"><li>• Annual Winter Maintenance Summary Report to Council</li><li>• Post -Snow Event Report to key stakeholders</li></ul>
<b>Objective 12:</b> City roads along fields and open areas are accessible for emergency response vehicles, transit, and other City services by creating Snow Ridges where possible.	<p>Snow Ridges would be created in open areas and fields (where permitted by property owners) to mitigate drifting and blowing snow on to the city roads and intersections as required.</p> <p>Level of Service:</p> <ul style="list-style-type: none"><li>• Snow Ridges created in open areas as required</li><li>• Typically, the Snow Ridges will be created once there is enough snow on the ground</li><li>• Snow Ridges will be inspected, added and maintained through the season as required</li><li>• In addition to creating Snow Ridges adjacent to roads in open areas, City crews will utilize other winter maintenance techniques involving mechanically plowing and removing snow, as required</li></ul>	Accessibility, Sustainability, Health & Safety, Responsiveness, Customer Service	<ul style="list-style-type: none"><li>• Single or multiple rows of snow ridges created at approved open locations around the City when sufficient snow available and Snow Ridges are warranted</li><li>• Dedicated crew deployed to attend gravel roads, outer roads and Snow Ridges at approved locations</li><li>• Reasons for any deviations from the goal are analysed and reported</li></ul>	<ul style="list-style-type: none"><li>• Field inspection</li><li>• Service requests</li><li>• Shift supervisor's Report on Snow Ridges and Snow Plowing</li></ul>	Seasonal Roadways Operations	<ul style="list-style-type: none"><li>• Number of service requests</li><li>• Telematics data</li><li>• Snow Ridge Map</li><li>• Amount of time outer roads had to be closed due to blown-in snow/ drifting snow.</li></ul>	<ul style="list-style-type: none"><li>• Annual Winter Maintenance Summary Report to Council</li><li>• Post -Snow Event Report to key stakeholders</li></ul>
<b>Objective 13:</b> Availability of free sand for residents is improved to help mitigate icy sidewalk conditions by expanding the Sandbox Program citywide.	<p>The City of Regina provides free sand/salt mix for Regina residents to apply to icy sidewalks throughout the winter. This is to encourage residents to help increase safety for pedestrians by applying the sand-salt mix to sidewalks.</p> <p>Level of Service:</p> <ul style="list-style-type: none"><li>• Sandbox locations will be reviewed yearly, and new sandboxes added and serviced during winter, as required in the vicinity of high pedestrian traffic areas in the city throughout the winter season</li><li>• Sandboxes will be placed at convenient locations in different parts of the City</li><li>• All sandboxes placed in different parts of the city will be serviced every 24 hours or earlier based on the weather conditions</li><li>• Crews fill the sandboxes as soon as the level of sand in the sandbox is less than a quarter full</li><li>• The sandboxes are meant for individual use and not for contractors serving multiple customers</li></ul>	Accessibility, Health & Safety, Legislative, Customer Service	<ul style="list-style-type: none"><li>• Ensure the Level of Service mentioned under ‘Measures’ met consistently for all sandbox locations throughout the season</li><li>• Reasons for any deviations from the goal are analysed and reported</li></ul>	<ul style="list-style-type: none"><li>• Field inspection</li><li>• Service requests</li><li>• Shift supervisor's Report on Snow Ridges</li><li>• Material consumption data</li></ul>	Seasonal Roadways Operations	<ul style="list-style-type: none"><li>• Number of Service Requests</li><li>• Sandbox Service Reports</li><li>• Material Consumption Report</li></ul>	<ul style="list-style-type: none"><li>• Annual Winter Maintenance Summary Report to Council</li><li>• Post -Snow Event Report to key stakeholders</li></ul>

<b>Objective 14:</b> Effectiveness of snow-plow operation are improved by temporarily removing parked cars through expansion of the Snow Routes Program, as required.	<p>Snow Routes Program is expanded to improve winter maintenance operation efficiency and end conditions on.</p> <p>Level of Service:</p> <ul style="list-style-type: none"><li>• Snow Routes will typically come in effect once there is 5cm or more snow on the ground or as determined by the Manager of Roadways Seasonal Operation based on the road conditions</li><li>• Snow Route locations would be plowed within 48 hours</li><li>• Downtown snow removal will be coordinated within Snow Route notification timelines</li><li>• Minimum 8 hours notification will be provided prior to the start of the Snow Route parking bans</li><li>• Residents and businesses will be able to sign-up for an email notification system by following easy steps</li></ul>	Accessibility, Health & Safety	<ul style="list-style-type: none"><li>• Ensure the Level of Service mentioned under ‘Measures’ met consistently for all Snow Route locations during the season</li><li>• Auto-notification facility to sign-up for Snow Route notifications available for all residents and businesses</li><li>• Reasons for any deviations from the goal are analysed and reported</li></ul>	<ul style="list-style-type: none"><li>• Shift supervisor's Report on Snow Routes</li><li>• Field inspection</li></ul>	Seasonal Roadways Operations	<ul style="list-style-type: none"><li>• Snow Routes locations map</li><li>• Snow Route Plow crew report on timelines</li><li>• Number of Parking Tickets issued</li><li>• Telematics data</li></ul>	<ul style="list-style-type: none"><li>• Annual Winter Maintenance Summary Report to Council</li><li>• Post -Snow Event Report to key stakeholders</li></ul>
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#### Appendix B (of Appendix B) – Winter Road Condition Terminology

The following are some typical winter conditions experienced in Regina and their definitions.

Condition	Definition
Visibility Good	A driver can see more than 500 metres.
Visibility Poor	A driver can see less than 250 metres. Under this condition, winter maintenance equipment will not begin work on the road until visibility improves. Equipment already on the road may be removed if visibility continues to deteriorate.
Visibility Zero	A driver can see less than 100 metres. Under this condition, winter maintenance equipment may be removed and road may be temporarily closed.
Street Closed	Street is impassable because it has been closed for operational reasons or weather.
Drifting Snow	Ground drifting caused by winds which blows snow which may adversely affect driving surface conditions, such as sticking snow or reducing visibility.
Heavy Snow	More than five centimetres of loose snow covers the Road resulting in traffic encountering difficulties when moving or passing.
Icy Conditions	Street, Road, alley or Sidewalk surface is covered with ice causing hazardous conditions for drivers and pedestrians due to reduced surface traction
Icy or Slippery sections	A minor situation causing reduction in the surface traction due to intermittent rain, frost, sticking snow or ice patches. This includes light pavement frost
Loose Snow	Loose snow less than five centimetres of loose snow covers the street and may cause driving difficulties.
Pavement Frost	Buildup of frost on a Street, Sidewalk, Roads or alley surface that reduces braking effectiveness of vehicles or creates hazardous walking conditions.
Seasonal Winter Driving	No specific problems with driving however there could be the occasional condition as mentioned in this table including icy conditions, slush, snow packed, loose snow or other impediments to driving. Extra caution is required by road users.
Seasonal Winter Biking	No specific problem with bicycling, however there could be the occasional condition as mentioned in this table including icy conditions, slush, snow packed, loose snow or other impediments to biking. Extra caution is required by road users.
Seasonal Winter Walking	No specific problem with walking on the sidewalks, however there could be the occasional condition as mentioned in this table including icy conditions, slush, snow packed, loose snow, snow piles or other impediments to walking. Extra caution is required by sidewalk users.
Slush	A buildup of ice or snow and water on the pavement as a result of snow fall when pavement temperatures are at or near the freezing point. This creates driving conditions that may cause an unsuspecting driver to lose control of a vehicle.
Snow Drifts	Small snow dunes or snow piles on the Roads, Street sections, Sidewalks or alleys at intermittent intervals and are most likely to occur on such infrastructure in open areas.
Swirling Snow	A condition created by traffic in loose snow that reduces visibility.
Snow Packed	This condition exists where the entire driving or walking surface is covered with packed snow.
Fog	Moist air low to the ground resulting in reduced visibility.
Emergency Winter Response	Excessive amount of snow, ice, wind impeding Normal Winter Driving as well as snow and ice maintenance activities specified under Winter Maintenance Policy. City would follow an Emergency Winter Response Plan.



## Sidewalk Snow Clearing Provisions - Clean Property Bylaw Amendment

<b>Date</b>	September 22, 2021
<b>To</b>	Operations and Community Services Committee
<b>From</b>	Citizen Services
<b>Service Area</b>	Roadways & Transportation
<b>Item No.</b>	OCS21-25

### RECOMMENDATION

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The Operations and Community Services Committee recommends that City Council:

1. Approve the amendments to *The Clean Property Bylaw, Bylaw No. 9881* (Bylaw) as detailed in Option 1 and appendix A, effective January 1, 2022.
2. Allocate \$510,000 in the proposed 2022 General Operating Budget to fund three additional Bylaw Enforcement Officers, one administrative Bylaw position, one additional position in the Legal Services Branch and additional associated costs.
3. Instruct the City Solicitor to prepare the necessary amending bylaw to be brought forward to the October 13, 2021 meeting of City Council following the approval of these recommendations.
4. Approve these recommendations at its meeting on September 29, 2021

### ISSUE

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

The purpose of the report is to provide options to amend the *Bylaw* by introducing provisions related to sidewalk snow and ice clearing which require all property owners in the city to clear sidewalks

adjacent to their property, as detailed in Appendix A. If approved, the amendments to the *Bylaw* will come in effect on January 1, 2022, following a focused awareness program to inform all residents and businesses.

## IMPACTS

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### **Accessibility Impact:**

Implementation of the proposed amendments to the *Bylaw* to make sidewalk snow and ice clearing responsibilities mandatory city-wide will ensure enhanced snow clearing on sidewalks across the community, making them more accessible for all users.

Administration will further strengthen existing community programs including volunteer -led snow removal programs like Snow Angels Program to provide snow clearing support to persons with physical challenges. Further details on the Snow Angels program can be found in Appendix B.

Feedback from the Accessibility Advisory Committee (AAC) was considered when proposing amendments to the *Bylaw*. Further details can be found in appendix F.

### **Financial Impact:**

To deliver both complaint based and proactive enforcement related to sidewalk snow and ice clearing city wide, additional three Bylaw Enforcement Officer I (BEO) positions will be required, an additional administrative Bylaw position, an additional position within Legal Services Branch as well as a ticket management software at an annual cost of approximately \$510,000.

In addition to the winter season enforcement related to sidewalk snow and ice clearing, the additional BEO positions will support increased operational demands during the summer season associated with overgrown grass, vegetation and graffiti.

Winter Maintenance will support the strengthening and expansion of community run programs, like Snow Angels program, that could provide sidewalk snow and ice clearing and snow ridge reduction to support persons with physical challenges. A total of \$50,000 in grant funding is already provided by the City of Regina (City) for the Snow Angels program.

In addition, through CR20-85, City Council approved funding of \$35,000 to implement an enhanced communication plan annually to communicate changes to the Winter Maintenance Policy and the *Bylaw* relating to sidewalk snow and ice clearing.

### **Policy/ Strategy Impact:**

The proposed amendments to the *Bylaw* support the Transportation Master Plan (TMP) and the *Design Regina: The Official Community Plan* (OCP), specifically:

#### *Section D3, Transportation:*

- *Goal 1 – Sustainable Transportation Choices; Offer a range of year-round sustainable transportation choices for all, including a complete street framework.*

- *Goal 2 – Public Transit; Elevate the role of public transit.*
- *Goal 3 – Integrated Transportation and Land Use Planning; Integrate transportation and land-use planning in order to better facilitate walking, cycling, and transit trips.*
- *Goal 4 – Road network Capacity; Optimize road network capacity.*
- *Goal 5 – Active Transportation; Promote active transportation for healthier communities*

The recommendations support City Council's resolution to continue providing winter maintenance that effectively supports the health, attractiveness, and economic viability of our community.

**Environmental Impacts:**

The proposed amendments to the *Bylaw* will ensure more consistent sidewalk clearing during winter, encouraging walk friendly neighborhoods. Residents may be motivated to walk or use public transit more due to improved sidewalk accessibility thereby reducing the dependence on vehicles for transportation.

**Risk/Legal Impacts:**

The proposed *Bylaw* amendments provide details on the nature of the offence and consequence for non-compliance with the *Bylaw* as provided for in Appendix A to this report.

**OTHER OPTIONS**

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There are no other options considered in this report.

**COMMUNICATIONS**

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Administration will develop a comprehensive communications strategy to create awareness about several updates in the Winter Maintenance Policy, as well as changes in the *Bylaw*, relating to sidewalk snow and ice clearing. The cost of the enhanced communication plan will be funded by the winter maintenance annual operations budget and was approved by City Council as per report CR20-85.

**DISCUSSION**

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Currently, the *Bylaw* requires owners of commercial buildings, commercial parking lots, vacant property and select apartment buildings to clear sidewalks within 24-48 hours of a snowfall. Those properties in and around the downtown area must clear the snow within 24 hours of accumulation and those properties outside the zone must clear the snow within 48 hours of accumulation. Only some properties that have a residential land use, and that are located within the area set out in *Schedule B* are included in the current *Bylaw*'s snow and ice clearing requirements. Further details can be found in Appendix D.

The City encourages residents to be a good neighbour and clear their sidewalks. Unfortunately, this does not always happen, and it creates inconsistent snow and ice clearing by property owners along

the sidewalks thereby causing accessibility challenges for pedestrians and users of the transit system.

Administration recommends Option 1: Amend *The Clean Property Bylaw* to include changes to the sidewalk snow and ice clearing responsibilities as follows:

Bylaw Amendment 1- Amend Section 6 of the Bylaw:

The proposed amendment to *Section 6* of the *Bylaw* will expand the obligation of the property owners to clear the sidewalks abutting their properties to be citywide. Namely, all properties will be required to clear snow and ice from the adjacent sidewalk with those properties in and around downtown, as identified on the map in Appendix D. Doing so within 24 hours of the end of snowfall and the remainder of the properties in the city within 48 hours.

The *Bylaw's* enforcement will be both proactive and complaint based and would come into effect on January 1, 2022.

*Section 333(1)(e)* of *The Cities Act* allows a municipality to pass a bylaw making property owners responsible for snow removal on public sidewalks. In reliance on that provision, the City will be able to add the cost of clearing the sidewalk to the taxes of the adjoining property in the event the property owner does not comply with the *Bylaw*.

Bylaw Amendment 2 – Amend Section 7 of the Bylaw:

The proposed amendments will include amendments to *Section 7* of the *Bylaw* to prohibit property owners from depositing snow and ice from the sidewalk onto other areas of the sidewalk, or more than 2.5 metres from the curb onto public highway or parking lane. This will ensure the entire width of the sidewalk is available for all pedestrians.

Bylaw Amendment 3 – Amend Section 16 of the Bylaw:

The proposed amendment to *Section 16* of the *Bylaw* will clarify the authority for enforcement as set out in Appendix A. As mentioned above, enforcement of the *Bylaw* will be both proactive and complaint based.

Bylaw Amendment 4 – Amend Schedule J of the Bylaw:

As part of the proposed amendments it is necessary to amend *Schedule “J” Voluntary Payments for Notice of Violation* of the *Bylaw* to update the voluntary payment and offence description for failing to clear snow and ice.

These proposed amendments will be another tool available to Bylaw Enforcement Officers to address situations of non-compliance. Further details on the proposed amendments can be found in Appendix A.

In addition, the option will ensure a notice of violation ticket (voluntary payment of \$100 per offence as per *Schedule J* of the *Bylaw*) is issued and the cost of clearing the sidewalk added to the taxes of the adjoining property in the event the property owner does not comply with the *Bylaw*.

Research of other jurisdictions in Western and Eastern Canada indicates that cities like Saskatoon, Edmonton, Calgary, Medicine Hat, Vancouver, Windsor and Hamilton have established sidewalk snow and ice clearing bylaws requiring residents and businesses to clear snow and ice from adjoining sidewalks in a stipulated timeframe. In failing to do so fines are imposed. Further details can be found in Appendix E.

Administration engaged with the Accessibility Advisory Committee (AAC) to get their feedback on the sidewalk snow clearing options considered under the *Bylaw* and how City might strengthen the current Snow Angels program to enhance accessibility. The committee members provided their support for the proposed changes in the *Bylaw*. Further details can be found in Appendix F.

## DECISION HISTORY

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At its meeting on September 30, 2020, City Council considered item *CR20-85 - Winter Maintenance Policy Update Report*, as part of the 2021 Budget Process. At the direction of City Council, Administration committed to bringing a report with options to amend the *Bylaw*, with respect to sidewalk clearing, in Q3 of 2021.

The recommendations contained within this report require City Council approval.

Respectfully Submitted,

A blue ink signature of Chris Warren, consisting of a stylized 'C' followed by 'W' and a horizontal line.

Chris Warren, Director, Roadways & Transportation

Respectfully Submitted,

A black ink signature of Kim Ohra, featuring a large, circular initial 'K' followed by 'Ohra'.

Kim Ohra, Executive Director, Citizen Services

9/8/2021

Prepared by: Neeraj Saroj, Senior Engineer, Roadways & Transportation

## ATTACHMENTS

Appendix A-Proposed Amendments to the Clean Property Bylaw

Appendix B -Snow Angels Program

Appendix C - CR20-85 Winter Maintenance Policy Update

Appendix D Schedule B Locations Map

Appendix E- Other Jurisdictions- Sidewalk Snow Clearing Bylaw

Appendix F Engagement with Accessibility Advisory Committee



## **Appendix A**

### **Proposed Amendments to the Clean Property Bylaw**

Administration is recommending the following amendments be made to *The Clean Property Bylaw (Bylaw)*:

A. Bylaw Amendment 1 – Amend Section 6 of the Bylaw:

Replace Section 6, Part 3 Snow and Ice Removal

**Existing Wording:**

~~6(1) Every owner, operator or occupant of land inside the area shown on Schedule "B" appended to this Bylaw shall maintain the public sidewalks adjoining the land whereas:~~

- ~~(a) subject to clause (b) any hazardous condition created by snow or ice shall be cleared and removed;~~
- ~~(b) sand or similar material which renders the sidewalk safe shall be applied where it can be clearly demonstrated that the surface condition makes it difficult to meet the requirement in (a) above;~~
- ~~(c) the sidewalk surface shall be clear and free of dirt, debris or other obstructions. Within one day, excluding Sundays and holidays, of accumulation.~~

~~6(2) Every owner, operator or occupant of any Commercial Building, Apartment Building, Commercial Parking Lot and Vacant Property that is situated outside the area shown in Schedule "B" shall maintain the public sidewalks adjoining those properties as follows:~~

- ~~(a) subject to clause (b) any hazardous condition created by snow or ice must be cleared and removed;~~
- ~~(b) sand or similar material that renders the sidewalk safe must be applied where it can be clearly demonstrated that the surface condition makes it difficult to meet the requirement in clause (a); and~~
- ~~(c) the sidewalk surface must be clear and free of dirt, debris or other obstructions; Within forty-eight (48) hours of accumulation.~~

**Replace With:**

6(1) Every owner of land adjoining a sidewalk shall clear the sidewalk of all snow and ice within forty-eight (48) hours of the time when the snow or ice was formed or deposited thereon.

- (2) Notwithstanding subsection 6(1), in the areas listed in the attached Schedule "B", the owner shall clear or remove or cause to be cleared or removed all snow or ice from any sidewalk adjoining their property within twenty-four (24) hours of the time when the snow or ice was formed or deposited thereon.
- (3) The City may take whatever actions or measures are necessary to remedy a contravention of this section, and in the case of snow or ice, the City may, pursuant to section 333 of *The Cities Act*, complete the work and add to the tax roll of the adjoining property the unpaid expenses and costs incurred by the City for removing the snow and ice.

B. Bylaw Amendment 2- Amend Sections 7(1), (4) and (6) as below

**Existing Wording:**

- ~~7. (1) No person shall remove snow or ice from any public sidewalk by causing it to be placed upon any other portion of the sidewalk or roadway surfaces except as noted within this section.~~  
~~(4) Snow and ice removed from any public sidewalk may be placed along the curbline provided the snow and ice does not encroach onto the sidewalk surface more than 0.3 meters from curb face nor onto the road surface more than 2.5 meters from curb face.~~  
~~(6) Snow and ice removed from public property shall not obstruct sightlines in violation of the Traffic Bylaw #9900 nor be placed more than 2.5 meters from curb face on to the roadway surface.~~

**Replace With:**

- 7(1) No person shall remove snow or ice from any public sidewalk by causing it to be placed upon any other portion of the sidewalk, public highway surfaces or parking lane except as noted within this section.
- 7 (4) Snow and ice removed from any public sidewalk may be placed along the Curb face provided the snow and ice does not encroach onto the sidewalk nor extend more than 2.5 meters from Curb face on to the public highway or parking lane.
- 7(6) Snow and Ice removed from public property shall not obstruct sightlines in violation of the Traffic Bylaw #9900 nor be placed more than 2.5 meters from curb face on to the public highway or parking lane.

C. Bylaw Amendment 3 – Amend Section 16 of the Bylaw:

**Existing Wording:**

**PART 6. ENFORCEMENT**

**Default**

~~16. (1) Where a person fails to do anything required by this Bylaw, the City or any Bylaw Enforcement Officer may, in default of its being done by that person, do the thing at the expense of the person in default, and the City may recover the expenses of doing so with costs:~~

~~(a) by action in any Court of competent jurisdiction;~~

~~(b) in the same manner as municipal taxes; or~~

~~(c) by adding the expenses to, and thereby they form part of, the taxes on the land on which or with respect to which the work is done.~~

~~(2) Any person against whom remedial action is taken pursuant to subsection (1) shall also be liable to prosecution for contravention of the Bylaw.~~

**Replace with:**

A. Section 16 shall be repealed and replaced with:

**PART 6. ENFORCEMENT**

**Enforcement Officials**

16. For the purpose of enforcement of this Bylaw and sections 324, 325, 326 and 328 of *The Cities Act*, the Director or any Bylaw Enforcement Officer are designated officers and authorized to administer and enforce this bylaw through any means authorized by *The Cities Act*.

**Offence**

16.1(1) No person shall:

- (a) obstruct or hinder Director or any Bylaw Enforcement Officer or any other person acting under the authority of this Bylaw or *The Cities Act*; or
- (b) fail to comply with any other provision of this Bylaw.

D. Bylaw Amendment 4 – Amend Schedule J of the Bylaw:

Amend *SCHEDULE "J" Voluntary Payments for Notice of Violation* by amending the voluntary payment and offence description for failing to clear snow or ice to be:

6(1) \$100 failing to clear ice and snow from entire width of the sidewalk within 48 hours after the end of snow fall

6(2) \$100 failing to clear ice and snow from entire width of the sidewalk within 24 hours after the end of snow fall

E. Bylaw Amendment 5 - Add new definitions in The *Regina Traffic Bylaw*, 1997, Bylaw No. 9900, as below

"*Parking lane*" -means that portion of longitudinal division of a highway of sufficient width to accommodate the storage of a single line of vehicles adjacent to the curb and where parking is permitted.

"*Road*"- means a paved or graveled thoroughfare or street intended for the use by vehicles for passage and parking as per instructions on the displayed traffic signs

## **Appendix B**

### **Snow Angels Program**

The City of Regina (City) actively encourages citizens to do their part in keeping sidewalks safe and to help their neighbours do so, when possible, through a variety of means, including supporting community-based organizations through grant funding. Some of these organizations that offered sidewalk snow removal programs under this initiative are [Eden Care Communities](#), [Al Ritchie Community Association](#) and [Cathedral Area Community Association](#).

The City currently provides a grant of \$50,000 to run a community program to keep the sidewalks safe for seniors and neighbors.

#### **2020/2021 Pilot Program:**

Table 1 below provides feedback about the program received from the three community partner organizations who participated in the pilot study during 2020-2021 winter season.

#### **2021-2022 *Snow Angels Program*- Plan Highlights:**

- Plan to expand the current grant program
- Plan to have more funding available to distribute to more organizations
- Plan to distribute the funding across a large number of organizations-based on success with the smaller funding models during 2020-2021
- Expecting to release the grant applications in mid-September alongside the Winter Initiatives Grant Funding, have an application deadline of October 15<sup>th</sup>, and confirm funding to the organizations by November 15<sup>th</sup>
- Will encourage all Community Associations as well as other community groups to apply

**Table 1: Snow Angels Pilot 2020/2021-Feedback from Community Partners**

	AI Ritchie Community Association	Cathedral Area Community Association	Eden Care
Organizational Impact	<ul style="list-style-type: none"> <li>• Got many calls saying this was a great service.</li> <li>• Brought some new people in and they were able to learn about other programs and services they offer.</li> </ul>	<ul style="list-style-type: none"> <li>• Felt good to offer this service, especially during a pandemic.</li> <li>• They've always talked about providing this service, and this helped to provide a framework.</li> </ul>	<ul style="list-style-type: none"> <li>• Very proud to be a part of this initiative.</li> <li>• Pandemic did not allow for organizational buy in.</li> </ul>
Community Impact	<ul style="list-style-type: none"> <li>• Could safely move around their neighbourhood (get in car, catch bus, move garbage can).</li> <li>• Allowed people to continue to be part of the community and not be stuck in their house.</li> </ul>	<ul style="list-style-type: none"> <li>• Lots of people felt cared about.</li> <li>• Many people continued to pay it forward.</li> <li>• Good and safe exercise for the community.</li> <li>• Purchased local gift cards for the volunteers from local businesses.</li> </ul>	<ul style="list-style-type: none"> <li>• Don't think there was a big one.</li> <li>• Pandemic and lack of snow made it hard.</li> </ul>
Model Successes	<ul style="list-style-type: none"> <li>• Allowed people to trust ARCA to help them live safely.</li> <li>• Promoted a healthy lifestyle. Benefit to resident but also everyone around who walks.</li> <li>• Often helped out adjacent neighbours to be nice as well.</li> </ul>	<ul style="list-style-type: none"> <li>• Both years had more volunteers than residents.</li> <li>• Program expanded in the second year.</li> <li>• Put money back into the community through gift cards.</li> </ul>	<ul style="list-style-type: none"> <li>• Learned we need to include participants and stakeholders in the program design and research.</li> <li>• Had support from other community organizations spreading the word.</li> <li>• Volunteers were enthusiastic and excited.</li> </ul>
Model Challenges	<ul style="list-style-type: none"> <li>• Recruiting volunteers – high schools were not doing a volunteer program. Found some through the U of R Nursing program.</li> <li>• Originally a barrier with no way to manage intake of residents and volunteers.</li> </ul>	<ul style="list-style-type: none"> <li>• It was hard to confirm that people had shoveled.</li> <li>• Would do check ins.</li> </ul>	<ul style="list-style-type: none"> <li>• Pandemic – people were not going out as much and attending programs.</li> <li>• Not as many volunteers were interested in being out in the community.</li> <li>• Didn't feel like there was a great need due to not enough snow fall.</li> </ul>
Marketing Successes and Challenges	<ul style="list-style-type: none"> <li>• Needed more info on the postcards. Hard to get postcards into apartments.</li> </ul>	<ul style="list-style-type: none"> <li>• Didn't have to do a lot. Many people learned through word of mouth and marketing streams that were already set up.</li> <li>• If people don't know, they're not sure what they need to do to reach them.</li> </ul>	<ul style="list-style-type: none"> <li>• Radio ads worked well.</li> <li>• Flyers was difficult in pandemic.</li> <li>• Social media was liked, but it didn't translate into sidewalks being shoveled.</li> </ul>
Intake and Matching	<ul style="list-style-type: none"> <li>• Most volunteers were repeat, and many brought friends.</li> </ul>	<ul style="list-style-type: none"> <li>• Worked great, most people didn't have to travel more than a block or two to get to the resident.</li> <li>• All residents were matched with a volunteer.</li> </ul>	<ul style="list-style-type: none"> <li>• Volunteers were flexible about going where they needed.</li> </ul>
Volunteer Successes and Challenges	<ul style="list-style-type: none"> <li>• Many volunteers contributed multiple times.</li> <li>• Some residents needed large amounts of sidewalk shoveled and it was completed.</li> <li>• Overall volunteer pool is small, would like to grow it.</li> </ul>	<ul style="list-style-type: none"> <li>• No challenges. Lots of success.</li> </ul>	<ul style="list-style-type: none"> <li>• Pandemic.</li> <li>• Volunteer recruitment needs to also be a face to face thing.</li> </ul>

	<ul style="list-style-type: none"><li>• Would like to look at alternative means for recruiting volunteers.</li></ul>		
Need for Service	<ul style="list-style-type: none"><li>• Mix of older adults, financial challenges, and physical limitations</li></ul>	<ul style="list-style-type: none"><li>• People filled out an application.</li><li>• Mix of older adults, financial challenges, and physical limitations.</li><li>• One challenge is how do we determine what is and is not financially challenged or limited physically.</li></ul>	<ul style="list-style-type: none"><li>• No, this is a gap.</li></ul>
Service Completion Time	<ul style="list-style-type: none"><li>• Most in 24 hours, unless had to return due to additional snow fall.</li></ul>	<ul style="list-style-type: none"><li>• Most were done within 24 hours.</li><li>• Some people were very particular, but they often ended up hiring a service.</li><li>• Sometimes when the volunteers showed up to a location the snow was already shoveled by a neighbor.</li></ul>	<ul style="list-style-type: none"><li>• Yes</li></ul>
Types of Snow Removed	<ul style="list-style-type: none"><li>• Sidewalks, driveways, and ridges</li></ul>	<ul style="list-style-type: none"><li>• Sidewalks, driveways, ridges, and other as requested (under wheelchair lift)</li></ul>	<ul style="list-style-type: none"><li>• Mostly sidewalks only.</li></ul>
Quality of Service	<ul style="list-style-type: none"><li>• All were extremely pleased.</li><li>• One resident needed to get to a Dr Appointment and requested to be completed earlier on the timeline and they were able to accommodate that.</li></ul>	<ul style="list-style-type: none"><li>• All were extremely pleased.</li></ul>	<ul style="list-style-type: none"><li>• None</li></ul>
Recommendations for Changes	<ul style="list-style-type: none"><li>• Incentives for volunteers.</li><li>• Coordinate with school volunteer programs.</li><li>• Coordinate with other community programs that can refer clients.</li></ul>	<ul style="list-style-type: none"><li>• None unless the number of requests exceeds the number of volunteers.</li></ul>	<ul style="list-style-type: none"><li>• Need to include stakeholders.</li><li>• Would like to explore alternative opportunities.</li></ul>


Impact Statements	<ul style="list-style-type: none"> <li>• Everyone appreciated the program.</li> <li>• It was a pleasure having the community meet each other and grow unity under a simple act of kindness.</li> </ul>		<ul style="list-style-type: none"> <li>• My snow angel was wonderful. I would never have met her as a neighbor, even though she lives on the next block. She is a young pre-med student and just so energetic and kind. Without her I would have been stumbling over frozen snow and ice all winter. Impact on my life, you bet. I had no worries when I heard snow was predicted. Not feeling badly that my mailman would have to plow through my unshoveled front walk. I turn 80 this year and this Snow Angel program is the best think going in my neighbourhood.</li> <li>• This was the first time that I participated in this program. I am a wheelchair user and having someone reliable come by and clear my walk enabled me to get out of my house this winter to get groceries and such, but more importantly made it safe for others, like the mail delivery person to more easily access my place. The volunteer was great, friendly, and came by soon after a snowfall. Prompt, friendly, and reliable, can not ask for anything more. This is a much appreciated program.</li> </ul>			
Total # of staff involved	-	3	2	2		
Total # of staff hours	-	300	80	68		
Total # of volunteers	-	17	21	29		
Total # of volunteer hours	-	100	28 times	163 times		
Total # of requests	-	17	6	19		
Total # of request not met	-	0	0	0		
Total # of requests met	-	17 houses (70 shovelings)	6	19		
Total # of one-time clearing locations	-	0	0	1		
Total # of multi-visit locations	-	17	6	18		



 **City of Regina | Municipal Government**  
January 15, 2020 · 🌐

Winter is here and snow angels ❄️ in your community are hard at work! The following organizations are offering sidewalk snow removal programs this winter thanks to the support of City of Regina grant funding: Eden Care Communities, Al Ritchie Community Association and Cathedral Area Community Association.

Contact each organization for more information on their program and how you can volunteer.



CATHEDRAL VILLAGE ONLINE

ABOUT WHAT'S HAPPENING PROGRAMS & SERVICES VOLUNTEER GALLERY

## Cathedral Snow Angels



*Cathedral Snow Angels is a city-supported, community initiative to harness the power of volunteerism to keep our sidewalks clear through the winter.*

It's everyone's responsibility to keep their sidewalk clear but many people can't, whether due to age, an injury, condition or illness. That's where **Cathedral Snow Angels** come in.

**Cathedral Snow Angels** are Cathedral residents who've come forward and offered to clear the walks of friends and neighbours who need a little help.

**Reasons to join...**

### Cathedral Snow Angels #3: Prizes!

We're giving away gifts certificates gathered from awesome Cathedral businesses every month. Join the Snow Angels for your chance to win!

[cathedralvillage.org/snowangel](https://cathedralvillage.org/snowangel)



**And you can sign up!** Either to be a volunteer **Cathedral Snow Angel** or to get help from a **Snow Angel**.

Do you...

REGINA — For seniors or people dealing with disabilities, getting your sidewalk shoveled after a snowfall can be a challenge.

That's where two new programs in Regina are looking to step in.

The Eden Care Communities Foundation has launched the "Adopt a Sidewalk" program to help paratransit users throughout the winter.

"If you need to get a day appointment or a medical appointment for a blood transfusion or dialysis, if your sidewalk is covered and you can't get out, then you're going to miss that appointment and you can't just get out and do it yourself," Bill Platt with the Eden Care Communities Foundation said.

The program launched this week and Platt encourages community members or organizations to help out.

"This is just a great program for anybody who wants to open their hearts and lift a shovel and reinforce that Regina is an amazing city," Platt said.

A similar program is going on in the Cathedral neighbourhood, organized by the Community Association.

"Snow Angels" will be sent out to help seniors, as well as people dealing with injuries or illnesses, to keep their sidewalks clear.

"So far right now, the goal is to pair them up specifically, so if somebody says I just can't do my walk, we'll get somebody who lives close to you, who will come out whenever there's been a snow event and they'll clear that off for you," said Paul Dechene with the Cathedral Area Community Association.

Tyler Folk has volunteered to be a Snow Angel this winter. He says he wanted to lend a hand to those in need.

"There's lots of elderly people in the neighbourhood, the guy that I have is a 90-year-old guy living on his own, so when it snows, like [Tuesday], I just went there and shoveled his walk," Folk said.

The Community Association says they've had a good response from people wanting to become Snow Angels and are looking for more people that need a helping hand with shoveling snow.

You can nominate someone that needs help by heading to their website.

REGINA | News

## Volunteers lending a helping hand to keep sidewalks clear



Marc Smith CTV News Regina Video Journalist  
@MarcSmithCTV | Contact

Published Thursday, January 9, 2020 6:02PM CST  
Last Updated: Thursday, January 9, 2020 6:52PM CST



Adopt a sidewalk program

Watch: The Eden care Communities Foundation has launched the adopt a sidewalk program, Marc Smith reports.

# Appendix C



## Winter Maintenance Policy Update

<b>Date</b>	September 30, 2020
<b>To</b>	Mayor Masters and City Councillors
<b>From</b>	Public Works & Infrastructure Committee
<b>Service Area</b>	Citizen Services
<b>Item #</b>	CR20-85

### RECOMMENDATION

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The Public Works and Infrastructure Committee recommends that City Council:

1. Consider the Winter Maintenance Policy Update during the 2021 Budget process; and
2. Direct Administration to bring a report with options to amend *The Clean Property Bylaw*, with respect to sidewalk clearing, in Q2 of 2021.

### HISTORY

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At the September 23, 2020 meeting of the Public Works and Infrastructure Committee, the Committee considered the attached report PWI20-8 from the Citizen Services Division.

The Committee adopted a resolution to concur in the recommendation contained in the report after changing the date for Administration to bring a report with options to amend The Clean Property Bylaw, with respect to sidewalk clearing, from Q3 of 2021 to Q2 of 2021.

Recommendation #2 in report PWI20-8 (attached) does not need City Council approval.

Respectfully submitted,  
PUBLIC WORKS AND INFRASTRUCTURE COMMITTEE

  
Elaine Gohike, Secretary 9/25/2020

**ATTACHMENTS**

PWI20-8 - Winter Maintenance Policy Update.pdf  
Appendix A - Environmental Conditions and Budgetary Impacts  
Appendix B - Current Winter Maintenance Policy  
Appendix C - Policy Review and Feedback  
Appendix D - Road Network Reclassification  
Appendix E - School Unloading Zones  
Appendix F - Transit Stop Accessibility  
Appendix G - Transit Route General Conditions  
Appendix H - Residential Road General Conditions  
Appendix I - Bike Lane General Conditions  
Appendix J - Intersection Ice Control  
Appendix K - Snow Removal on Category 1-3 Roads

## Winter Maintenance Policy Update

<b>Date</b>	September 23, 2020
<b>To</b>	Public Works and Infrastructure Committee
<b>From</b>	Citizen Services
<b>Service Area</b>	Roadways & Transportation
<b>Item No.</b>	PWI20-8

### RECOMMENDATION

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The Public Works and Infrastructure Committee recommends that City Council:

1. Consider the Winter Maintenance Policy Update during the 2021 Budget process.
2. Approve this recommendation at its September 30, 2020 meeting.

### ISSUE

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The purpose of this report is to review the City of Regina's (City) Winter Maintenance Policy (Policy) for snow and ice management services and to provide recommendations to update the Policy in alignment with City's *Transportation Master Plan* (TMP) and the *Official Community Plan* (OCP) and community needs.

### IMPACTS

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#### **Accessibility Impact:**

One of the enhancements to the Policy could include enhanced snow clearing on sidewalks adjacent to transit stops, making them more accessible for all users.

#### **Financial Impact:**

Administration undertook an evaluation and analysis of the environmental conditions over the last ten years and it demonstrates that Regina is experiencing a reduced amount of snow accumulation and number of snow days in recent years, resulting in a cost savings of

\$1.2 million annually. Further details can be found in appendix A.

Any approved enhancements to the Policy would result in additional expenditures on an annual basis.

The Winter Road Maintenance Reserve has a current balance of \$1.8 million and is sufficient to cover expenditures during an above average winter season if conditions exceed historic averages.

**Policy/ Strategy Impact:**

The recommendations support the Transportation Master Plan (TMP) and the *Design Regina: The Official Community Plan* (OCP), specifically:

*Section D3, Transportation:*

- *Goal 1 – Sustainable Transportation Choices; Offer a range of year-round sustainable transportation choices for all, including a complete street framework.*
- *Goal 2 – Public Transit; Elevate the role of public transit.*
- *Goal 3 – Integrated Transportation and Land Use Planning; Integrate transportation and land-use planning in order to better facilitate walking, cycling, and transit trips.*
- *Goal 4 – Road network Capacity; Optimize road network capacity.*
- *Goal 5 – Active Transportation; Promote active transportation for healthier communities*

The recommendations also support Council's resolution to continue providing winter maintenance that effectively supports the health, attractiveness, and economic viability of our community.

**Environmental Impacts:**

Any recommended Policy updates would enhance general ice control practices while still adhering to Environment Canada and Transportation Association of Canada (TAC) guidelines on responsible road salt usage. A better coordinated Ice Control Program will optimize the use of sand and salt while providing improved driving conditions.

**Risk/Legal Impacts:**

Administration will ensure the updated Policy document continues to serve as a legal document defining levels of service in the community, and roles and responsibilities of the Administration, City Council and residents.

**OTHER OPTIONS**

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Administration is recommending that the winter maintenance policy update and any recommended enhancements or subsequent possible reductions to the budget be considered through the 2021 Budget process. An alternative to that option is:

### **Option 2: Status Quo Policy**

The resident survey showed that general satisfaction is high, except for the residential roads level of service. Administration could continue to operate the winter maintenance program on a status quo basis.

## **COMMUNICATIONS**

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Administration will develop a comprehensive communications strategy once budget approval has been received from City Council on any of the recommended enhancements. This will be used prior to and during the implementation of the updated Policy in 2021. The estimated cost is expected to be approximately \$35,000 annually and is included in the recommended Policy enhancements.

Administration will collaborate with community partners such as Regina Police Service, Canadian Automobile Associate (CAA), school boards, Community Associations, Regina Accessibility Committee, Regina Downtown Business Improvement District (RDBID), Saskatchewan Health Authority (SHA), and SGI in order to educate key stakeholders on the Policy enhancements.

## **DISCUSSION**

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The Winter Maintenance Policy (Appendix B) was approved by City Council in 2007 with the purpose of providing winter maintenance activities that support the health, attractiveness, and economic viability of our community. Since then, the community has experienced growth, environmental conditions have changed, and the wants and needs of residents has evolved. The City also adopted long-term strategies such as the *OCP* and *TMP* to achieve the City's vision and help guide our community into the future.

As part of the Policy review, Administration conducted a resident survey, engaged with internal and external stakeholders, evaluated previous feedback and Service Request data, researched policies in other cities, studied winter maintenance cost comparison for various cities under the MBN Canada Performance Measurement Report and evaluated gaps in the current Policy. More details can be shown in Appendix C. Although feedback from the survey showed that general satisfaction is high, the overall review identified several themes for consideration, some of which require City Council approval and others that can be implemented through operational changes.

Several options were reviewed and considered regarding possible enhancements to winter maintenance levels of service. Options were chosen based on survey and stakeholder feedback, financial viability and operational capacity. Administration is proposing the following Policy enhancements and would undertake to bring a Policy Level of Service document back to City Council in Q3 2021 for final approval. It should also be noted that activities contained in the current Policy and not identified in this enhancement report would be included in the new Policy and continue to be carried out as status quo.

#### Policy Enhancement 1 – Communication Plan

Implement an enhanced communication plan annually.

In previous years, the Roadways Seasonal Operations branch worked with the Citizen Services department to inform residents of the activities and expectations during winter months, opportunities for engagement with stakeholders, and level of service outlined in the Policy. More recently, the Administration has used specific tools and tactics to notify residents when there are parking bans in place for efficient snow plowing activities.

Feedback from the survey suggests that general awareness about the Policy is lacking and not sufficient, and that many of the Service Requests could be avoided if the City improved communication efforts and simplified the Policy document. This is like the findings in researching other municipalities; policy documents are simple to understand, and outline expected level of service that residents can expect. Administration will undertake to create a communication plan for residents leading into every winter season as well as throughout.

The cost for this enhancement is \$35,000.

#### Policy Enhancement 2 – Road Classification and Priority

Adopt road classification system as shown in Table 1.

Table 1-Proposed Road Classification

Proposed/ New Road-Classification	Length Km	Snowfall trigger
Category 1	157	5 cm
Category 2	204	5 cm
Category 3	156	5 cm
Category 4	47	5 cm
Category 5	532	15 cm
Total	1096 Km	

The current Policy classifies roads in six categories based on road classification, traffic volumes, and usage for the purposes of prioritizing systematic plowing operations and service levels.

Administration is recommending that the road prioritization system be updated and simplified to enhance residents' understanding of the level of service for the road network. This will also ensure that snow clearing efforts are in alignment with community priorities, such as the OCP. The classification and priority system will consist of five categories as shown in the table above.



The costs and implications of the enhanced classification system are reflected in the upgrades to the categories of school unloading zones, transit routes and residential roads with traffic volumes greater than 1500 vehicles per day (VPD). Additional details can be found in Appendix D.

#### Policy Enhancement 3 – School Unloading Zones

Upgrade the road plowing classification of all school unloading zones to Category 3 or higher and remove the snow ridges on both sides of the road adjacent to a school after a systematic plowing event.

Currently the Policy for snow clearing in front of schools specifies that snow ridges are removed when they exceed 30 centimetres in the School Bus Unloading Zone and exceed 75 centimetres on the remainder of the road adjacent to the school. However, there are no provisions for snow removal on the side of the road opposite of the school and this creates overall pick-up and drop-off challenges for parents and students.

Feedback from the survey and Service Requests suggests that snow ridges should be removed from both sides of the road after a snowfall and systematic plowing operations. This will allow for adequate parking and pick-up and drop-off locations, as well as enhance road conditions and safety for those accessing the schools.

The cost for this enhancement is \$100,000 annually and details can be found in Appendix E.

#### Policy Enhancement 4 – Sidewalks Adjacent to Transit Stops

Plow all sidewalks adjacent to transit stops.

Currently the Policy for snow plowing on sidewalks includes maintaining sidewalks adjacent to City-owned parks and facilities, bridge decks and subways, and locations that do not have a property owner fronting the sidewalk. However, this only represents a small percentage of sidewalks in the community, with most of the responsibility assigned to the property owners adjacent to the sidewalk. There is a requirement for commercial properties to clear their sidewalk as outlined in *The Clean Property Bylaw*, however residential properties are not included, and the City encourages residents to be a good neighbor and clear their sidewalks. Unfortunately, this does not always happen, and it creates accessibility challenges for users of the transit system when the pick-up and drop-off locations are not consistently cleared by property owners.

Feedback from the survey and Service Requests suggests that the City improve snow clearing efforts around transit stops. This is also in alignment with *OCP* goals of offering a range of year-round sustainable transportation choices for all, as well promoting active transportation.

It should be noted that a negative impact is that sidewalks not adjacent to the transit stops will not be cleared and there may be a negative perception that the City is clearing some

residents' sidewalks and not all. In addition, this does not address accessibility on the remaining sidewalk network.

If City Council preferred to adopt a Bylaw requiring all property owners to keep the sidewalks adjacent to their property free and clear of snow, this policy enhancement would not be required (see Bylaw Amendment – Sidewalk Clearing option below).

The cost for this enhancement is \$339,000 annually and details can be found in Appendix F.

#### Policy Enhancement 5 – Transit Routes

Upgrade the road plowing classification of all transit routes to Category 2 or higher.

Currently the Policy states that all transit routes are to be classified as a Category 3 priority or better. This means that during systematic plowing operations, many of the transit routes in the community can take up to 48 hours to complete after a snow event.

Feedback from Service Requests and internal stakeholders such as Regina Transit and Winter Maintenance staff, suggests that transit routes should be classified as a higher priority and cleared faster as this may be the primary mode of transportation for many residents after a snowfall. This may be especially true during a major snow event when major roads are cleared relatively quickly but residential roads take more time. Ensuring that Regina Transit has clear and safe roads to carry out consistent service level commitments and schedules is integral in elevating the role of public transit and optimizing the road network capacity.

There are no costs associated with this level of service enhancement and Administration will utilize existing tools and resources to implement this enhancement for the 2021/2022 season. Additional details can be found in Appendix G.

#### Policy Enhancement 6 – Residential Roads

Upgrade the road plowing classification of residential roads greater than 1500 vehicles per day (VPD) to Category 3 and plow all residential roads after every snow event greater than 15 centimetres.

Currently the Policy specifies that residential roads are plowed after a snow event greater than 25 centimetres, or when rutting exceeds ten centimetres. The residential road network represents approximately 541 kilometres of the entire road network and are typically plowed once or twice per season.

Feedback from the survey and Service Requests suggest that general satisfaction is low regarding snow clearing on residential roads. Administration is recommending that residential roads that are acting more as collector roads serving over 1500 VPD be classified as a higher priority and included in systematic plowing operations. In addition,

Administration recommends all residential roads are systematically plowed after a snow event greater than 15 centimetres.

Based on recent data, it is expected that this will result in one additional plow every season. It should be noted that the City will continue utilizing the Ice Shaving Program to maintain ruts and have discretion to plow all residential roads if there are unusual or extenuating circumstances during the winter.

The cost for this enhancement is \$304,000 annually and details can be found in Appendix H.

#### Policy Enhancement 7 – Bike Lanes

Upgrade the road plowing classification of bike lanes to Category 2 or higher.

The current Policy does not include any reference to bike lanes. However, most the City's existing bike lanes are located on Category 1 or 2 roads, therefore they are plowed within 36 hours of a snowfall event. There are some bike lanes located on Category 3 roads, such as Lorne Street and Smith Street, and they would be included in the upgrade.

In an effort to offer a range of year-round transportation choices and promote active transportation, the enhanced level of service will include plowing and ice control activities after a snowfall, as well as routine inspections to ensure ice, snow, and slush is cleared from the bike lane.

As most of the bike lanes are already located on higher priority roads, there are no costs associated with this enhancement. Routine inspections will be included in the current inspection program. Additional details can be found in Appendix I.

#### Policy Enhancement 8 –Intersection Ice Control

Implement ice control routing and enhance coordination between snow plowing and ice control activities.

The current Policy for ice control outlines minimum cycling times based on category during snow events and when slippery conditions are present. Sand and salt is placed on the road in advance of intersections, crosswalks, ramps and merge lanes, curves and adjacent to school properties. After a snowfall, ice control material is placed on the road up to 24 hours after systematic plowing operations have been completed.

Feedback from the survey showed general satisfaction of ice control operations, however comments suggested there could be better coordination between snow plowing and ice control activities. Implementing routes based on priority and classification for both ice control and plowing operations will bring greater consistency to these activities and reduce the time delay between the coordinated activities.

There are no costs associated with this level of service enhancement and Administration will utilize existing tools and resources to implement this enhancement for the 2021/2022 season. Additional details can be found in Appendix J.

Policy Enhancement 9 – Snow Removal on Category 1, 2, 3 Roads

Remove snow on all Category 1, 2 and 3 roads when sightlines and lane widths are impacted.

The current Policy specifies that snow removal on Category 1 and 2 roads and Category 3 transit routes will be completed when sightlines and lane widths are impacted.

Feedback from the survey indicates that the snow removal activities need to be further enhanced on major roads after each systematic plow. Removing snow from Category 1, 2, 3 roads will ensure that snow removal takes place on all arterial and collector roads that are regularly plowed, providing safer winter driving conditions by improving road capacity and visibility around intersections.

There are no additional costs associated with this level of service enhancement as Administration has gained efficiencies in this activity and typically performed much of this activity on Category 3 roads out of necessity. Additional details can be found in Appendix K.

Bylaw Amendment – Sidewalk Clearing

Implement a sidewalk snow clearing Bylaw for all property owners.

In conjunction with the City's sidewalk clearing activities outlined in the Policy, the City requires owners of commercial properties, parking lots and apartment buildings to clear sidewalks within 24-48 hours of a snowfall as per *The Clean Property Bylaw*. These programs combined represent eighteen per cent of sidewalks in our community.

Feedback from the survey and Service Requests suggest that residents want to see increased and consistent sidewalk clearing efforts in our community and favour an approach that includes enforcement options.

This would assist in achieving *OCP* goals to offer a range of year-round transportation choices and promote active transportation and would ultimately benefit Regina residents by ensuring all sidewalks are consistently cleared of snow and maintained throughout the winter season.

If this option was chosen, Administration would bring a report in Q3 2021 with options to amend *The Clean Property Bylaw*.

## DECISION HISTORY

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At the September 8, 2018 Public Works and Infrastructure Committee meeting, the Winter Maintenance Summary Report *PWI18-16* was considered, and Administration committed to review to update and align the policy with community priorities and operational requirements.

The recommendations in this report require City Council Approval.

Respectfully Submitted,

A blue ink signature of Chris Warren, consisting of a stylized 'C' followed by 'W' and a horizontal line.

Chris Warren, Director, Roadways & Transportation

9/4/2020

Respectfully Submitted,

A black ink signature of Kim Conra, featuring a large, looped 'K' followed by 'Conra'.

Kim Conra, Executive Director, Citizen Services

9/18/2020

Prepared by: Neeraj Saroj, Senior Engineer, Roadways & Transportation

## ATTACHMENTS

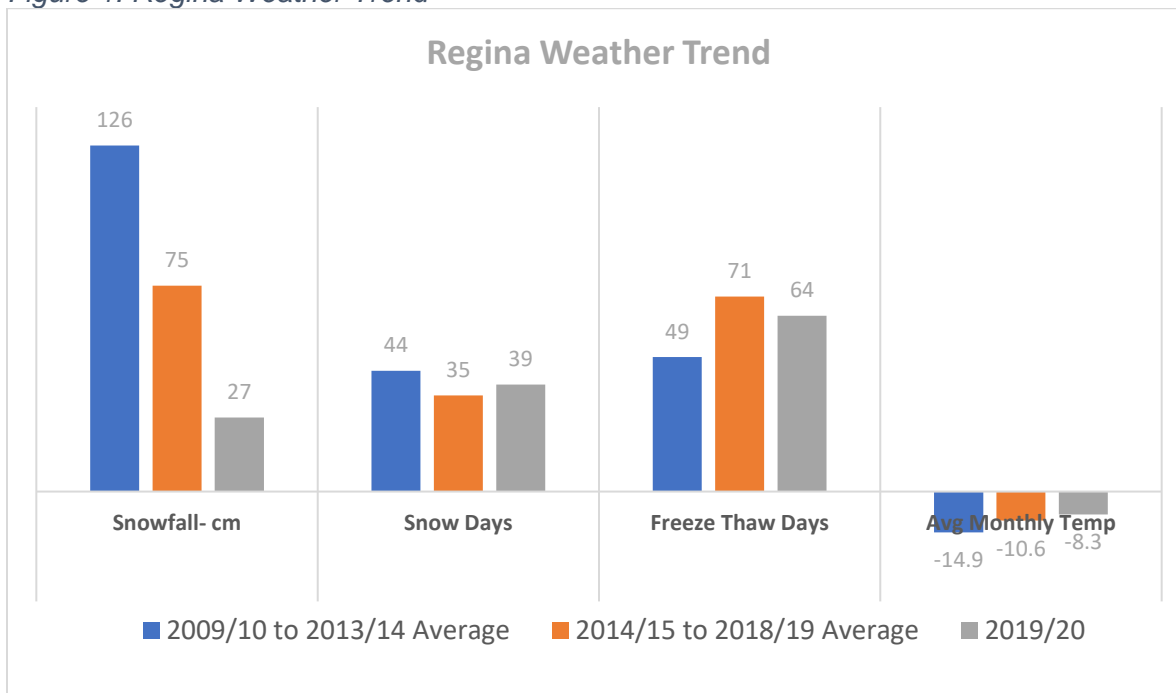
- Appendix A - Environmental Conditions and Budgetary Impacts
- Appendix B - Current Winter Maintenance Policy
- Appendix C - Policy Review and Feedback
- Appendix D - Road Network Reclassification
- Appendix E - School Unloading Zones
- Appendix F - Transit Stop Accessibility
- Appendix G - Transit Route General Conditions
- Appendix H - Residential Road General Conditions
- Appendix I - Bike Lane General Conditions
- Appendix J - Intersection Ice Control
- Appendix K - Snow Removal on Category 1-3 Roads

## Appendix A Environmental Conditions Analysis

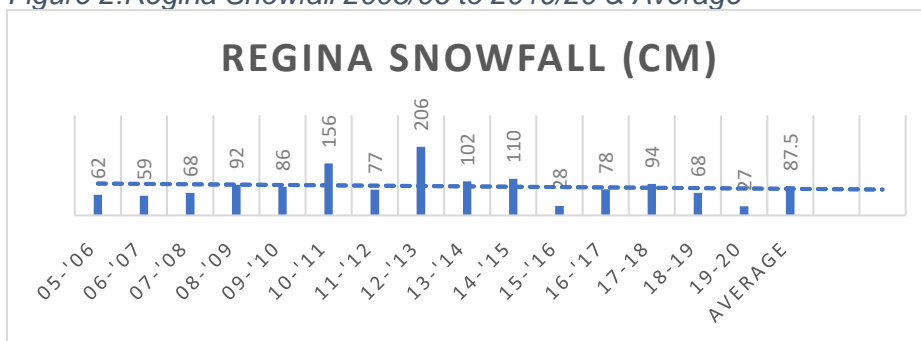
Although it is very difficult to predict the winter conditions in advance, the weather data for the past ten years indicates that the snowfall amounts in Regina have been decreasing. Figures 1 and 2 below indicate this trend. The linear trendline in Figure 2 highlights the possibility of snowfall amounts dropping in the coming years if this trend continued. The data also shows that the average monthly temperatures have been rising through the years. The number of snow days have dropped to 35 days in the last five years when compared to an average of 44 days during 2009/2010 to 2013/2014 seasons.

The above factors directly impact City of Regina's (City) Winter Maintenance Program in terms of operational and financial planning. Over the past few years, the need to systematically plow the major roads in Regina has reduced from five times a season to only four times. Similarly, major blizzards that dump 25 centimetres or more during a single event are less frequent requiring winter maintenance crews to perform only one residential plow and one alley plow in a season instead of two plows performed for each activity in earlier seasons.

*Figure 1: Regina Weather Trend*



*Figure 2: Regina Snowfall 2005/06 to 2019/20 & Average*



The Roadways Seasonal Operations branch would always be ready to tackle harsher winters and provide emergency response if required. The Winter Maintenance Reserve has a current balance of \$1.8 million and this source of funding would be used in an above average season. Assuming the milder weather trend could continue in the coming years, Administration studied the possible financial impact and it is expected that a total cost saving of \$1.223 million is possible due to reduced maintenance activities.

#### **Expected Savings:**

As indicated in the Table 1 below, there is a total saving potential of \$1.223 million due to reduced winter maintenance requirements under various programs listed in the table.

**Table 1: *Expected Savings due to milder weather trends:***

<b>Major Winter Maintenance Program</b>	<b>Expected Costs (Average 5-storms)</b> Previous average winter season based on historic data	<b>Expected Costs (Average 4-storms)</b> New average	<b>Expected Savings</b>	<b>Comments</b>
Plowing of Roads	\$2.172 million	\$1.575 million	\$0.596 million	<ul style="list-style-type: none"> <li>Based on cost of 4 systematic plows instead of 5 plows</li> <li>Based on only one residential plow instead of two plows</li> <li>Cost saving in storm, systematic and routine maintenance modes due to reduced cost of resources (manpower, City owned and hired equipment)</li> </ul>
Plowing of Alleys	\$0.131 million	\$0.066 million	\$0.066 million (reflected in Alley Tax Levy)	<ul style="list-style-type: none"> <li>Based on one alley plow instead of two.</li> </ul>
Ice Control on Roads	\$1.932 million	\$1.665 million	\$0.267 million	<ul style="list-style-type: none"> <li>Based on cost of 4 systematic plows instead of 5 plows</li> </ul>
Snow removal	\$2.519 million	\$2.159 million	\$0.360 million	<ul style="list-style-type: none"> <li>Lower snow accumulations require less snow removal</li> </ul>
		Total Expected Saving	<b>\$1.223 million</b>	

## **Winter Maintenance Policy**

### **Purpose**

The purpose of the Winter Maintenance Program is to provide winter maintenance that effectively supports the health, attractiveness, and economic viability of this community. The purpose of this Policy is to provide winter maintenance guidelines for the Winter Maintenance Program. Both the policy and program are intended to be complimentary with the City of Regina Salt Management Plan. All activities in the program, in particular the Ice Control activity, will follow the intent, guidelines, and practices laid out in the Plan.

### **Scope**

The scope of the Winter Maintenance Program and Policy addresses those public right of way assets involving:

- a) streets;
- b) sidewalks;
- c) alleys; and
- d) easements.

Not included in the scope of this Policy or the Program are public and private property or right of way assets that are located within City limits:

- a) in City parks and open spaces;
- b) on City facilities and properties or on properties that are controlled by the City;
- c) in the F.W. Hill Mall;
- d) on properties controlled by the Wascana Centre Authority;
- e) are the responsibility of Saskatchewan Highways; or
- f) on private roads, sidewalks, facilities, or properties.

The Winter Road Maintenance Program is comprised of the following general activities:

- a) snow plowing of roads, alleys and sidewalks;
- b) ice control of roads, alleys and sidewalks;
- c) snow removal;
- d) snow dump sites; (To Be Inserted at Later Date)
- e) spring runoff - catch basins and ditches; (To Be Inserted at Later Date);
- f) snow fencing; and (To Be Inserted at Later Date)
- g) success indicators, monitoring, documentation and reporting (To Be Inserted at Later Date)



**Authority** This Policy is established by City Council.

**Contact** For further information, please contact:

**Public Works Division**  
Roadways Operations Department  
P.O. Box 1790  
2425 4<sup>th</sup> Avenue  
Regina, Saskatchewan S4P 3C8  
Telephone: 306.777.7000  
Fax: 306.777.7057

**Definitions**

**Bare Pavement** – refers to a road surface condition where the wheel paths in driving lanes are generally visible. Ice, frost, or snow may remain in wheel paths which results in slippery conditions. Loose snow between or outside of the wheel paths is normally plowed. Generally 3 cm of compacted snow between or outside of the wheel paths is not plowed.

**Ice Control** – the application of aggregate abrasives and/or chemicals to a driving or walking surface to improve traction.

**Normal Winter Driving Conditions** – refers to the road conditions which result from adhering to a set of end condition statements as described in this Policy document.

**Passability** - refers to maintaining a driving lane in such a condition that police, fire, and ambulance vehicles can use the street in an emergency response.

**Peak Traffic Hours** – the hours between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. Monday to Friday, excluding holidays.

**Plow Snow (Alleys)** – the pushing of accumulated snow from the centreline of the alley surface, leaving snow ridges on each side, such that one vehicle width is provided.

**Plow Snow (Roads)** - the pushing of accumulated snow from driving or parking lanes. The resulting snow ridges may be stored in centre medians or in parking lanes adjacent to the curb.

**Plow Snow (Sidewalks)** – the pushing of accumulated snow from the sidewalk surface, resulting in a minimum one metre wide compacted snow walking surface, leaving snow ridges on both sides of the sidewalk.

**Plowed Around** – during plowing operations a plow may travel around a parked vehicle leaving a snow ridge.

**Road Categories for Systematic Plowing and Ice Control** – every road segment within the entire road network is classified into one of five categories which are defined as follows:

Category 1	Freeways/expressways including ramps and loops, major arterial roads, and any road on a designated hospital emergency route.
Category 2	Minor arterial roads, major collector roads with traffic volumes > 5,000 vehicles per day and all roads in the area referred to as Regina downtown.
Category 3	Major collector roads (with traffic volumes < 5,000 vehicles per day), industrial/commercial roads, and any minor collector or major residential local roads on a designated transit or truck route.
Category 4	Minor collector roads and major residential local roads which lead into school bus unloading zones.
Category 5	Residential local roads.
Category 6	Gravel roads.

**Road Segment** – the distance between two intersections.

**Rutting** – refers to the wheel path troughs in compacted snow surfaces.

**Salt Management Plan** – the most recent version of the City’s “Plan” developed in accordance with Environment Canada’s “Code of Practice for the Environmental Management of Road Salts”.

**Snow Event** – a combination of snow or wind causing snow to accumulate on driving or walking surfaces. For the ice control activity, snow event shall also include rain or freezing rain or other weather conditions that have a similar effect on road surfaces. The end of a snow event is when winter precipitation no longer accumulates on roadway surfaces for a sufficient period of time to allow complete systematic plowing and ice control to be completed as specified in this Policy.

**Snow Removal** – refers to the reducing or cleaning away of snow ridges or piles. Typically, this is accomplished by redistributing this excess snow to existing snow ridges on the same block and if this is not possible then it is removed by loading and hauling off site.

**Snow Ridge**- the row of excess snow formed by plowing roads, alleys, or sidewalks.

**Systematic Ice Control (Roads)** – refers to a methodical approach taken to complete one ice control cycle on the road network as specified in this Policy following systematic road plowing or the end of a snow event.

**Systematic Plowing (Roads)** – refers to a methodical approach taken to complete one plowing cycle on the road network as specified in this Policy following the end of a snow event.

**Typical Winter** – refers to the average weather conditions for Regina between October and April including approximately: two blizzards lasting six hours or more per year; 30 blizzard hours per year; 50 days with snow fall per year; total annual snowfall of 105 cm; temperature ranges from 10°C to -50°C; and individual snow events less than 10 cm.

**Windrowing** – multiple snow ridges placed in an open field parallel with the road to minimize drifting snow from collecting on the road surface.

## Policy Statement

### 1.0 GENERAL

The performance and end condition objectives outlined by this policy include the following underlying assumptions:

- a) That the operational activities are being undertaken during a typical weather event during a typical winter season. The City acknowledges that Regina may be subject to extreme or extraordinary weather which may diminish the City's ability to achieve the policy objectives within the stated time frames.
- b) The activities detailed herein attempt to reduce hazardous roadways conditions caused by winter weather; however, the City acknowledges that weather conditions are beyond the City's control and dangerous conditions may nonetheless result despite the City's efforts.
- c) That winter road safety is a cooperative activity between users of the roadways and the City. The City expects that users of the roadways will

exercise reasonable care for their own safety when travelling the roadways during winter conditions.

There are several general objectives which support the purpose of the program policy:

Objective #1	All roads are made passable for emergency (fire, police, ambulance) response vehicles.
Objective #2	Normal winter driving conditions and reasonable sidewalk access are provided on key routes through systematic plowing and sanding operations on priority one roads.
Objective #3	Normal winter driving conditions and reasonable sidewalk access are provided along regional commercial developments and secondary routes through systematic plowing and sanding operations on priority two roads.
Objective #4	Normal winter driving conditions are provided along tertiary routes through systematic plowing and sanding operations on priority three roads.
Objective #5	Safety and travel efficiency are provided through the plowing and removal of windrows from in front of guardrails and off of bridge decks.
Objective #6	Alleys are passable for the collection of solid waste collection and access by utility companies and the public.
Objective #7	Normal winter driving conditions are maintained through snow removal operations.
Objective #8	Residential and low volume routes are made passable through plowing operations.
Objective #9	Snow clearing is provided at City owned facilities to provide reasonable parking and access.
Objective #10	Snow clearing is provided on pathways in some parks and connecting walkways and in some open spaces which are typically in the vicinity of recreation centres.
Objective #11	Reasonable sidewalk access is provided through enforcement of the Regina Clean Property Bylaw, 1997.

When severe weather conditions reach a point where winter maintenance operations can not continue without compromising public and/or employee safety, temporary road closures may be implemented.

The Manager of Winter Maintenance, or his/her designate, makes the ultimate decision to temporarily close a road. When this occurs, the Public Works Dispatch Office shall contact:

- Traffic Operations Command Centre;
- Fire, Police, and Emergency Medical Services;
- City Central and City Manager's Office;
- Communications Division;
- Local radio/television newsrooms and the Leader Post.

The Manager of Winter Maintenance is responsible for the day-to-day operation and coordination of the Roadway Operations Winter Maintenance Program.

## **2.0 PLOWING**

There are three operating environments involved in the snow plowing operation:

- During a snow event;
- Systematic road plowing; and
- Routine maintenance

### **2.1 ROADS**

The City will classify the road network for snow plowing activities. In all three operating environments, road snow plowing will be conducted in accordance with the Road Categories for Systematic Plowing and Ice Control.

#### **a) During a Snow Event:**

- **General**

During a snow event, the first priority objective for road snow plowing is to maintain passability on roads for emergency response vehicles. As the end of the storm approaches, this operational objective becomes increasingly shared with the next operational objective, that of systematically plowing the road network. Plowing will be initiated on Category 1 and 2 roads when approximately 5 cm of snow has accumulated on the road surface during a snow event. When severe snow events occur, operations to establish and maintain passability may only focus on Category 1 and 2 roads.

- **Locations**

All roads which are not passable for emergency response vehicles.

- **Time Frames**

Time frames are not applicable during a snow event. Operations will continuously cycle for the duration of the snow event. Following typical snow events, all roads will be passable for emergency response vehicles within twenty-four hours from conclusion of snow event.

- **End Conditions**

Passability is maintained on as many roads as resources and weather conditions permit.

Snow and ice accumulation could remain on the road surface

Snow ridges across driveways, intersections, alleys, transit stops, and around parked vehicles may not be reduced in height.

**b) Systematic Plowing:**

- **General**

During systematic road plowing, the operational objective is to re-establish traffic flow in driving lanes and designated turning lanes. Systematic road plowing operations will be triggered by the following snow accumulations during a single snow event:

Category 1 and 2 roads – 5 cm

Category 3 and 4 roads – 10 cm

Category 5 roads – 25 cm

Category 6 roads – 10 cm

Systematic road plowing operations may also be triggered in other circumstances where there are several snow accumulations of less than 5 cm, and the Manager of Winter Maintenance will make the determination to call a systematic response if warranted.

- **Locations**

All roads provided snow accumulation has met or exceeded trigger values for each category.

- **Time Frames**

Systematic road plowing will be completed within the following time frames from end of snow event:

Category 1 roads within 24 hours  
Category 2 roads within 36 hours  
Category 3 roads within 48 hours  
Category 4 roads within 60 hours  
Category 5 roads – no time frames specified  
Category 6 roads – within 60 hours

- **End Conditions**

Systematic road plowing is considered to be complete when the following conditions are met.

All Roads

Snow ridges will be reduced to a maximum height of 30 cm across driveways, intersections, alleys and signed unloading zones (including for school buses adjacent to schools and in front of senior's complexes with over 20 units in a single building).

Snow ridges will be reduced to a maximum height of 15 cm on Transit stops.

Snow ridges of any height may be left around parked vehicles.

Snow ridges placed in parking lanes may encroach up to 30 cm on to the sidewalk.

The driving lanes and designated turning lanes will be plowed to the following conditions during systematic plowing:

- Category 1 and 2 roads to bare pavement as defined
- Category 3 and 4 roads to a compacted snow surface of approximately 8 cm or less depth
- Category 5 roads to a compacted snow surface
- Category 6 roads to a compacted snow surface of approximately 8 cm or less depth

**c) Routine Maintenance**

- **General**

During routine maintenance, the operational objectives are to:

- a) Complete post snow event cleanup on the road network to establish normal winter driving conditions as defined for each category of road;
- b) Maintain the road network to normal winter driving conditions and correct deficiencies which result from cumulative light snow events, spot drifting, or traffic effects; and
- c) Prepare for future snow events.

Category 5 roads may be systematically plowed to reduce snow pack depth resulting from cumulative snow events.

- **Locations**

Routine maintenance is conducted on all roads in accordance with the Road Categories for Systematic Plowing and Ice Control.

- **Time Frames**

- a) Post snow event cleanup will be completed within the following time frames following systematic plowing completion:
  - Category 1 and 2 roads – seven days
  - Category 3 and 4 roads – 14 days
  - Category 5 roads – 21 days
  - Category 6 roads – 14 days
- b) Time frames are not applicable when maintaining the road network to normal winter driving conditions and correcting deficiencies which result from cumulative light snow events, spot drifting, or traffic effects.
- c) Time frame requirements are not applicable when preparing for future snow events.

- **End Conditions**

Normal winter driving conditions are considered to be established on roads when the following conditions are met:

- Snow ridges will be reduced to a maximum height of 30cm across driveways, intersections, alleys and signed unloading zones



(including for school buses adjacent to schools and in front of seniors' complexes with over 20 units in a single building).

- Snow ridges placed in parking lanes may encroach up to 30 cm on to the sidewalk. The outside base edge of the snow ridge will not exceed 60 cm from the curb face.
- On bridge decks and in subways snow ridges will generally be less than 1 metre high or 1.5 metres wide.
- Snow ridges in front of guard rails will generally be less than 30 cm in height.
- Maximum height of snow ridges within transit stops will be 15 cm and will not encroach onto the sidewalk.
- Transit stops will be a minimum of 12 m in length.

Driving lanes and designated turning lanes will be maintained to surface conditions as follows:

- Category 1 and 2 roads to bare pavement including a portion of the parking lanes adjacent to a snow ridge.
- Category 3 and 4 roads rutting in excess of approximately 8 cm will be addressed.
- Category 5 roads rutting in excess of approximately 10 cm will be addressed.
- Category 6 roads rutting in excess of approximately 8 cm will be addressed.

## 2.2 ALLEYS

The City does not classify the alley network for the purpose of prioritizing snow plowing activities in alleys.

### a) During a Snow Event

- **General**

Typically, alleys will not be plowed during a storm event.

### b) Systematic Plowing

- **General**

During systematic alley plowing, the operational objective is to return the alley network to normal winter driving conditions. Systematic alley plowing operations are triggered by a 25 cm snow accumulation during a single snow event.

- **Locations**

All alleys.

- **Time Frames**

Systematic alley plowing will be completed within 96 hours from the end of a snow event.

- **End Conditions**

Normal winter driving conditions are considered to be established on alleys when the following conditions are met:

- The compacted snow surface width will provide single vehicle passage.
- Snow ridges may be formed on both sides of the plowed surface.
- Snow ridges are not reduced in height across garages, driveways, or parking lot entrances.

### c) Routine Maintenance

- **General**

During routine maintenance, the operational objective is to maintain normal winter driving conditions in alleys as defined. Alleys may be systematically plowed to reduce snow pack depth resulting from cumulative snow events.

- **Time Frames**

No time frames specified.

- **End Conditions**

The compacted snow surface width will provide single vehicle passage.

Rutting in the compacted snow surface will not exceed approximately 10 cm.

## 2.3 SIDEWALKS

The City does not classify the sidewalk network for the purpose of prioritizing snow plowing activities on sidewalks.

- a) **During a Snow Event**

Systematic sidewalk plowing operations will be triggered by 5 cm snow accumulations during a single snow event.

- b) **Sidewalk Plowing**

- **General**

The City will plow and maintain specific sidewalk locations.

- **Locations**

- Any sidewalk adjacent to a City owned building or property that is located within the area noted in Schedule B of The Clean Property Bylaw No. 9881.
    - Any sidewalk adjacent to a City owned building or parking lot that is regularly used by the public during the winter season, excluding outdoor rinks.
    - Any sidewalk adjacent to bridge decks and subways.
    - Any sidewalk adjacent to transit stops on the Heritage bus route which is not covered by The Clean Property Bylaw No. 9881.
    - Adjacent to no frontage locations.
    - Adjacent to storm channel and railway crossings on Category 1 and 2 streets.

- Adjacent to vacant land on Category 1 and 2 streets.
- Adjacent to city owned parks on Category 1, 2, 3, and 4 streets.
- Adjacent to city owned parks that are next to a public school.
- Adjacent to city owned buildings or parks not accessed by the public in winter on Category 1 and 2 streets.
- Adjacent to hospital gateway (sidewalks both sides on 14<sup>th</sup> Avenue from Broad Street to the alley east of Halifax Street).
- Adjacent to Core Community Park (Quebec Street side).

- **Time Frames**

Within 72 hours from end of snow event.

- **End Conditions**

Sidewalk locations will be maintained to a general width of 1 metre.

Sidewalk locations will be maintained to a compacted snow surface with a maximum depth of approximately 5 cm.

### 3.0 ICE CONTROL

There are three operating environments involved in the ice control operation:

- During a snow event;
- Systematic ice control; and
- Routine maintenance

Typically, ice control materials are only applied intermittently at spot sections along roads, alleys, or sidewalks. Continuous or uninterrupted application of ice control materials is not standard practice.

To determine if a spot section is treated with ice control material during any given cycle, staff judge the relative visibility of previously applied materials.

#### 3.1 ROADS

The City will classify the road network for ice control activities. In all three operating environments, ice control will be conducted in accordance with the Road Categories for Systematic Plowing and Ice Control. For the ice control activity, time frames are typically expressed as a cycle frequency. Cycle frequency refers to the time interval between successive passes on a road to apply materials as judged by City staff.

## a) During a Snow Event

### • General

During a snow event, the operational objective of the ice control activity is to slow the rate of deterioration in driving conditions.

### • Locations

During a snow event ice control operations on Category 1, 2, 3, and 4 roads will be initiated near the start of snow or freezing rain precipitation.

As snow or freezing rain precipitation continues, ice control operations will be increasingly directed, as determined by City staff, to Category 1 and 2 roads only.

### • Time Frames

From near the start of snow accumulation to a point where approximately 2 cm of snow has accumulated during a single snow event on the road surface, cycle frequency will be as follows:

Category 1 roads (posted speeds > 70kph)	4 hour cycle
Category 1 roads (posted speeds < 70kph)	12 hour cycle
Category 2 roads	12 hour cycle
Category 3 roads	24 hour cycle
Category 4 roads	24 hour cycle

After approximately 2 cm of snow accumulation during a single snow event, cycle frequency will be as follows:

Category 1 roads (posted speeds) > 70kph	4 hour cycle
Category 1 roads (posted speeds) < 70kph	5 hour cycle
Category 2 roads	5 hour cycle
Category 3 and 4 roads	Not specified

### • End Conditions

The effectiveness of ice control can not be pre-determined.

Spot sections of roads that are typically treated, based on the judgement of staff are:

- sections leading up to sign or signal controlled intersections and crosswalks;

- bridge decks and subways including the approach to and exit from;
- grades greater than 5%;
- ramps and merging lanes;
- curves located on Category 1 – 4 roads; or
- public and separate school frontage roads and those intersections immediately adjacent to school properties.

#### **b) Systematic Ice Control**

- **General**

During systematic ice control operations, the operational objective is to complete one cycle of ice control on spot sections of all roads which have been systematically plowed.

- **Locations**

All roads which have been systematically plowed.

- **Time Frames**

Systematic ice control will be completed within the following time frames:

Category 1 and 2 roads within four hours of systematic plowing.

Category 3 and 4 roads within eight hours of systematic plowing.

Category 5 and 6 roads within 24 hours of systematic plowing.

- **End conditions**

The effectiveness of ice control can not be pre-determined.

Spot sections of roads that are typically treated, based on the judgement of staff are:

- sections leading up to sign or signal controlled intersections and crosswalks;
- bridge decks and subways including the approach to and exit from;
- grades greater than 5%;
- ramps and merging lanes;
- curves located on Category 1 – 4 roads; or
- public and separate school frontage roads and those intersections immediately adjacent to school properties.

### c) Routine Maintenance

- **General**

During routine maintenance for the ice control activity, the operational objectives are to:

- Complete one cycle of ice control following post snow event cleanup operations. This cycle will be similar to that provided during systematic ice control.
- Conduct routine ice control on each road category at a pre-determined cycle frequency.

- **Time Frames**

The one cycle of ice control will be completed within eight hours following post snow event clean-up operations.

Routine ice control cycle frequency will be as follows:

Category 1 roads (posted speeds > 70kph)	12 hour cycle
Category 1 roads (posted speed < 70 kph)	24 hour cycle
Category 2 roads	24 hour cycle
Category 3 roads	48 hour cycle
Category 4 roads	48 hour cycle
Category 5 roads	120 hour cycle
Category 6 roads	120 hour cycle

- **End Conditions**

The effectiveness of ice control can not be pre-determined.

End conditions are judged solely on whether cycle frequency time frames have been met.

Spot sections of roads that are typically treated, based on the judgement of staff are:

- sections leading up to sign or signal controlled intersections and crosswalks;
- bridge decks and subways including the approach to and exit from;
- grades greater than 5%;
- ramps and merging lanes;
- curves located on Category 1 – 4 roads; or

- public and separate school frontage roads and those intersections immediately adjacent to school properties.

### 3.2 Alleys

The City does not classify the alley network for the purpose of prioritizing ice control activities in alleys.

Ice control activities for alleys are conducted as time and resources permit. No time frames are specified for ice control in alleys.

- **Locations**

Alleys that will be considered for ice control activity must:

- Have a majority of commercial or apartment building properties adjacent to the alley;
- Be adjacent to school parking lot entrances or school bus unloading zones that are located in an alley; or
- Have grades exceeding 5%

- **End Conditions**

The effectiveness of ice control can not be pre-determined.

Ice control will be applied on spot sections at the alley exit points and on grades exceeding 5%.

### 3.3 Sidewalks

The City does not classify the sidewalk network for the purpose of prioritizing ice control on sidewalks.

- **Locations**

- Any sidewalk adjacent to a City owned building or property that is located within the area noted in Schedule B of The Clean Property Bylaw No. 9881.
- Any sidewalk adjacent to a City owned building or parking lot that is regularly used by the public during the winter season, excluding outdoor rinks.
- Any sidewalk adjacent to bridge decks and subways.
- Any sidewalk adjacent to Transit stops on the Heritage bus routes which are not covered by The Clean Property Bylaw No. 9881.
- Adjacent to no frontage locations.



- Adjacent to storm channel and railway crossings on Category 1 and 2 streets.
- Adjacent to vacant land on Category 1 and 2 streets.
- Adjacent to city owned parks on Category 1, 2, 3, and 4 streets.
- Adjacent to city owned parks that are next to a public school.
- Adjacent to city owned buildings or parks not accessed by the public in winter on Category 1 and 2 streets.
- Adjacent to hospital gateway (sidewalks both sides on 14<sup>th</sup> Avenue from Broad Street to the alley east of Halifax Street).
- Adjacent to Core Community Park (Quebec Street side).

- **Time Frames**

Ice control activities following freezing rain events will be completed within 72 hours from end of event.

Ice control activities on compacted snow surfaces as determined by staff have no time frame for completion specified.

- **End Conditions**

The effectiveness of ice control can not be predetermined.

End conditions are not specified.

## 4.0 SNOW REMOVAL

- **General**

Plowing and ice control activities take precedence over snow removal activities both during a snow event and during systematic plowing or systematic ice control operations. Snow removal operations may be suspended at the beginning of snow events or during systematic operations so resources can be reallocated to address non-typical winter conditions and higher priority objectives.

- **Locations/Time Frames/ End Conditions**

- a) At the following locations, snow ridges of any height caused by plowing will be cleared from those areas within the time frames noted.
  - In school bus unloading zones at schools within 48 hours of road plowing (curb face showing).
  - In unloading zones in front of seniors complexes with over 20 units in a single building within 14 days of plowing.

- In disabled metered parking stalls within 24 hours of plowing.
- b) At the following locations, snow ridge heights caused by plowing will comply with the sight line controls as set out in section 69 and Schedule H of the Traffic Bylaw within the time frames noted:
  - At intersections adjacent to school properties and, at school fence gates that are opening onto roads within seven days of plowing. The snow ridge will be reduced at these locations to a maximum height of 30 cm.
  - At signal or sign controlled pedestrian corridors within 14 days of plowing.
  - At intersections on Category 1 and 2 roads, within 14 days of plowing.
- c) Snow removal involving load and hauling off site will generally be initiated when:
  - On blocks where the school bus unloading zones are located, snow ridges in excess of 75 cm exist – within 14 days of plowing.
  - In metered parking stalls, snow ridges in excess of 60 cm within 14 days.
  - Snow ridges generally greater than 1 m in height that impact travel widths or sight lines as determined by City staff on:
    - Category 1 and 2 roads;
    - Roads within the area bounded by Victoria Avenue to College Avenue and Albert Street to Broad Street;
    - 4th Avenue to Dewdney Avenue and Albert Street to Toronto Street;
    - Roads immediately adjacent to Regina General Hospital;
    - 14th Avenue from Halifax Street to Broad Street;
    - 15<sup>th</sup> Avenue from Broad Street to Winnipeg Street; and
    - Category 3 roads needed to provide City Transit with adequate travel width.



## Appendix C Policy Review and Feedback

The Winter Maintenance Policy review process included research of other municipalities as well as extensive engagement with residents, and external and internal stakeholders. The feedback was used to identify the most critical common areas of improvement in winter maintenance that needed to be addressed.

### Identification of Key Areas of Concern Based on Collective Feedback:

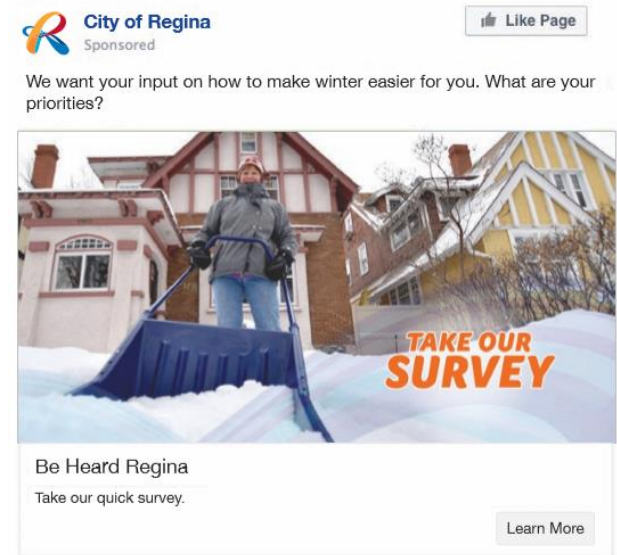
1. Ice control on intersections
2. General conditions of residential roads
3. Accessibility of sidewalks around transit stops
4. General conditions of sidewalks
5. Safety around school zones
6. General conditions around Transit routes
7. General conditions of Bike lanes
8. Simplifying Policy document

### Survey:

A winter Maintenance Policy Review Survey was conducted under '*Be Heard Regina*' initiative during Q1, 2020 to gather feedback from residents, businesses and anyone who was impacted by Winter Maintenance Policy service levels and could provide some useful feedback.

Multiple communication methods were adopted to reach out to maximum residents, businesses, stakeholders and visitors. Some of the communication channels included Public Service Announcements (PSA), media interviews, City of Regina's social media handles like Facebook and Twitter, City's winter webpage and stakeholder engagement.

Approximately 3000 residents and businesses responded to the survey and provided valuable feedback by answering a range of multiple-choice questions and writing comments in response to open-ended questions designed to encourage a richer feedback for final evaluation and analysis purpose. Quantitative and Qualitative data from the survey results was analyzed to identify top five areas of concern relating to winter maintenance.



### Identification of Critical Areas of Concern Based on Survey Feedback:

1. Ice control at intersections
2. General conditions of residential roads
3. Timely plowing of snow
4. General conditions of major roads
5. Sidewalks maintenance
6. Simplification of the policy document for better understanding



### Survey Findings:

As evident from the Table 1 below, generally the respondents are satisfied with the current level of service towards majority of the policy parameters except '*general satisfaction with ice control and snow plow timelines on local/ residential roads*' for which the satisfaction level seems quite low (only 35%).

**Table 1 Winter Maintenance Review Survey Findings**

<b>Key Policy parameter</b>	<b>Respondents % Satisfied with current LOS or No comments</b>	<b>Respondents % Not Satisfied</b>
General satisfaction with road plowing and winter road maintenance	74%	26%
General satisfaction with snow plowing timelines	74%	26%
General satisfaction with ice control and snow plowing timelines on major roads	72%	28%
General satisfaction with ice control and snow plowing timelines on local/ residential roads	35%	65%
General satisfaction with current approach to snow removal	79%	21% However, 59% of these do not want an increased tax component to support snow removal enhancement
Sidewalks	76%	23% However, 53% of these do not want an increased tax-component to assist with the service enhancement
Priority Roads ·General satisfaction with road categorization	80%	20%

**Survey Summary:**

## Survey Report

14 February 2020 - 05 April 2020

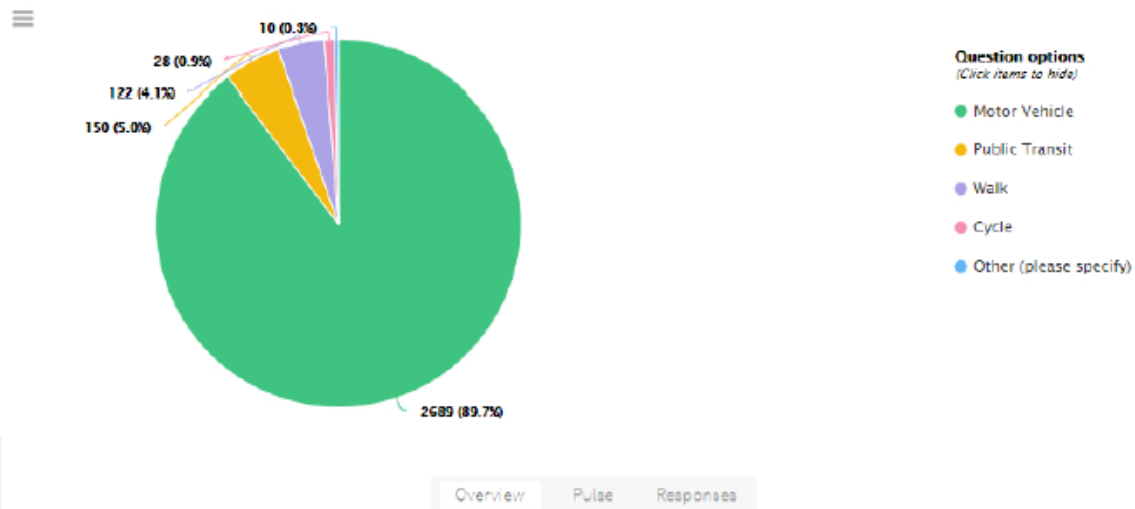
# Winter Maintenance Policy Review Survey

PROJECT: Winter Maintenance Policy Review

**Be Heard Regina**

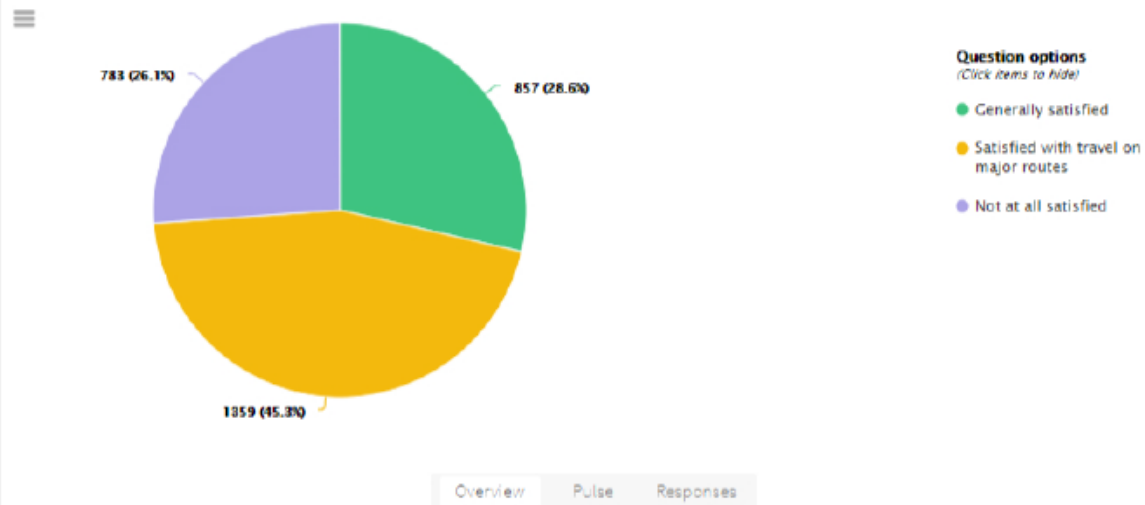
engagement   
by Bang the Table

Q3 What is your primary way to get around Regina in winter?



(2999 responses, 0 skipped)

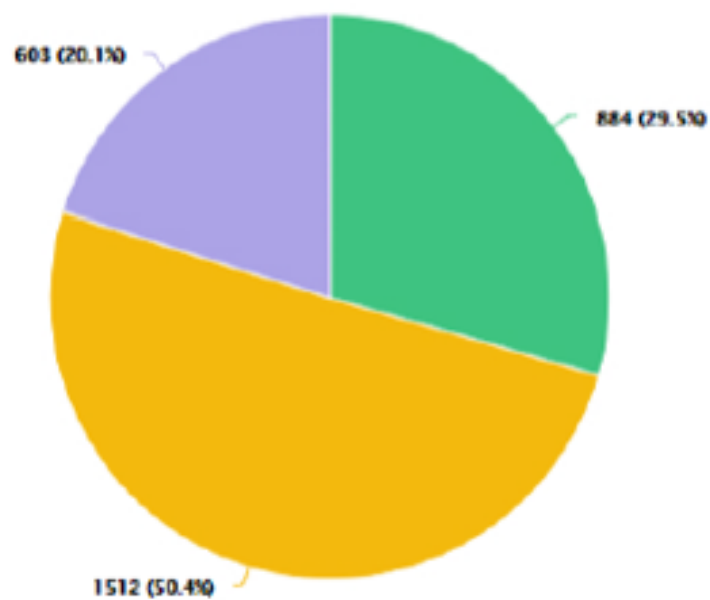
Q4 Thinking back over the last two winters, how satisfied are you with how the City plows and maintains roads from November 1 to March 31?



(2999 responses, 0 skipped)



Q5 How satisfied are you with the above categorization?



**Question options**

*(Click items to hide)*

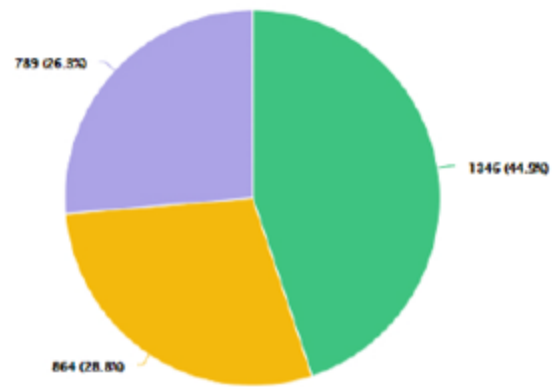
- Satisfied
- Somewhat satisfied
- Not at all satisfied

Overview

Pulse

Responses

Q8 The City of Regina's snow plowing activities typically occur within a reasonable amount of time.

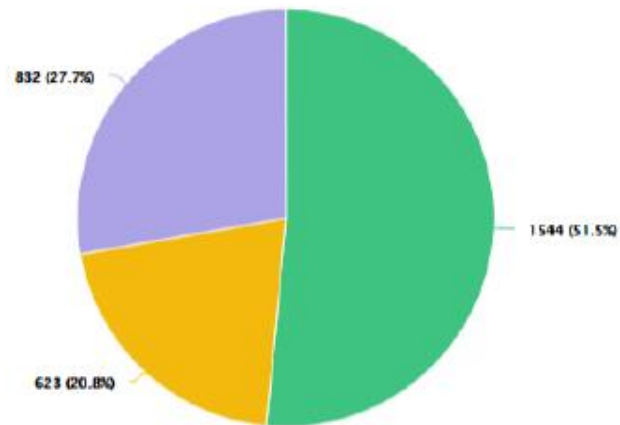


Question options  
(Click items to hide)

- Agree
- Neither agree or disagree
- Disagree

Overview Pulse Responses

Q9 I am satisfied with ice control and snow plowing of major roads.



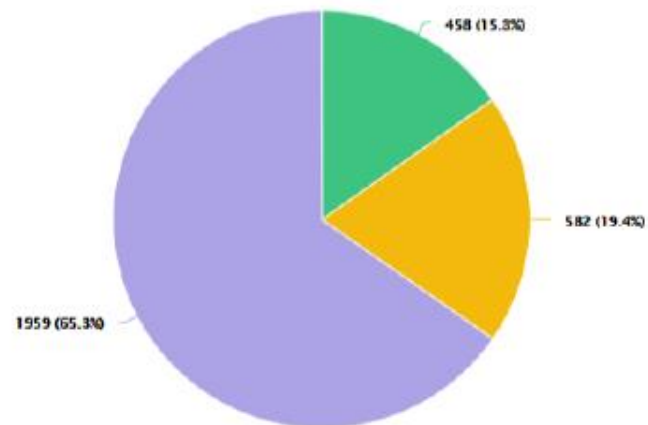
**Question options**  
(Click items to hide)

- Agree
- Neither agree or disagree
- Disagree

Overview Pulse Responses

(2999 responses, 0 skipped)

Q10 I am satisfied with ice control and snow plowing of residential streets.

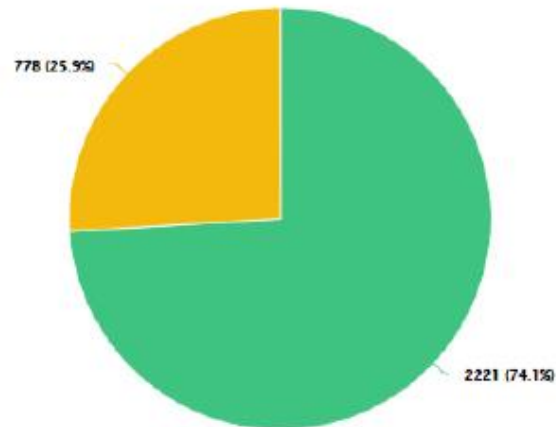


**Question options**  
(Click items to hide)

- Agree
- Neither agree or disagree
- Disagree

Overview Pulse Responses

Q14 Were you aware that the City has a Winter Maintenance policy to guide how streets are plowed during the winter?



**Question options**

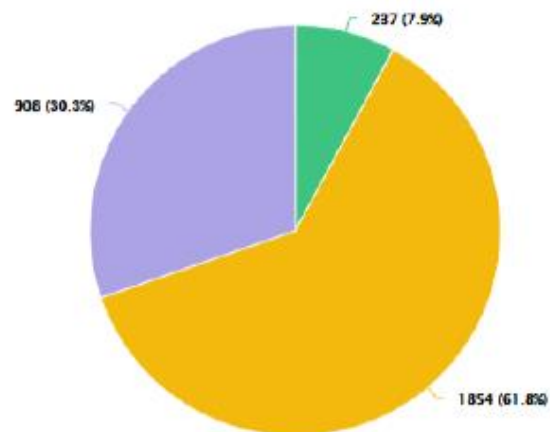
*(Click items to hide)*

- Yes
- No

Overview Pulse Responses

(2999 responses, 0 skipped)

Q15 How well does the City communicate its priorities for winter snow plowing and maintenance?

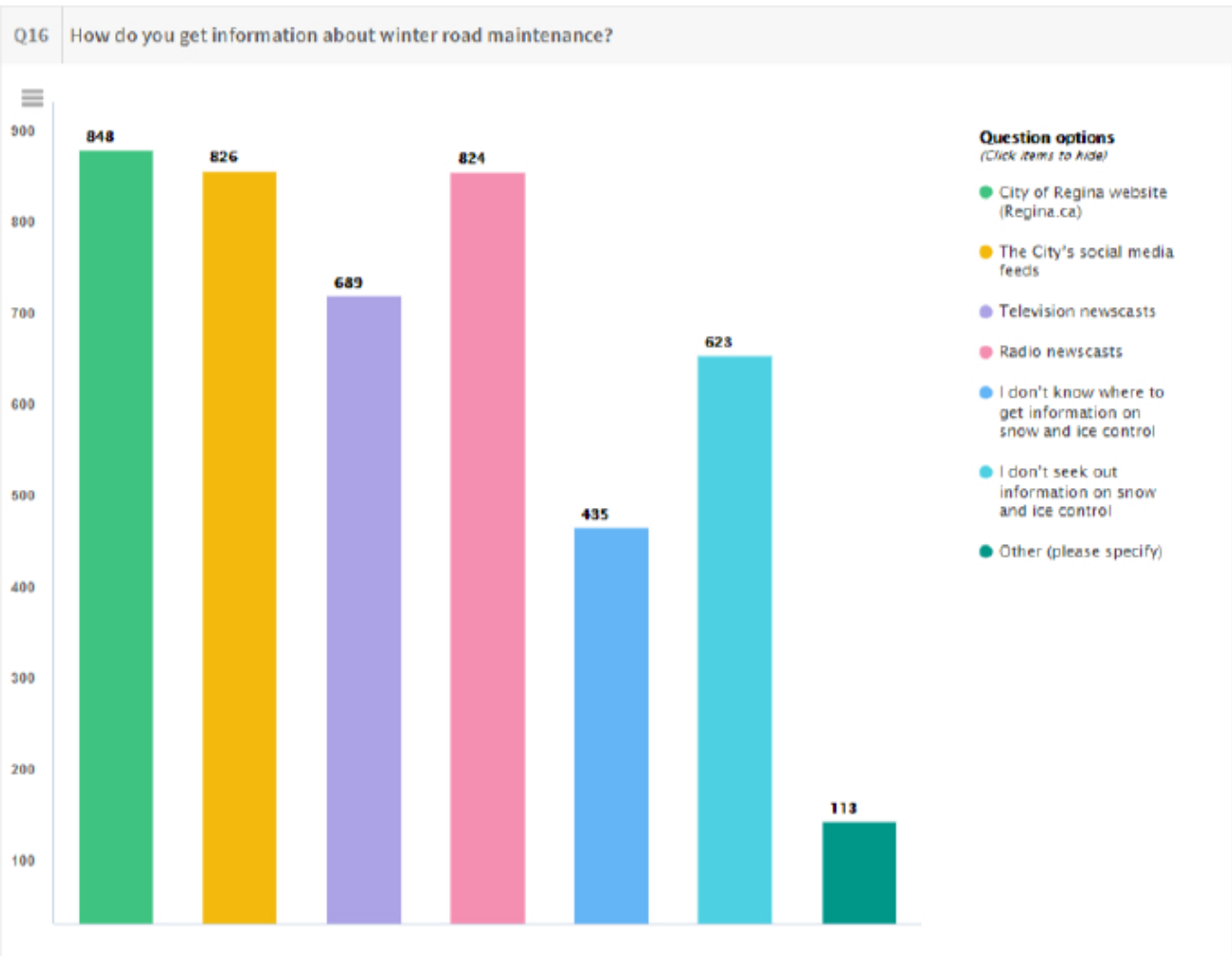


**Question options**

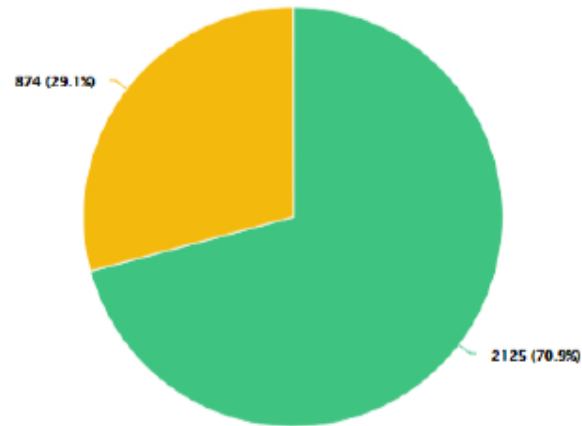
*(Click items to hide)*

- Very well. I know when and to what levels snow plowing and sanding will take place.
- Adequate. I have a general idea as to when major roads will be plowed and sanded.
- Not well. I am not sure how the City prioritizes roads and levels of service.

Overview Pulse Responses



Q17 I am aware of the City's approach to winter sidewalk maintenance.



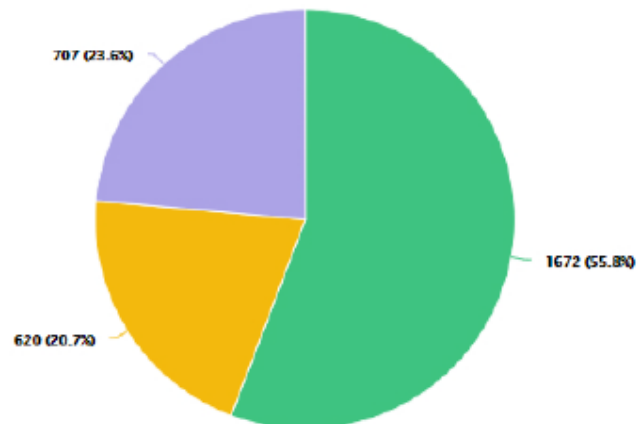
**Question options**  
(Click items to hide)

- Yes
- No

Overview Pulse Responses

(2999 responses, 0 skipped)

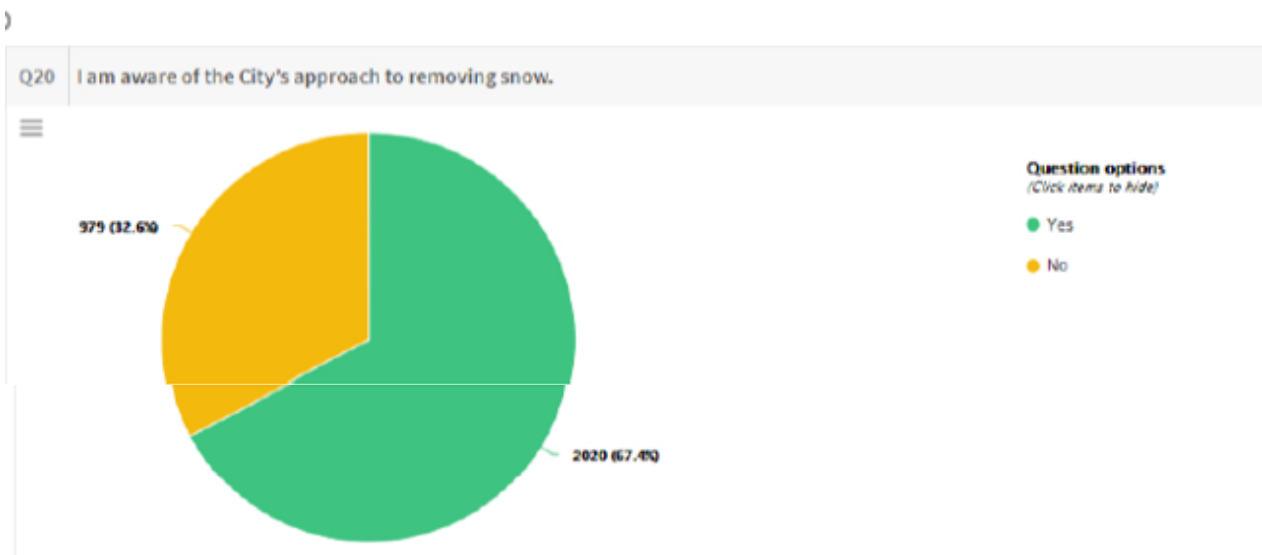
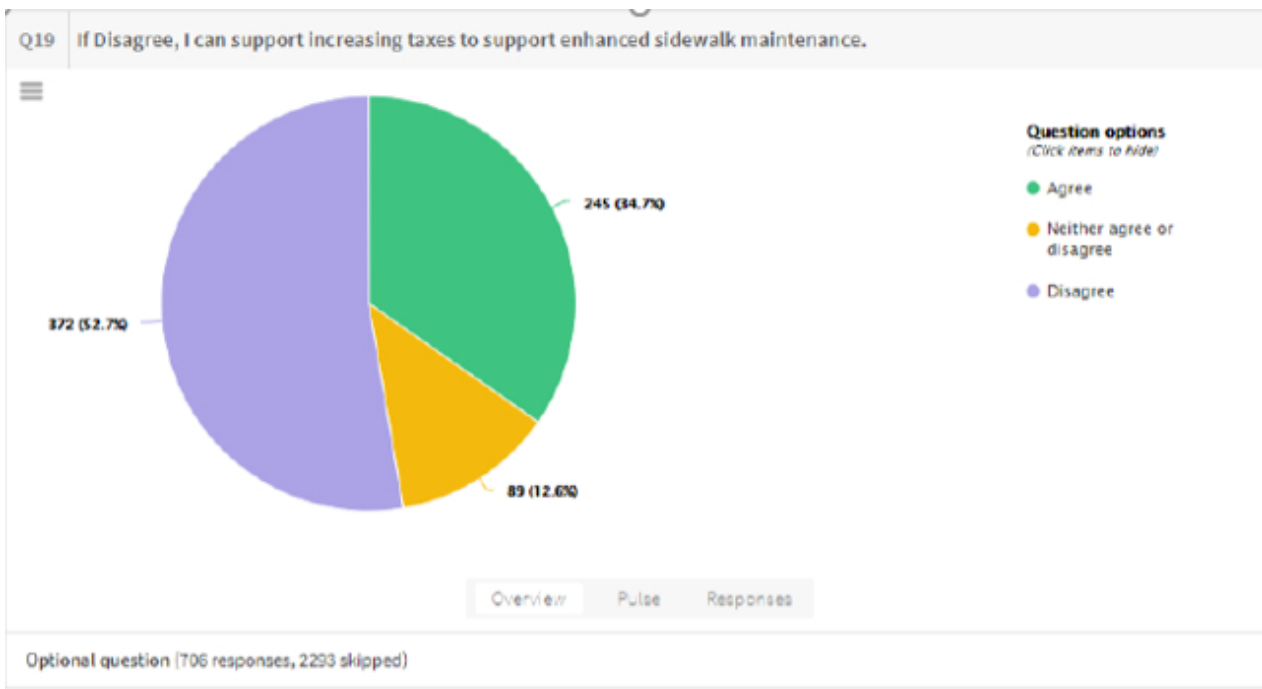
Q18 I can support the approach the City is taking to sidewalk maintenance, including requiring businesses and encouraging citizens to be responsible for their own sidewalk clearing.



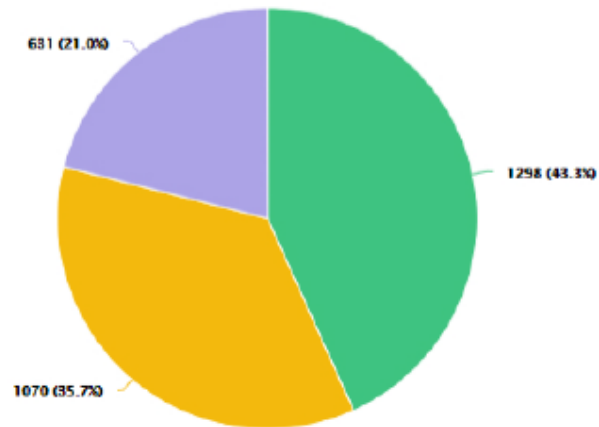
**Question options**  
(Click items to hide)

- Agree
- Neither agree or disagree
- Disagree

Overview Pulse Responses



Q21 I can support the City's approach to removing snow.



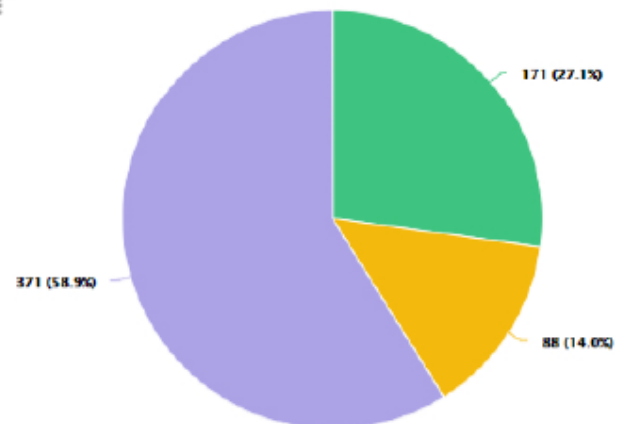
**Question options**  
(Click items to hide)

- Agree
- Neither agree or disagree
- Disagree

Overview Pulse Responses

(2999 responses, 0 skipped)

Q22 If Disagree, I can support increasing taxes to support enhanced snow removal.



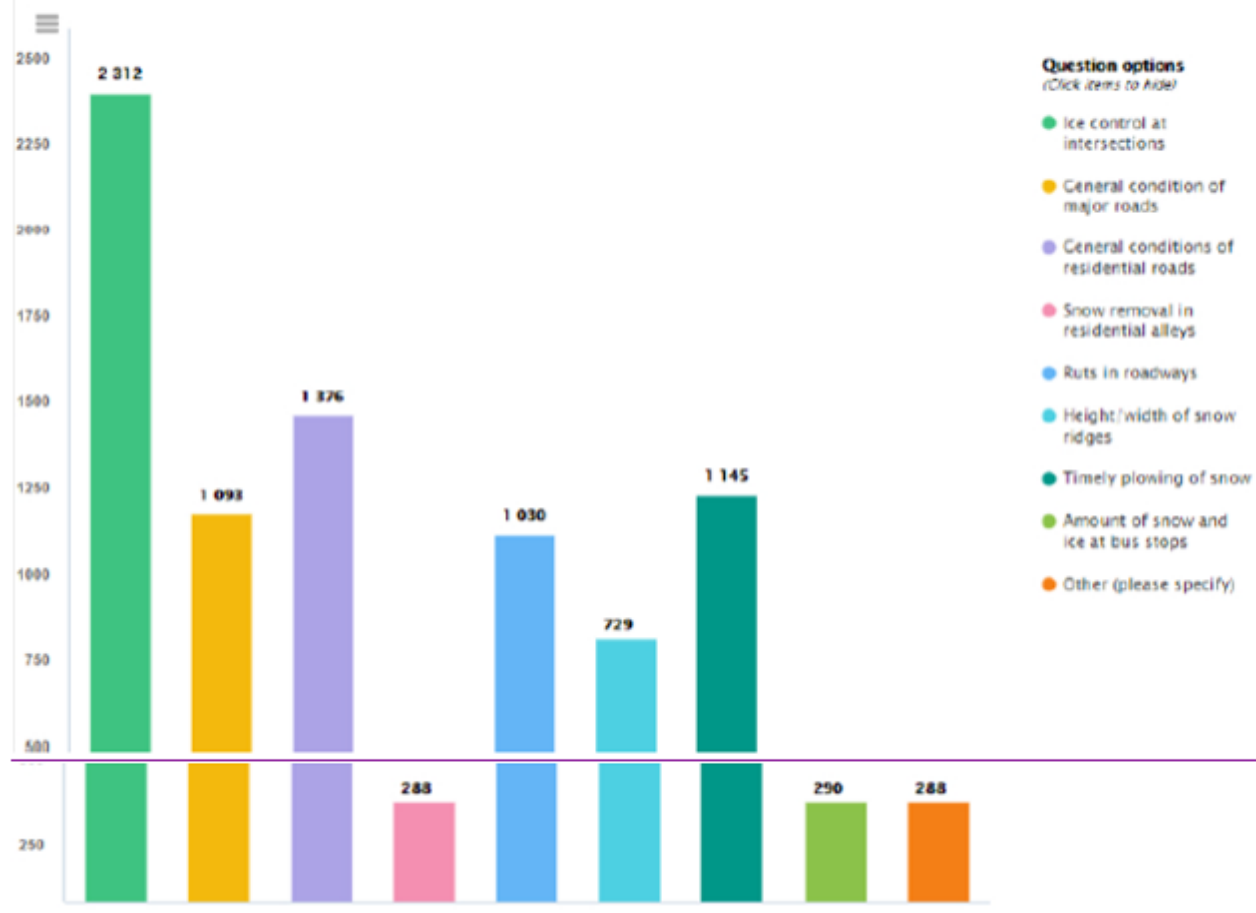
**Question options**  
(Click items to hide)

- Agree
- Neither agree or disagree
- Disagree



Q25

As a resident, I would prioritize the following three areas for improvements to winter road maintenance. Please select your top three choices.



**Table 2: Qualitative data from the Winter Maintenance Policy Review Survey:**  
(based on responses to the open-ended questions)

Other Observations from Survey Results	Evidence
Demand for enhanced residential winter maintenance programs including ice control, road plowing and frequent removal to avoid slippery conditions and ruts	Over 350 comments
Better coordination required between plowing and sanding activities. Especially, the time gap between plowing and sanding activity should be minimized	Over 300 comments
<ul style="list-style-type: none"> <li>- Residents' want to establish a system of getting accountability and assurance from those private property owners who do not clear their sidewalks on time causing inconsistency around the city.</li> <li>- Demand for strict enforcement of existing sidewalk clearing clause in the <i>Clean Property Bylaw</i> for businesses, commercial property owners.</li> <li>- Some suggestions for creating a new bylaw provision enforcing citywide residents/ private property owners to clear their walks within 48 hours like in other jurisdictions.</li> </ul>	Over 300 comments
Suggestions regarding making small changes in the current operational practices in order to achieve compliance to the levels of service for several policy parameters	Based on over 300 comments
Feedback to not raise taxes to achieve desired levels of service	Over 100 comments
Improve School zones plowing and removal. Do not leave ridges on either side of the streets around schools	Over 100 comments
Eliminating unnecessary cycling of roads with sanding equipment when no freeze thaw conditions	Over 100 comments
Finding: Residents' general awareness about current Winter Maintenance Policy not sufficient. Several comments could have been avoided if sufficient awareness was there.	Several examples in the survey comments
Improve communication relating to winter activities as well as policy.	Over 70
Full scale plowing activity on all roads should start while it is still snowing. Residents want all plows to be out even when <5cm snow on the ground or just at the start of snowfall	Over 60 comments
Many residents commented that the current WM policy is very good. No need to change. Just need to properly implement	Over 100 comments

### **Stakeholder Feedback:**

Several internal and external stakeholders in the city and their associates get impacted by City's Winter Maintenance Policy. City Administration identified such stakeholders and engaged with them through meetings, phone calls and emails to get their feedback on current policy as well as expectations relating to improved winter maintenance service levels.

Feedback received from the stakeholders was utilized to identify their key concerns relating to winter maintenance.

Following are the key stakeholders who were approached for feedback:

#### *Internal Stakeholders:*

Transit and Fleet (including Transit Operations, Paratransit & Revenue Services, Fleet Maintenance), Regina Fire & Protective Services, Emergency Preparedness and Business Continuity, Service Regina, Parking Services, Bylaw Enforcement, Citizen Services

#### *External Stakeholders:*

Regina Public and Catholic School Boards, Regina Downtown business Improvement District (RBID), Saskatchewan Health Authority (SHA), City of Regina Accessibility Committee, Pedestrian School Traffic Safety Committee, Saskatchewan General Insurance (SGI)/ City of Regina/ Regina Police Service Traffic Safety Committee, Regina Police Services, Business Owners & Managers' Association (BOMA)

### **Identification of Critical Areas of Concern Based on Stakeholder Feedback:**

1. Transit routes & Bike lanes to get higher priority and enhanced levels of service
2. Sidewalks around transit stops to get enhanced LOS especially for wheelchair accessibility
3. Safer school zones. Snow ridges to be removed from both sides of roads around schools
4. General sidewalk clearing all over the city
5. Simplification of the policy document for better understanding

### **Address Gaps in the current Winter Maintenance Policy:**

The review of the current Winter Maintenance Policy indicated that although we are currently performing the work, there are some general activities under current Winter Road Maintenance Program that were identified "*to be inserted at later date*"

The review indicated that it would be appropriate to include these general activities in the program in the new policy document as these are critical components of the program and significantly impact residents or businesses in the city.

Following general activities should be considered for inclusion in the new Winter Maintenance Policy:

1. Snow storage sites
2. Snow fencing (ridging)

### **Research:**

Research was carried out to study snow and ice control policies and level of service for municipalities in Western Canada that face similar operational challenges during winter season. These municipalities included Saskatoon, Moose-Jaw, Edmonton, Calgary and Winnipeg. Some of these cities have already gone through the process of updating their snow and ice control policies/ programs in recent years.

Research activity also included evaluating past feedback on winter activities based on Service Requests, engagement with City Council, operational staff, and recommendations, operational challenges, and outcomes of the best practices as recorded in previous Winter Maintenance Summary Reports.

### **Identification of Critical Areas of Concern Based on Research:**

*SRs, Council and Operations Staff/ field interactions, previous years' Annual Winter Summary Report, MBN report*

1. Priority Roads/ Categorization of roads
2. Sidewalks
3. Residential Roads
4. Snow Ridges
5. School Zones
6. Simplification of the policy document for better understanding

### **Municipal Benchmarking Network Canada (MBNCanada)**

The following graphs from the MBN Canada Performance Measurement Report 2018 indicate the comparison of winter maintenance costs (per lane km) of different municipalities in Canada. The costs are incurred to meet the Policy guidelines relating to the level of winter maintenance service for different programs.

Figures 28.4 and 28.3 below indicate the following:

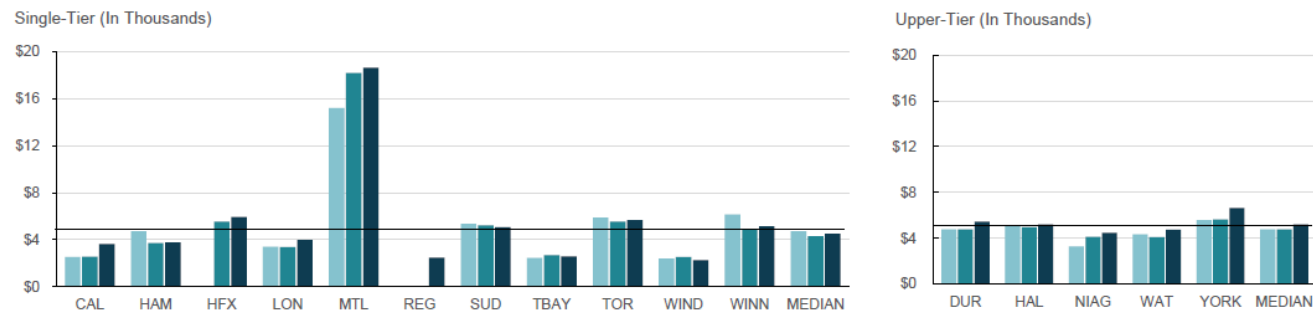
- Total cost for winter maintenance of roads per lane km for Regina is lower than most other municipalities in Canada that face similar challenges during winter but provide higher customer level of service. This shows that the cost of providing winter maintenance service in Regina could increase due to proposed enhancements of level of service.
- Total cost of winter maintenance per lane km of roads is fairly consistent for most municipalities. If required, this finding would be further studied and verified considering influencing factors like weather conditions and traffic volumes.

## MBN Report 2018:

### Roads

**Figure 28.4 Total Cost for Winter Maintenance of Roads per Lane Km Maintained**

This measure represents the total cost for winter maintenance of a single lane km. It includes all functions included in clearing and maintaining the roadway, and is not inclusive of sidewalk snow clearing and parking lots.



2016	\$2,541	\$4,736	N/A	\$3,406	\$15,189	N/A	\$5,352	\$2,464	\$5,872	\$2,406	\$6,147	\$4,736	\$4,760	\$5,148	\$3,277	\$4,322	\$5,600	\$4,760
2017	\$2,566	\$3,725	\$5,538	\$3,383	\$18,167	N/A	\$5,215	\$2,693	\$5,553	\$2,534	\$4,905	\$4,315	\$4,779	\$4,975	\$4,108	\$4,089	\$5,642	\$4,779
2018	\$3,637	\$3,788	\$5,946	\$3,974	\$18,624	\$2,496	\$5,065	\$2,580	\$5,665	\$2,275	\$5,159	\$3,974	\$5,450	\$5,202	\$4,459	\$4,729	\$6,643	\$5,202

Source: ROAD309T (Efficiency)

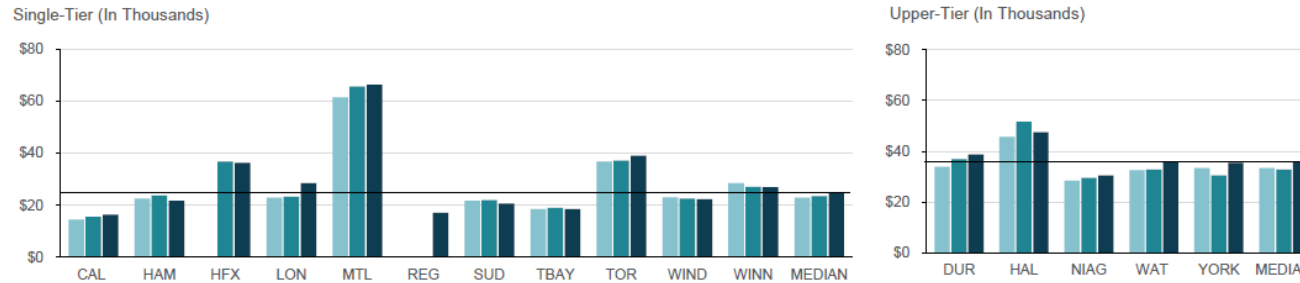
Montreal: The service thresholds for responding to weather incidents and the volume and type of snow removal required due to population density contribute to Montreal's higher cost.

York: Expenditures for the renovation of Central Maintenance Yard and additional snowplows to maintain new Rapidways.

## Roads

**Figure 28.3 Total Cost for Roads - All Functions Per Lane Km**

This measure represents the total cost of all functions related to road maintenance. This includes operating costs and amortization associated with capital costs for paved and unpaved roads, bridges and culverts, traffic operations, roadside maintenance, and winter control for roadways, sidewalks, and parking lots.



2016	\$14,454	\$22,507	N/A	\$22,966	\$61,492	N/A	\$21,698	\$18,486	\$36,759	\$23,014	\$28,459	\$22,966	\$33,808	\$45,667	\$28,472	\$32,568	\$33,341	\$33,341
2017	\$15,607	\$23,785	\$36,780	\$23,250	\$65,657	N/A	\$21,958	\$18,983	\$37,131	\$22,506	\$27,128	\$23,518	\$36,956	\$51,644	\$29,461	\$32,838	\$30,538	\$32,838
2018	\$16,394	\$21,722	\$36,402	\$28,430	\$66,366	\$17,045	\$20,704	\$18,560	\$39,117	\$22,356	\$26,953	\$22,356	\$38,775	\$47,542	\$30,425	\$35,718	\$35,441	\$35,718

Source: ROAD308T (Efficiency)

Halton: Roads restoration costs, contracted services costs and road and bridges amortization increased due to Halton Region's continuous growth, new construction and roads rationalization.

London: Increase in 2018 expenditures due to some project contributions related to non-City owned assets.

Montreal: The higher cost can be attributed to investments in infrastructure and higher amortization costs.

## Winter Maintenance Policy Comparison:

Table B below provides summary of the comparison of winter maintenance policies of some municipalities in Western Canada. The table provides comparison of road network classification of different jurisdictions for the purpose of providing winter maintenance and brief information about major winter maintenance programs like road plowing, residential plowing, sidewalk plowing etc.

Table B: Summary of Winter Maintenance Policy LOS & Timelines for Different Cities in Western Canada

	Regina	Saskatoon	Edmonton	Calgary	Moose Jaw	Winnipeg
Facts	<b>Roadways:</b> 1100Km <b>Sidewalks</b> >1300 Km <b>Equipment:</b> Access to 30 graders, 16 sanding plow trucks, 8 sidewalk machines, 4 blowers, 4 loaders, 2 under body plow trucks, 32 dump trucks-semis/tandems <b>Budget:</b> 8.8 million (2019)	<b>Roadways:</b> 4000 lane Km <b>Sidewalks:</b> n/a <b>Equipment:</b> n/a <b>Budget:</b> 12.59 million (2017)	<b>Roadways:</b> 11,000 Km <b>Sidewalks:</b> 1,380 Km (walks & trails) <b>Equipment:</b> Access to 150 plows, 300 graders, 260 end dumps <b>Budget:</b> 65 million (2019)	<b>Roadways:</b> 16,000 lane Km <b>Sidewalks:</b> 2,000km (city), 4500km (private) <b>Equipment:</b> 27 graders, 74 tandem trucks with underbody plow, 18 tandems with front plow and 6 blowers <b>Budget:</b> 40.4 million (2019)	<b>Roadways:</b> 200 Km <b>Sidewalks:</b> 210 Km <b>Equipment:</b> n/a <b>Budget:</b> n/a	<b>Roadways:</b> 7200 Km <b>Sidewalks:</b> 3000 Km <b>Heavy equip:</b> 300 <b>Budget:</b> 30-40 million
Policy Document	Winter Maintenance Policy	Service Level for Snow and Ice Maintenance	Snow & Ice Control Policy	Snow & Ice Control Policy	Winter Maintenance Policy	Snow Clearing & Ice Control Policy
Road Classification	<b>Category 1 to 6</b>  <b>Category 1</b> Freeway, major arterials, designated hospital emergency route. <b>Category 2</b> Minor arterials, major collectors with traffic volumes > 5,000 vpd, downtown. <b>Category 3</b> Major collectors (traffic volumes < 5,000 vpd), industrial/ commercial roads, minor collector or major residential local roads on a designated transit or truck route. <b>Category 4</b> Minor collectors and major residential local roads leading into school bus unloading zones. <b>Category 5</b> Residential local roads <b>Category 6</b> Gravel roads.	<b>Priority 1 to 3</b>  <b>Priority 1:</b> Freeways, High-use roads, Emergency routes  <b>Priority 2:</b> Medium use roads & Transit routes  <b>Priority 3:</b> School zones, bus stops, downtown, business districts	<b>Priority I to 4</b>  <b>Priority1</b> <ul style="list-style-type: none"><li>- Freeways, Arterial roadways</li><li>- Business districts, Busways</li><li>- Bus stops adjacent to City property</li><li>- Prioritized sidewalks, trails and bike routes</li></ul> <b>Priority 2</b> <ul style="list-style-type: none"><li>- Collector/Bus Route Roadways, Transit Park and Ride access roads</li></ul> <b>Priority 3</b> <ul style="list-style-type: none"><li>- Local Industrial Roadways</li></ul> <b>Priority 4</b> <ul style="list-style-type: none"><li>- Residential Roadways, Alleys</li></ul>	<b>Priority I to 4</b>  <b>Priority 1</b> <ul style="list-style-type: none"><li>- Streets in Central business district with traffic volumes &gt; 8,000 vpd</li><li>- Designated routes on high-traffic-volume arterials (&gt; 20, 000 plus vpd).</li></ul> <b>Priority 2</b> <ul style="list-style-type: none"><li>- Designated streets 5,000 to 19,999 vpd</li><li>- Traffic lights and controlled crosswalks</li><li>- Designated emergency routes (adjacent to hospitals and police and fire stations)</li><li>- Roadways which facilitate marked, on-street bike lanes</li><li>- Problem areas</li></ul> <b>Priority 3</b> <ul style="list-style-type: none"><li>- Designated feeders, collectors and bus routes</li><li>- School and playground zones.</li><li>- Designated hills.</li><li>- Stop/yield signs.</li><li>- Bus stops.</li></ul> <b>Priority 4</b> <ul style="list-style-type: none"><li>- Residential areas at:</li></ul>	<b>Priority I to 6</b>  <b>Priority 1</b> <ul style="list-style-type: none"><li>- arterial roads</li><li>- emergency services buildings.</li></ul> <b>Priority 2</b> <ul style="list-style-type: none"><li>- bus routes</li></ul> <b>Priority 3</b> <ul style="list-style-type: none"><li>- remaining collector roads and areas with potential drainage issues.</li></ul> <b>Priority 4</b> <ul style="list-style-type: none"><li>- local collector routes</li></ul> <b>Priority 5</b> <ul style="list-style-type: none"><li>- all remaining roads</li></ul> <b>Priority 6</b> <ul style="list-style-type: none"><li>- parking lots.</li></ul>	<b>Priority 1 to 3</b>  <b>Priority 1</b> All Regional Streets, hospital route  <b>Priority 2</b> Non-regional bus routes and collector streets based on traffic counts, some streets in industrial areas  <b>Priority 3</b> Residential and/or little used industrial streets.

		Regina	Saskatoon	Edmonton	Calgary	Moose Jaw	Winnipeg
					<ul style="list-style-type: none"> <li>- School and playground zones</li> <li>- Designated hills</li> </ul>		
<b>Plow Triggers</b>	Arterials	5 cm	5 cm	-	5 cm	-	3 cm
	Collectors	5-10 cm	5 cm	-	5 cm	-	5 cm
	Residential	25 cm	15 cm	-	12 cm (using graders); 5 cm (plow trucks)	-	10 cm
<b>Plow Timelines</b>	Arterials & Collectors	PLOWED & SANDED in 60 Hours to Bare pavement	PLOWED & SANDED in 72Hours to Bare pavement	PLOWED & SANDED in 48Hours to Bare pavement	PLOWED & SANDED in 48Hours to Bare pavement	PLOWED & SANDED in 48Hours to Bare pavement	PLOWED & SANDED in 36Hours to Bare pavement
	Residential	Residential systematic plow timeline not specified. Typically completed in 12-14 days after snow event	Residential plow timeline not specified	completed within 7 days, commencing within 48 hours following the end of the snowfall.	completed within 4 days, commencing within 48 hours following the end of the snowfall.	<ul style="list-style-type: none"> <li>- maintained based on rutting and drainage</li> <li>- Residential streets are not normally completed as part of the Snow Management program</li> </ul>	The snow plowing operations shall be completed within five working days
<b>Sidewalk Policy</b>		Encouragement model	Enforcement model	Enforcement model	Enforcement model	-	City clears
<b>Transit Routes</b>		Category 3	Priority 2	Priority 2	Advanced priority when plowing	-	Advanced priority when plowing
<b>School Zones</b>		Snow removed completely from one side of school unloading zones	Snow removed completely from both sides of school unloading zones	Snow removed completely from both sides of school unloading zones	The policy document does not specifically mention details of the school zone snow clearing. The only reference about schools in the main policy comes under road classification.	-	Priority shall be given to remove snow from high piles located at intersections and lane entrances in the vicinity of elementary schools. (No mention of the pile height in policy document)



## Appendix D Road Network Reclassification

### Current Classification:

Based on the current Winter Maintenance Policy, the City of Regina roads including expressways, arterials, collectors, locals, gravel roads etc. are classified into six categories primarily based on the daily traffic volumes.

Category	Length Km	Timeline- Hour	Snowfall trigger- cm
<b>Category1:</b> Freeways/ Expressways including ramps and loops, major arterials, and any road on a designated hospital route	157	24	5
<b>Category2:</b> Minor arterial roads, major collector roads with traffic volumes greater than 5,000 vehicles per day (VPD) and all roads in the area referred to as Regina downtown	114	36	5
<b>Category3:</b> Major collector roads with traffic volumes less than 5,000 VPD, industrial/ commercial roads, and any minor collector or major residential local roads on a designated transit or truck route	178	48	10
<b>Category4:</b> Minor collector roads and major residential roads which lead into school bus unloading zones	59	60	10
<b>Category5:</b> Residential local roads	541	No	25
<b>Category6:</b> Gravel roads	47	60	10
Total	1096 Km		

**Concern:** Based on survey feedback, major roads like transit routes, high traffic residential roads, gravel roads getting lower level of service. In addition the road classification needed to be simplified.

**Recommended Classification:** Roads classified into 5 categories only

Category	Length Km	Expected Timeline- Hour	Snowfall trigger- cm
<b>Category 1:</b> Freeways/ Expressways, major arterials, roads on a designated hospital route	157	24	5
<b>Category 2:</b> Minor arterial roads, major collector roads with traffic volumes greater than 5,000 vehicles per day (VPD), transit routes, all roads in the area referred to as Regina downtown, and all bike lanes	204	36	5
<b>Category 3:</b> Major collector roads with traffic volumes less than 5,000 VPD, minor collector roads, industrial / commercial roads. Residential / local with traffic volume greater than 1500 VPD and roads which lead into school bus unloading zones.	156	48	5
<b>Category 4:</b> All gravel roads	47	60	5
<b>Category 5:</b> All local/ residential with traffic volume less than 1500 VPD	532	No	15
Total	1096 Km		

**CATEGORY 1:**

No changes in the road categorization for Category 1 roads. Levels of service remain the same as in the existing Policy.

**CATEGORY 2:**

Significant change in this category as all transit routes and bike lanes are added to this category. This would ensure enhanced level of service for transit routes and bike lanes in comparison with the existing policy.

**CATEGORY 3:**

Reclassification of the roads would allow all roads currently classified under existing policy as category 3 and 4 to be classified as category 3 roads. All residential / local roads with traffic volume greater than 1500 VPD would also be escalated to category 3, receiving an increased level of service. The Category 3 road network would include remaining collectors, roads in industrial and commercial zoning areas, roads leading to school bus unloading zones as well as all residential / local roads with traffic volume greater than 1500 VPD.

**CATEGORY 4:**

Gravel roads within City limits.

**CATEGORY 5:**

All residential roads with traffic volume less than 1500 VPD to be classified as category 5 roads.

**Cost of Enhancement:** As specified in Appendices E to M

**Advantages:**

- plowing all arterial and collector roads after a 5-centimetre event
- plowing residential roads after a 15-centimetre event
- transit routes and bike lanes upgraded to Category 2 roads or higher
- school unloading zones upgraded to a Category 3 road or higher
- residential roads with traffic volumes greater than 1500 VPD upgraded to a Category 3 road
- snow removal would take place on arterial and collector roads when lane widths and/or sightlines negatively impacted due to repeated plowing operations
- simpler classification

**Disadvantages:**

- None

## **Appendix E**

### **School Unloading Zones**

#### **Current Policy:**

The current Winter Maintenance Policy for snow clearing in front of schools specifies that snow ridges are removed when they exceed 30 centimeters in the School Bus Unloading Zone and exceed 75 centimeters on the remainder of the road adjacent to the school. However, there are no provisions for snow removal on the side of the road opposite of the school.

#### **Concern:**

Leaving snow ridges on the opposite side of the school hinders with the parking of the vehicles especially during pick-up and drop-off times. The snow ridges also pose as a safety hazard for children and others accessing the schools. The snow ridge on one side of the school may impact the road capacity in front of the schools.

Feedback from the survey, stakeholders and Service Requests suggested that snow ridges should be removed from both sides of the road after a snowfall and systematic plowing operations.

#### **Recommendation:**

Upgrade the road plowing classification of all school unloading zones to Category 3 or higher and remove the snow ridges completely on both sides of the road adjacent to a school after a systematic plowing event. Removal activity would be performed during off peak school hours.

#### **Cost of Enhancement:**

The cost for this enhancement is \$100,000 annually.

#### **Advantages:**

- snow ridge free school drop-off zones
- provide safer school unloading zones and would improve road capacity around schools
- no equipment on school zones between 8 am and 4 pm

#### **Disadvantages:**

- operational flexibility lost as maintenance work around schools would be restricted during daytime

## **Appendix F**

### **Transit Stop Accessibility**

#### **Current Policy:**

The current Winter Maintenance Policy for snow plowing on sidewalks includes maintaining sidewalks adjacent to City-owned parks and facilities, bridge decks and subways, and locations that do not have a property owner fronting the sidewalk.

Examples of the locations where City crews clear sidewalks:

- Adjacent to city owned buildings
- Adjacent to Bridge decks and subways
- Adjacent to Transit stops on the Heritage bus route
- Adjacent to No frontage locations on all Category streets
- Adjacent to Storm channel and railway crossings on Category 1 and 2 streets
- Adjacent to Vacant land on Category 1 and 2 streets
- Adjacent to city owned parks on Category 1, 2, 3, and 4 streets
- Adjacent to city owned parks that are next to a public school
- Adjacent to the General Hospital gateway (sidewalks both sides on 14th Avenue from Broad Street to the alley east of Halifax Street)
- Adjacent to Core Community Park (Quebec Street side)

Sow clearing on these sidewalks is triggered with the systematic plow and the target is to clear within three days following a winter storm.

#### **Concern:**

The above locations only represent a small percentage of sidewalks in the community, with most of the responsibility assigned to the property owners adjacent to the sidewalk.

There is a requirement for commercial properties to clear their sidewalk as outlined in *The Clean Property Bylaw*, however residential properties are not included. The City uses an encouragement approach rather than an enforcement approach to motivate residents to be a good neighbor and clear their sidewalks. Unfortunately, this does not always happen, and it creates accessibility challenges for users of the transit system when the pick-up and drop-off locations are not consistently cleared.

Feedback from the survey, Service Requests and engagement with stakeholders suggested that there was a need to significantly improve snow clearing efforts around transit stops. This is also in alignment with OCP goals of offering a range of year-round sustainable transportation choices for all, as well promoting active transportation.

It should be noted that this option would not be required if City Council opted to implement a Bylaw requiring all property owners to clear the sidewalk adjacent to their property.

#### **Recommendation:**

Plow all sidewalks adjacent to transit stops. This will mean plowing snow from approximately 160 kilometres of sidewalks with over 1400 transit stops all over the community. The complete stretch of the sidewalk with transit stop will be plowed for the entire block.

**Cost of Enhancement:**

The cost for this enhancement is \$339,000 annually

**Advantages:**

- improved accessibility of transit stops
- meet long standing request of stakeholders
- benefit community's aging demographics, persons with disabilities and accessibility challenges, transit users and pedestrians in general
- aligns with City's OCP/ TMP goals

**Disadvantage:**

- sidewalks not adjacent to the transit stops will not be cleared and there may be a negative perception that the City is clearing some residents sidewalks and not others
- does not address accessibility on the remaining sidewalk network

## **Appendix G**

### **Transit Route General Conditions**

#### **Current Policy:**

The current Winter Maintenance Policy states that all transit routes are to be classified as a Category 3 priority or higher. This means that during systematic plowing operations, many of the transit routes in the community can take up to 48 hours to complete after a snow event.

#### **Concern:**

Regina Transit needs clear and safe roads to carry out consistent service level commitments and schedules thereby elevating the role of public transit and optimizing the road network capacity. Regina transit routes cover a total of 650 km of the road network.

Regina Transit may be the primary mode of transportation for many residents after a snowfall. This may be especially true during a major snow event when major roads are cleared relatively quickly but residential roads take more time.

Feedback from Service Requests and internal stakeholders such as Regina Transit and Winter Maintenance staff suggest that transit routes should be classified as a higher priority and cleared faster.

#### **Recommendation:**

Upgrade the road plowing classification of all transit routes to Category 2 or higher. This will ensure the transit routes are plowed earlier and more frequently. Administration will also recommend frequent quality checks after maintenance work is completed at the end of each storm.

#### **Cost of Enhancement:**

There are no costs associated with this level of service enhancement and Administration will utilize existing tools and resources to implement this enhancement for the 2021/2022 season.

#### **Advantages:**

- elevates the role of public transit (OCP/ TMP Goal 2)
- enhanced level of service for transit routes
- reduced snow build-up on transit routes due to frequent plowing with 5 centimetres accumulation
- all transit routes will be plowed within 36 hours

#### **Disadvantages:**

- transit routes may change every season

## **Appendix H**

### **Residential Road General Conditions**

#### **Current Policy:**

The current policy classifies the residential roads as Category 5 roads and specifies that they are plowed after a snow event greater than 25 centimetres or when rutting exceeds ten centimetres. The City performs ice shaving activity to reduce ruts generally throughout the season to keep rutting to a minimum.

In the previous years, with more snowfall residential roads were generally plowed twice. However, in the last five years, on an average the residential plow was performed only once annually due to reduced amount of snowfall during this period. Currently the length of the residential road network is approximately 541 kilometres. The residential road network is almost half of the entire road network in the community. Plowing the residential roads comes with several challenges like parked cars and narrow streets.

#### **Concern:**

Feedback from the survey and Service Requests suggest that general satisfaction is low regarding snow clearing on residential roads.

#### **Recommendation:**

Administration is recommending that residential roads that are acting more as collector roads serving over 1500 vehicles per day be classified as a higher priority Category 3 roads and included in systematic plowing operations that starts with five centimetres snow accumulation.

In addition, Administration also recommends that residential roads be included in systematic plowing operations after snow events greater than 15 centimetres. Based on historical data, this will provide one additional residential plow during the season. The City will continue utilizing the Ice Shaving Program to maintain ruts and have discretion to plow all residential roads if there are unusual or extenuating circumstances during the winter.

#### **Cost of Enhancement:**

The cost for this enhancement is \$304,000 annually.

#### **Advantages:**

- all high traffic residential roads would get enhanced level of service
- significant improvement in general residential road conditions
- increased resident satisfaction during winter seasons
- rutting will be reduced
- more frequent ice control cycles and inspections on major residential roads
- changes in line with municipalities like Calgary, Edmonton

#### **Disadvantages:**

- increased cost
- snow ridges created as a result of plowing more often and reducing on-street parking availability

## **Appendix I**

### **Bike Lane General Conditions**

#### **Current Policy:**

The current Policy does not include any reference to bike lanes. Majority of the existing bike lanes are located on Category 1 or 2 roads; therefore, they are plowed within 36 hours of a snowfall event. There are some bike lanes located on Category 3 roads.

#### **Concerns:**

Feedback received from the survey and stakeholder engagement indicated that the bike lanes should get enhanced level of service including snow plowing and ice control in order to ensure safer winter biking conditions. The feedback also indicated that availability of ice, snow and slush especially during spring and shoulder season could become safety hazards for the bike lane users.

#### **Recommendation:**

To meet corporate goals of providing a range of year-round transportation choices and promote active transportation, all existing and future bike lanes will be classified as Category 2 or higher. With this, the bike lanes currently located on Category 3 roads would be upgraded to Category 2 or higher, as well as any bike lanes added to the network in the future.

The enhanced level of service will include plowing and ice control activities after a snowfall, as well as routine inspections to ensure ice, snow, and slush is cleared from the bike lane especially during spring and shoulder seasons.

#### **Cost of Enhancement:**

As most of the bike lanes are already located on higher priority roads, there are no costs associated with this enhancement. Routine inspections will be built into current inspection program.

#### **Advantages:**

- safer bike lanes
- supports City's Official Community Plan (OCP) goals # 1, 3, 4 and 5:
  - offer a range of year-round sustainable transportation choices for all
  - integrate transportation and land use planning in order to facilitate better walking, cycling and transit trips.
  - optimize road network capacity.
  - promote active transportation for healthier communities

#### **Disadvantages:**

- None



## **Appendix J**

### **Intersection Ice Control**

#### **Current Policy:**

The current Winter Maintenance Policy for ice control outlines minimum cycling times based on category during snow events and when slippery conditions are present. Sand and salt is placed on the road in advance of intersections, crosswalks, ramps and merge lanes, curves and adjacent to school properties. After a snowfall, ice control material is placed on the road up to 24 hours after systematic plowing operations have been completed.

#### **Concern:**

Frequent freeze thaw cycles during the season require special attention of the sanding crews as the pavement conditions can change significantly during the day or night. While 2019/ 2020 winter season saw 64 freeze thaw days, last five-year average was 71 freeze thaw days.

Feedback from the survey showed general satisfaction of ice control operations, however comments suggested a need to enhance ice control activities in the community especially around the busy intersections. Comments also suggested there could be better coordination between snow plowing and ice control activities.

#### **Recommendation:**

Enhancement of ice control at intersections through operational efficiency. This will include:

- categorizing intersections based on traffic volume and collision history and prioritizing ice control activities as required
- quicker response time to Service Requests and frequent inspections by supervisors
- implementing routes based on priority and classification for both ice control and plowing operations for greater consistency and for reducing the time delay between the coordinated activities.

#### **Cost of Enhancement:**

There is no cost associated with this level of service enhancement and Administration will utilize existing tools and resources to implement this enhancement for the 2021/2022 season.

#### **Advantages:**

- sustainable option that would continue providing safer driving conditions through future seasons
- low implementation cost
- routing plan can include both ice control and plowing activity for a better coordinated maintenance activity
- categorization of intersections would ensure safer winter driving conditions by prioritizing ice control activities on high traffic and high-risk intersections
- improved safety and satisfaction of intersection users like drivers and pedestrians
- reduced claims due to less collision

#### **Disadvantages:**

- None

## **Appendix K**

### **Snow removal on Category 1-3 Roads**

#### **Current Policy:**

The current Winter Maintenance Policy specifies that snow removal will generally take place when snow ridges impact sight lines and lane widths on Category 1 and 2 roads, as well as Category 3 Transit routes.

#### **Concern:**

After each snow event greater than five centimetres, a systematic plow is completed and snow is plowed and placed in the parking lanes and centre medians. As the season progresses, snow ridges become higher and wider with each plow and snow storage capacity is reduced and sight lines become negatively affected as motorists cannot see around or over the snow ridge. In addition, lane widths become narrow as the snow ridge becomes wider and, causing traffic congestion and unsafe driving conditions.

Feedback from the survey indicated that the snow removal activities should be further enhanced on major roads after each systematic plow. Removing the snow from all arterial and collector roads that are plowed after each five-centimeter snow event would provide safer winter driving conditions by improving road capacity and visibility.

#### **Recommendation:**

Remove snow on all Category 1, 2, 3 roads when sightlines and lane widths are impacted.

#### **Cost of Enhancement:**

There is no cost associated with this level of service enhancement as Administration has gained efficiencies in snow removal operations in the last few years and has typically performed this work out of necessity. Administration will utilize existing tools and resources to implement this enhancement.

#### **Advantages:**

- safer driving conditions on major roads
- increased visibility at intersections
- maintain regular traffic flow

#### **Disadvantages:**

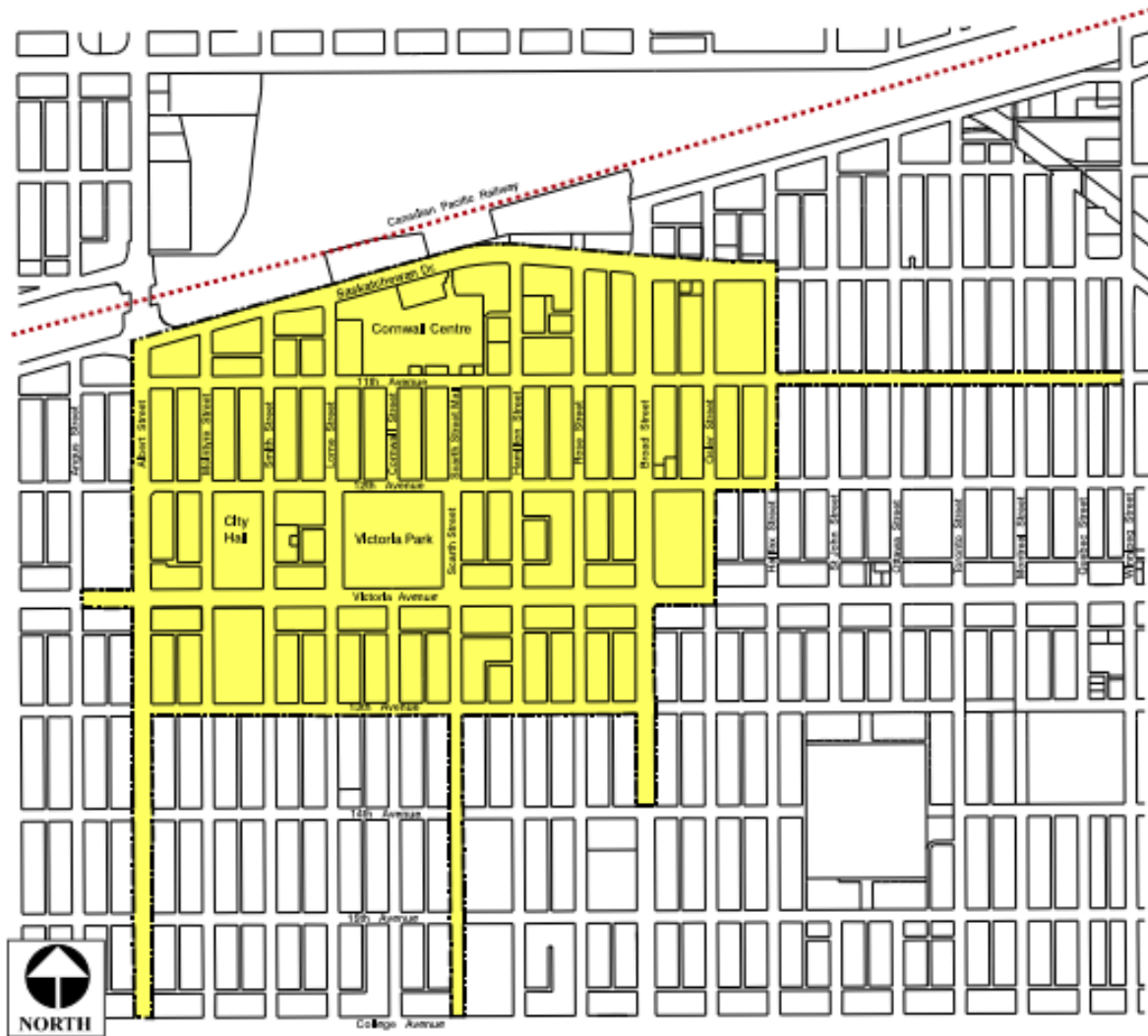
- None

## Appendix D

### SCHEDULE "B"

#### Snow Removal

(as provided for in Section 6)



(#2006-45, s.15, 2006)



LIMIT OF 24 HOUR ZONE

## Appendix E - Comparison of Sidewalk Snow Clearing Bylaws of Other Jurisdictions

Sidewalk Snow Clearing Bylaw- Comparison -Other Cities										
	Regina	Saskatoon	Edmonton	Calgary	Moose Jaw	Winnipeg	Sudbury	Ottawa	Halifax	Vancouver
Bylaw	The Clean Property Bylaw, 1997 - Section 6(1.2)	The Sidewalk Clearing Bylaw, 2005	The Community Standards Bylaw 14600 -Section 7	Bylaw 20M88 - Section 67(1)	The Clean Sidewalks Bylaw, 5514	No	Fouling, Obstruction, Use and Care of Roads - 2011-219, Section 9	Property Maintenance By-law No. 2005-208, Section 5	BY-LAW NUMBER S - 300, Section 4	Street and Traffic By-law 2849, section 76
What is the Bylaw	(1) Every owner, operator or occupant of land inside the area shown on Schedule "B" appended to this Bylaw shall maintain the public sidewalks adjoining the land (2) Every owner, operator or occupant of any Commercial Building, Apartment Building, Commercial Parking Lot and Vacant Property that is situated outside the area shown in Schedule "B" shall maintain the public sidewalks adjoining those properties - <b>Schedule B area refers to the downtown locations</b>	The owner or occupant of adjoining property, shall clear or remove or cause to be cleared or removed all snow or ice or other loose debris from any sidewalk adjoining the property within twenty-four (24) to forty-eight (48) hours of the time when the snow, ice or other loose debris was formed or deposited thereon.	A person shall maintain any sidewalk adjacent to land they own or occupy clear of all snow and ice.	The owner or occupant of a private parcel of land adjacent to a Sidewalk or Pathway that runs in front of the property or along the side of the property where: (a) such Sidewalk or Pathway runs parallel to and directly adjacent to a Street, or (b) such Sidewalk or Pathway runs parallel to and adjacent to a Street, where the Pathway or Sidewalk and Street are separated only by a grassed or otherwise covered boulevard, shall remove ice and snow from that portion of the Sidewalk or Pathway adjacent to the parcel so that the Sidewalk or Pathway is cleared to the bare surface, within 24 hours after the ice and snow has been deposited.	Every owner or occupant of any premises that lies between the designated boundaries in Schedule A and B (i.e. certain areas in downtown and south hill) and any other property zoned Commercial or Industrial shall clearly remove and clear away all snow, ice, dirt, debris and other obstructions from the sidewalks of the adjoining property owned by them.	N/A - Winnipeg has a Snow Clearing & Ice Control Policy which prioritizes snow clearing on sidewalks on major roads. The City does not clear sidewalks and driveways on private property except for residents with accessibility issues	No owner of private property abutting a portion of a highway listed in Schedule A (specific location in the downtown area) shall fail to remove or cause to be removed, snow/ice from that portion of the sidewalk that is contiguous to the owner's property line	Every owner or occupant of a building shall keep the roofs of the building and the surrounding lands free of accumulations of snow or ice that might create an accident hazard. This bylaw is applicable to private sidewalks as the City does not clear snow from driveways or private sidewalks leading to a residence.	Owner, except where snow removal service is provided by the Municipality, shall remove all snow and ice, (a) from any sidewalk <b>which abuts any side of their property</b> ; provided , however, that where a property containing a detached one-family dwelling unit, a duplex dwelling or a semi-detached dwelling unit as defined in the Land Use Bylaws has frontage on a street at both the front and rear of the property, the owner shall not be required to remove the snow and ice from a sidewalk which is part of the street at the rear of the property, where the street at the front of the property is defined as the street on which the property has its civic address, and (b) from any pathway leading from a sidewalk abutting their property to the roadway, and (c) between any sidewalk abutting their property and a crosswalk	The owner or occupier of any parcel of real property shall, not later than 10:00 a.m. every day, remove snow and ice from any sidewalk adjacent to such parcel for a distance that coincides with the parcel's property line and for the full width of the sidewalk.
Timelines in the policy	24-48 hours	48 hours generally except in certain locations where the timeline 24 hours as specified in the Bylaw	The Community Standards Bylaw #14600 does not provide a timeframe for snow removal but as a guideline, the City recommends within 48 hours of a given snowfall.	Removal should be within 24 hours	Removal should be before 9:00 am in the winter and 8:30 am at all other times except when there is a heavy snowfall. In such cases, removal should be within 48 hours	N/A	Timelines were not mentioned in this bylaw	When any lands are not maintained pursuant to the requirements of this by-law, the Director shall send a Notice, by registered mail or direct delivery of the Notice by hand to the owner or occupant's last known address, requiring the owner or occupant to make the lands conform to the requirements of this by-law, and the Notice shall specify the time allowed for compliance.	within twelve hours after the end of any snowfall or , where the snow stops falling during the night, six hours after daylight	10 a.m every day
Fine	not exceeding \$2000 for individuals and \$5000 for corporations	-for a first offence, of \$100 -for a second offence, of \$200: -for a third or subsequent offence, of not less than \$200 and not more than \$1,000 in the case of an individual or \$2,000 in the case of a corporation.	\$100.00	-The cost is a minimum flat rate of \$150 plus GST and an administration fee. The amount will be added to the owner's annual property tax if not paid by the invoice due date.  -A fine of \$250 to the property occupant for a first offence. Repeat offenders may be fined \$500 for a second offence and \$750 for a third offence and each offence thereafter within a 12-month period.	\$100 for first offence, \$200 for the second offence and \$300 for the third or subsequent offence	N/A	Specific fines were not mentioned.	A person who is convicted of an offence under this by-law is liable, for each day or part of a day that the offence continues, to a minimum fine of \$500.00 and a maximum fine of \$10,000.00 and the total of all daily fines for the offence is not limited to \$100,000.00 as provided for in subsection 429(3)1. of the Municipal Act, 2001. (By-law No. 2013-383)	The Municipality's cost in removing the snow and ice pursuant to subsection (2) shall constitute a lien against the property which shall be applied and enforced in the same manner as for rates and taxes under the Assessment Act.	not less than \$250.00 and not exceeding \$2,000.00.
Enforcement Process	Where a person fails to do anything required by this Bylaw, the City or any Bylaw Enforcement Officer may, in default of its being done by that person, do the thing at the expense of the person in default, and the City may recover the expenses of doing so with costs by action in any Court of competent jurisdiction, in the same manner as municipal taxes or by adding the expenses to, and thereby they form part of, the taxes on the land on which or with respect to which the work is done.	The administration and enforcement of this Bylaw is delegated to the General Manager, Community Services Department for The City of Saskatoon who is authorized to further delegate the administration and enforcement of this Bylaw to bylaw inspectors.	A ticket is issued as a bylaw offence for failing to remove snow and/or ice from the sidewalk. The invoice is for the cost of the snow/ice removal on the sidewalks adjacent to the property. The City sends a contractor to remove all snow and ice to ensure the safety and accessibility for all pedestrians.	The Bylaw Enforcement Officer at the City is responsible for ensuring compliance to the regulations once violations are reported	The Director of Planning and Development Services is responsible for this and may delegate enforcement of the Bylaw to Bylaw Enforcement Officers who may issue a Clean Sidewalk Notice to the owner to clear the sidewalk within 48 hours	N/A	The Bylaw Enforcement Officer at the City is responsible for ensuring compliance to the regulations once violations are reported. This officer may levy a fine for the offence in accordance with Ontario's Provincial Offence Act	Manager, By-law and Regulatory Services (otherwise referred to as the Director in the bylaw), in the Emergency and Protective Services Department of the City of Ottawa or authorized representative is responsible for enforcing the bylaw	(1) Where the owner fails to remove snow or ice from sidewalks or structures as required by this By-law, the Engineer or a peace officer may serve an Order to Remove Snow and Ice from Sidewalks upon the owner by posting the Order in a conspicuous place upon the property.  (2) If the owner fails to comply with the Order to Remove Snow and Ice from Sidewalks within 24 hours of service of the Order, the Engineer or a peace officer may remove such snow and ice and may recover the cost of such work from the owner.	
SNOW ANGELS PROGRAM: Snow clearing for seniors and people with health concerns/mobility restrictions	Provides grants to the following organizations: Eden Care Communities, Al Ritchie Community Association and Cathedral Area Community Association who help provide these services for free	The City encourages residents to lend a helping hand to those with mobility restrictions. They do encourage residents to nominate residents who voluntarily provide assistance for recognition for seniors/people with mobility issues, such persons are also referred to Saskatoon Services for seniors, a charitable organization which performs the snow clearing service for a fee ranging from \$25 \$30 per hour	Edmonton used to have a Snow Angels program that rewarded people who shovelled a neighbours' walk with a thank-you letter from the mayor and chance to win prizes. Low participation saw it cancelled in 2016, replaced with a program called Seniors Home Supports Program, that refers seniors to external agencies for assistance. Seniors are not charged for referrals but they will pay a fee to the service provider for completing the work. The City of Edmonton is offering snow removal subsidies to those seniors that qualify through this program. Previously, Community-based 'snow angels' program, community leagues recognize and encourage their community to keep sidewalks clear//Used to be a nomination program (100K/year program)//"Shovelling help for seniors" - Seniors contact a service provider to discuss the work they need done	Community-Based snow removal programs exist across Calgary, and provide assistance to seniors. //Calgary Snow Angels program encourages residents to be good neighbours for older adults and those with limited mobility. A. Adopt a sidewalk program - adopt your own sidewalk and clear when it snows. B. Calgary schools invited to complete volunteer hours through shovelling snow for residents.	Doesn't have a snow angel program	The City itself doesn't have a snow angel program, however, such a program is run by a charitable organization, Take Pride Winnipeg. This organization offers the snow angel program (among other yard care initiatives)//matches student volunteers with seniors, and those with fixed income/disability/Encourage residents to be good neighbours and shovel snow. In the Snow Clearing & Ice Control Policy, Private crosswalks between the sidewalk and the curb shall be cleared to a width of 0.7 metres by City forces/Contractors, after the street clearing operations are completed, for property owners/occupants who sign a declaration on an annual basis to the effect that: the property-owner/occupant is physically incapable of shovelling snow (copy of medical certificate required), no other able-bodied person resides in the property owner's/occupant's house, the property owner/occupant is unable to arrange having this work done by others due to financial circumstances.	Doesn't have a snow angels program	The Snow Go Program provides a matching service for seniors and people with disabilities looking to hire an individual or contractor to clear snow from private driveways and walkways. Residents who participate in this program are responsible for paying the individual or contractor removing the snow. There's also The Snow Go Assist Program which provides financial assistance to eligible low-income seniors or persons with disabilities. And there's a snow angel program where residents can nominate snow angels for recognition by the City	YMCA Senior Snow Removal is a YMCA program – in partnership with the city of Halifax – for seniors, and persons with disabilities which provides a subsidized snow removal service to create safe access. The YMCA pays all service fees directly to the contractor on behalf of program participants. The Halifax Regional Municipality provides an annual contribution of \$400,000 in support of this program which allows the YMCA to serve about 450 households. Once maximum capacity is attained however, the program is closed and individuals will be placed on a wait list.	Has a roster of snow angel volunteers to help out at any point in time. Residents can phone 311 to request a Snow Angel, which will be assigned to clear the public portion of the sidewalk. There's an online registration form for residents who wish to become a snow angel. They have to provide details such as location(s), number of residents they're willing to help, etc
Incentive/Recognition (Snow Angels Program)		Nominated residents will receive thanks from the City, and be entered into prize draw	Snow Angels can win a Boston Pizza Party	Volunteer hours for students/official recognition		Volunteer hours for students		Recognized with a certificate signed by the Mayor and a custom keychain with a snowflake symbol		
Cost/Funding (Snow Angels Program)			2,000 in posters/advertising materials			17K in funding to deliver program				
Model Type (Volunteer Match, Non-profit led, Awareness Campaign) -Snow Angels Program		Awareness/Recognition	Awareness Campaign, encouraging people to keep pathways clean	Awareness Campaign//Also have a list of orgs that provide snow removal available to the public		Non-Profit led, volunteer match/awareness. Students are paired with residents closest to them		Awareness Program, provides recognition to volunteers		Volunteer match program. Residents who volunteer are added to an active roster of volunteers, and matched with a resident in need

Other Municipalities	<b>Medicine Hat:</b> They have a Bylaw-Expecting the snow to be cleared within 24 hours. Their model type includes -Note of recognition from the person you have helped (snow angel)//Usually send a thank you card, and \$5 to coffee shop. Awareness Campaign, encourages volunteers to offer assistance to those who need.
	<b>Windsor:</b> They have a Bylaw-Expecting the snow to be cleared within 12 hours. Their model type includes -Draws to win tablets, recreation cards//Community volunteer hours for students
	<b>Hamilton:</b> They have a Bylaw-Expecting the snow to be cleared within 24 hours, provincial penalties. Their model type includes -Winter hat, gloves, socks, volunteer appreciation event//Volunteer hours for high school students. City coordinated, Volunteer Match program

## **Appendix F**

### **Engagement with Accessibility Advisory Committee**

#### **Committee Engagement**

Members of the Accessibility Advisory Committee (AAC) were engaged on June 29, 2021 to get their feedback on the sidewalk snow clearing options considered under *the Clean Property Bylaw* (Bylaw) and how City of Regina (City) might strengthen the current Snow Angel Program.

#### **Questions presented to the AAC for their feedback:**

1. What do you think is an appropriate timeline for property owners to clear their sidewalk?
2. What do you think are reasonable end conditions for sidewalk snow clearing?
3. What criteria should be considered for someone to be eligible for programs that support sidewalk snow clearing such as the Snow Angels program?
4. What barriers do you anticipate Regina residents will encounter with clearing their sidewalks?
5. Are there any suggestions for additional supports the City can offer in conjunction with Snow Angels?
6. Do you know of any other community led initiatives that assist people with maintenance tasks such as snow removal?

#### **Summary of Feedback**

Feedback received during the meeting included the need to strengthen the Snow Angels program to allow for snow clearing and access to the Sandbox Program.

In addition, members of the AAC supported enforcement in issuing a fine and clearing the sidewalk at the property owners' expense for those who do not clear the snow from their sidewalks as per the provisions of the Bylaw. This would bring consistency in sidewalk snow clearing and would help people with accessibility challenges.



## Disclosure of Toxic Spills and Leaks

<b>Date</b>	September 22, 2021
<b>To</b>	Operations and Community Services Committee
<b>From</b>	Citizen Services
<b>Service Area</b>	Water, Waste & Environment
<b>Item No.</b>	OCS21-26

### RECOMMENDATION

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The Operations and Community Services Committee recommends that City Council:

1. Instruct Administration to implement the proposed spill/release reporting procedure as outlined in this report.
2. Instruct Administration to prepare an annual report for public release, beginning in Q2 of 2022, that will include the following information:
  - a) any releases into the City of Regina wastewater or storm water systems
  - b) a summary of all spills reported to federal and provincial regulators by the City of Regina
  - c) a summary of spill volume, response activity and associated cleanup costs; and
  - d) a summary of actions taken against persons or businesses responsible for spills.
3. Instruct Administration to post the following information to the City of Regina's Open Data website annually, beginning in Q2 of 2022:
  - a) wastewater effluent quality results (as per the Wastewater Treatment Plant's Permit to Operate) including records dating back to 2017,
  - b) results of Wascana Creek water sampling events beginning in Q2 of 2022; and
  - c) all wastewater agreements from 2021 onward, in accordance with requirements in *The Local Authority Freedom of Information and Protection of Privacy Act*, *The Cities Act, 2015*, and other applicable legislation.

4. Authorize the development of an immediate reporting system to alert downstream users, to be activated when the City of Regina becomes aware of an identified spill event.
5. Instruct Administration to continue to follow federal and provincial regulations for spill reporting and public notice.
6. Remove item *MN20-16* from the List of Outstanding Items for City Council.
7. Approve these recommendations at its meeting on September 29, 2021.

## **ISSUE**

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On August 26, 2020, City of Regina (City) Council passed *MN20-16 Public Disclosure of Toxic Spills and Leaks* (Motion) seeking changes to the City's spill reporting procedures. The following report provides a detailed update of work responding to the Motion and a recommended approach for improving spill reporting procedures.

## **IMPACTS**

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### **Financial Impact**

The recommended option has limited financial impact and can be achieved with existing staff and resources.

### **Policy/Strategic Impact**

The recommended option is consistent with the City's goals of maintaining transparency while meeting regulatory obligations and fostering economic growth. Goals specific to *Design Regina: The Official Community Plan* (OCP) include:

#### **D2 Environment**

Goal 1 – Natural System

Maintain, restore and enhance Regina's natural system and biodiversity.

4.6 Integrate environmental conservation efforts with the surrounding municipalities and the Province.

#### **D4 Infrastructure**

Goal 1 – Safe and Efficient Infrastructure

Meet regulatory requirements and industry best practices for design, construction and operation of infrastructure.

6.1 Design, construct and operate infrastructure to comply with relevant legislative and regulatory requirements.

### **D10 Economic Development**

#### **Goal 1 – Economic Vitality and Competitiveness**

Foster an environment conducive to economic vitality and competitiveness which supports the standard of living of residents in Regina and the surrounding region.

12.1 Ensure an orderly regulatory environment within which business and industry can operate assured of transparency, predictability, and fairness in their dealings with the City.

12.2 Minimize regulatory barriers to economic growth to the greatest possible extent while balancing the needs and aspirations of all Regina residents, fee-and taxpayers, and the sustainability of the city.

12.4 Provide easy access to information about investing in, conducting business in, and visiting Regina.

### **Environmental Impact**

The recommended option will not change how spills and releases are prevented or contained but it will make environmental data more readily available, potentially increasing awareness of the City's water, wastewater and drainage systems.

City Council set a community goal for the City of achieving net zero emissions and sourcing net zero renewable energy by 2050. In support of this goal, City Council asked the Administration to provide energy and greenhouse gas implications of recommendations so that Council can evaluate the climate impacts of its decisions. The recommendations in this report have limited direct impacts on energy consumption and greenhouse gas emissions.

### **Legal/Risk Impact**

The recommended option emphasizes existing legislative/jurisdictional responsibility for the environment and reporting of spills. Spills are currently regulated by the Saskatchewan Ministry of Environment (MOE) and cases where spills impact fish or fish habitat are regulated by Environment and Climate Change Canada (ECCC).

The recommended option balances existing legislative requirements and standardized practices within Saskatchewan and Canada with City Council's desire to see increased public reporting.

The reporting component of the recommendation allows the City to be more transparent with the public while ensuring privacy laws are maintained. The recommendation also takes into consideration the need for concrete evidence of who was responsible for releases when the



releases pose no risk to the public prior to public notification.

## **OTHER OPTIONS**

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The Administration is recommending improvements on spill reporting and making environmental monitoring, sampling data and sewer discharge agreements available while continuing to meet obligations for monitoring and reporting spills and releases to the appropriate regulatory agencies. Other options considered but not recommended are:

### Option 1 – Status Quo – Follow Provincial and Federal Regulations and Make Information Available Through the Freedom of Information Process (Not Recommended)

Continue to meet regulatory requirements as they relate to spills and releases. Information will continue to be reported to the appropriate regulatory bodies and will be available to the public through a request to the applicable provincial regulator. Requests to the City will continue to be considered on a case-by-case basis with Freedom of Information (FOI) requests being required for information containing third-party information.

This is consistent with the current approach and currently meets applicable regulations. There are no new costs associated with this option.

## **COMMUNICATIONS**

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The City is taking the responsible approach to proactively share environmental spill/release information publicly, pre-empting FOI requests to ensure the City is more transparent and builds trust within the community. The Water Security Agency (WSA), EPCOR Water Prairies Inc. (EPCOR) and regulating bodies have been informed of the City's new reporting recommendation and are supportive of this approach.

Public access to information gathered during monitoring and sampling events and the preparation and release of reports to the public and internal City processes will be available through the City's Open Data website (Open Data).

## **DISCUSSION**

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The City operates two separate sewer systems (Appendix A). The storm water sewer system collects runoff from precipitation events and directs the untreated water to Wascana Lake or Wascana Creek.

The wastewater sewer system collects wastewater (i.e., sewage) from residents, commercial business, institutions and industries across the city. Wastewater is pumped to the Wastewater Treatment Plant (WWTP) for treatment before being released into Wascana Creek, west of Regina.

The wastewater system operates under a Permit to Operate and is regulated by the WSA, the provincial regulator. The WSA regulates all municipal water and wastewater systems in Saskatchewan. The City's Permit to Operate contains specific requirements about how the City must operate the wastewater system and dictates when public reporting is required. In addition to the requirements of the WSA, the City operates the wastewater system, including any discharges, in accordance with all other applicable federal or provincial laws.

EPCOR currently operates and maintains the City owned WWTP and the City owned hauled wastewater station. The City and EPCOR both conduct extensive sampling within the wastewater sewer system, the WWTP and in Wascana Creek. This testing serves four main purposes:

- to comply with the City's Permit to Operate from the WSA;
- to monitor the effects that the City has on surface water in and around Regina;
- to monitor the wastewater sewer system for potentially harmful compounds that could adversely impact the WWTP; and
- to gather information to help the City and EPCOR effectively operate collection and treatment systems.

All information gathered for the Permit to Operate the WWTP is reported directly to the WSA and is currently available to the public through the WSA. This information can also be made public by the City through annual reporting and posting on Open Data to increase transparency.

Other information that the City and EPCOR gather is used internally to help make informed decisions on technical adjustments to the WWTP's operations. This reduces the impact to the environment on the City's sewer systems and helps improve the efficiency of the City's wastewater related processes. Most of this information could be made available in an annual report that is released to the public.

The federal and provincial governments have a robust reporting process for environmental related data. This process uses a "single window approach" so that individuals or businesses report the spill one time but the information is made available to all applicable regulatory bodies. This approach improves transparency of reporting and simplifies the process so that reporting requirements are easier to understand and follow.

A searchable provincial database is available to the public which includes the date, location, compound and amount of the release. Any additional details must be obtained through a Freedom of Information (FOI) request to the MOE. This is a provincially operated and maintained process. The public can search and obtain information on how to access this information at [http://environment.gov.sk.ca/saskspills/spills\\_srch.asp](http://environment.gov.sk.ca/saskspills/spills_srch.asp).

ECCC also posts successful environmental prosecutions online at <https://www.canada.ca/en/environment-climate-change/services/environmental-enforcement/notifications.html>.

The City has a strong working relationship with federal and provincial regulators and often work together to prevent, identify and, when necessary, mitigate the impacts of releases when they do happen. Maintaining these relationships with regulators is critical to the operation of the City's wastewater and storm water systems.

Any compound may be considered a contaminant if it occurs where it is unwanted or in an excessive volume. The term contaminant is more typically used when a compound is in a form or concentration that may harm humans or the environment. Being specific about concentration is important because many compounds that could be considered contaminants are also required to support life and are naturally present in the environment in varying levels.

The Government of Saskatchewan and the Government of Canada have jurisdiction over environmental legislation and regulation in Regina. The key piece of provincial legislation is *The Environment Management and Protection Act, 2010*. Both levels of government have a robust regulatory framework and reporting structure that use a risk-based framework to set limits for compounds in the environment to protect animal, plant and human life. Until compounds enter the environment at a level above regulatory criteria, such compounds are not considered spills or releases by the regulators. In situations where releases occur, the City works with the offending party to clean up the spill and ensures the offending party pays for the cleanup.

Rigorous science-based regulations are in place federally and across all provinces that define what constitutes acceptable public risk based on best practice scientific principles. Creating new definitions or expanding the interpretation of regulations would create confusion in an already highly complex area that the City does not regulate. This approach could negatively impact economic development within Regina due to the introduction of an additional regulatory hurdle for industry that do not exist elsewhere.

Implementing a notification system that focuses only on the presence of the compound and does not consider the compound's actual risk to the public or environment is impractical and misleading. It is important that the effects of any compounds are understood, and the tangible risks are appropriately communicated to avoid generating unnecessary fear or confusion for the general public.

Implementing a reporting system that alerts residents of releases that pose no risk to the public or the environment is likely to alarm residents initially unnecessarily and over time cause residents to become desensitized. This approach has the potential for residents to not respond when a significant risk is present due to a release. A preferred approach is to provide routine, periodic updates on releases that pose no acute risk.

In researching the root cause of a release, it takes time to gather evidence to reliably identify who is responsible. Prematurely releasing information could mean misidentifying the emitter and would open the City to potential liability. Further, any premature release of information could also hinder ongoing investigations or attempts to obtain compensation for losses. To date, the City has been

successful in recovering costs for impacts caused to the City's systems from the entity that committed the spill through strong scientific evidence and direct discussions with the emitter.

The City controls what enters the City's wastewater and stormwater system through *The Wastewater and Storm Water Bylaw, 2016, Bylaw No. 2016-24* (Bylaw). This Bylaw is publicly available on the City's website. This Bylaw specifically outlines what can and cannot be disposed of into the wastewater and storm water system with the goal of protecting the City's infrastructure and the receiving environment. Penalties for violating the Bylaw are up to \$25,000 for a corporation or \$5,000 for an individual. These fines are the maximum sums allowed by *The Cities Act*. A breach of the Bylaw can result in a prosecution where the offender is before a court and evidence is presented. If convicted, it is the court that imposes the fines. The City does not have the authority to impose a fine without a conviction in a court.

The City has not prosecuted anyone in over five years under the Bylaw because the City's approach has been to work with the offending party to reclaim actual costs incurred, which can often exceed the likely fine a court may impose. This approach has proven successful in recovering the City's costs resulting from improper releases and has helped educate the offender on its improper practices and the consequences of these improper practices.

In the event of a violation of not only the City's Bylaw but also provincial or federal regulation has occurred, the City can work with the provincial and or federal regulators to ensure the offending parties are accountable for their actions.

Provincial and federal regulators can fine a company following a conviction of indictment up to \$1 million or \$12 million dollars for each day of the contravention under the provincial and federal acts respectively. An offending party can be fined even if cleanup costs are paid. However, when offending parties commit to paying for a cleanup, fines are typically reduced and, in some cases, can even be eliminated. When faced with the option of paying cleanup costs or facing environmental fines, offending parties often choose to pay the cleanup cost voluntarily.

If an offending party refuses to pay cleanup costs, either out of pocket or through its insurance, there are other avenues for the City to recoup costs. These additional enforcement options include a civil lawsuit where the City sues the individual or corporation for damages or discontinuing services.

The City enters into wastewater agreements with corporations that discharge unusual or very high volumes of wastewater into the system. The agreement is intended as an extra layer of protection beyond the Bylaw. The agreement is created based on an assessment of the overall quality, quantity and risk the wastewater will pose to the City's wastewater collection and treatment system. Wastewater agreements are currently available to the public upon request. These agreements will be posted on Open Data. However, confidential or third-party information may be redacted.

There are opportunities to improve the transparency and reportability of this work which are recommended below.

Option 2 – Improved Reporting and Posting Data and Agreements on Open Data – Recommended Option

The City has multiple programs in place to improve public awareness around the City's wastewater and storm water systems and the impact of harmful substances in concentrations that exceed the Bylaw or federal or provincial environmental regulations. However, there can always be improvements to these programs that would be beneficial to help the public and industry understand the impact their day-to-day lives have on the environment and the sewer systems including what they do at home or what they do at work. This education can take the form of easier public access to information gathered during monitoring and sampling events and the preparation and release of reports to the public and internal City processes.

That Administration recommends implementation of the proposed spill/release reporting procedure that includes:

1. An annual report, to be made available beginning in Q2 of 2022, of releases into the City wastewater or stormwater systems including:
  - a) a summary of all spills reported to federal and provincial regulators by the City;
  - b) a summary of spill volume, response activity and associated cleanup costs; and
  - c) a summary of actions taken against persons or businesses responsible for spills.
2. Posting wastewater effluent quality results, as per the Permit to Operate, from the WWTP to Open Data annually beginning Q2 2022, but also including the previous year's results starting in 2017.
3. Posting results of Wascana Creek water sampling events on Open Data annually, beginning in Q2 of 2022.
4. Posting all wastewater discharge agreements as per the *Local Authority Freedom of Information and Protection of Privacy Act* (LA FOIP) *The Cities Act*, and other applicable legislation, to Open Data in 2021.
5. Developing an immediate reporting system to alert downstream users once the City is aware of an identified spill event and as may be required by regulators.
6. Continuing to follow federal and provincial regulations for spill reporting and public notice.

The Administration believes that this recommendation meets the intent of the Motion by increasing transparency while protecting against desensitization and maintaining privacy rights. Environment is in the jurisdiction of the federal and provincial governments and to attempt to implement additional regulations could result in provincial offloading, increased hurdles to economic development and significant increased cost to the City with no actual improvement to environmental protection. The

proposed recommendation ensures continuity between all levels of government and regulations and maintains standards and terminology.

The recommended options address the Motion, approved by Council, as follows:

1. Review existing fines and costs associated with polluting spills and leaks affecting land and waterways within Regina to ensure that those costs and fines are sufficient to repair all resulting damage, and to deter future incidents, with a report being brought to Council in Q2 of 2021;

The Bylaw already prescribes what can and cannot be disposed of into the wastewater and storm water system with the goal of protecting the City's infrastructure and the receiving environment. Fines for violating the Bylaw are up to \$25,000 for a corporation or \$5,000 for an individual. These fines are the maximum sums allowed by *The Cities Act*. A breach of the Bylaw can result in a prosecution where the offender is before a court and evidence is presented. If convicted, it is the court that imposes the fines. The City does not have the authority to impose a fine without a conviction in a court.

2. Commit to making public all spills and leaks, along with the source, costs, consequences, and remediated actions that could compromise our treatment facility, infrastructure, or effluent quality, regardless of the level of risk to the surrounding water system;

Through an annual report the Administration will report a summary of all spills reported to federal and provincial regulators by the City. This will include a summary of spill volume, response activity and associated cleanup costs and a summary of actions taken against persons or businesses responsible for spills.

3. Develop regulations that would require the City to give public notification within 24 hours of the City becoming aware of all spills and leaks affecting land and waterways within Regina that might pose any risk to the public or to the environment;

The City has recently reviewed and updated the City's spill response plan and has strengthened the procedures related to public notification. The new plan better identifies potentially impacted downstream users and better outlines the steps taken to determine when the release should be reported. The City has already developed an immediate reporting system to alert downstream users of a spill event. The City will continue to work with our provincial and federal partners to assess risk and determine when public notification is appropriate.

4. Commit to making public the quality of effluent released by the WWTP into the water system;

The Administration will post wastewater effluent quality results as per the Permit to Operate from the WWTP. This will be provided on Open Data annually, beginning in Q2 of 2022, but also including the previous year's results beginning in 2017.

5. Develop regulations that would require the City to make public all waste and water agreements that it enters into, along with the implications of those agreements for City infrastructure, the public and water safety;

The Administration will post all wastewater agreements in accordance with LA FOIP to Open Data in 2021.

6. Immediately request the provincial and federal ministries and regulators to do the following:
  - a) Report all spills publicly and promptly in a searchable database that is barrier free for the public to access;
  - b) Make transparent its process for assessing and imposing fines on industry in the case of leaks; and
  - c) Make public the number of fines, and their amount, along with the polluter receiving the fine.

The Administration will continue to work with all provincial and federal regulators to ensure the City's compliance with provincial and federal regulations.

## **DECISION HISTORY**

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On August 26, 2020, City Council considered motion *MN20-16 Public Disclosure of Toxic Spills and Leaks* and passed the following recommendations:

1. The Administration reviews existing fines and costs associated with polluting spills and leaks affecting land and waterways within Regina to ensure that those costs and fines are sufficient to repair all resulting damage, and to deter future incidents, with a report being brought to Council in Q2 of 2021.
2. Commit to making public all spills and leaks along with the source, costs, consequences, and remediated actions that could compromise our treatment facility, infrastructure, or effluent quality, regardless of the level of risk to the surrounding water system.
3. Develop regulations that would require the City to give public notification within 24 hours of the City becoming aware of all spills and leaks affecting land and waterways within Regina that might pose any risk to the public or to the environment.
4. Commit to making public the quality of effluent released by the WWTP into the water system.
5. Develop regulations that would require the City to make public all waste and water agreements that it enters into, along with the implications of those agreements for City infrastructure, the public, and water safety.

6. Immediately request the provincial and federal ministries and regulators to do the following:
  - a) Report all spills publicly and promptly in a searchable database that is barrier free for the public to access;
  - b) Make transparent its process for assessing and imposing fines on industry in the case of leaks; and
  - c) Make public the number of fines, and their amount, along with the polluter receiving the fine.

Respectfully Submitted,



Kurtis Dorney, Director, Water, Waste & Environment

Respectfully Submitted,



Kim Ohra, Executive Director, Citizen Services

9/16/2021

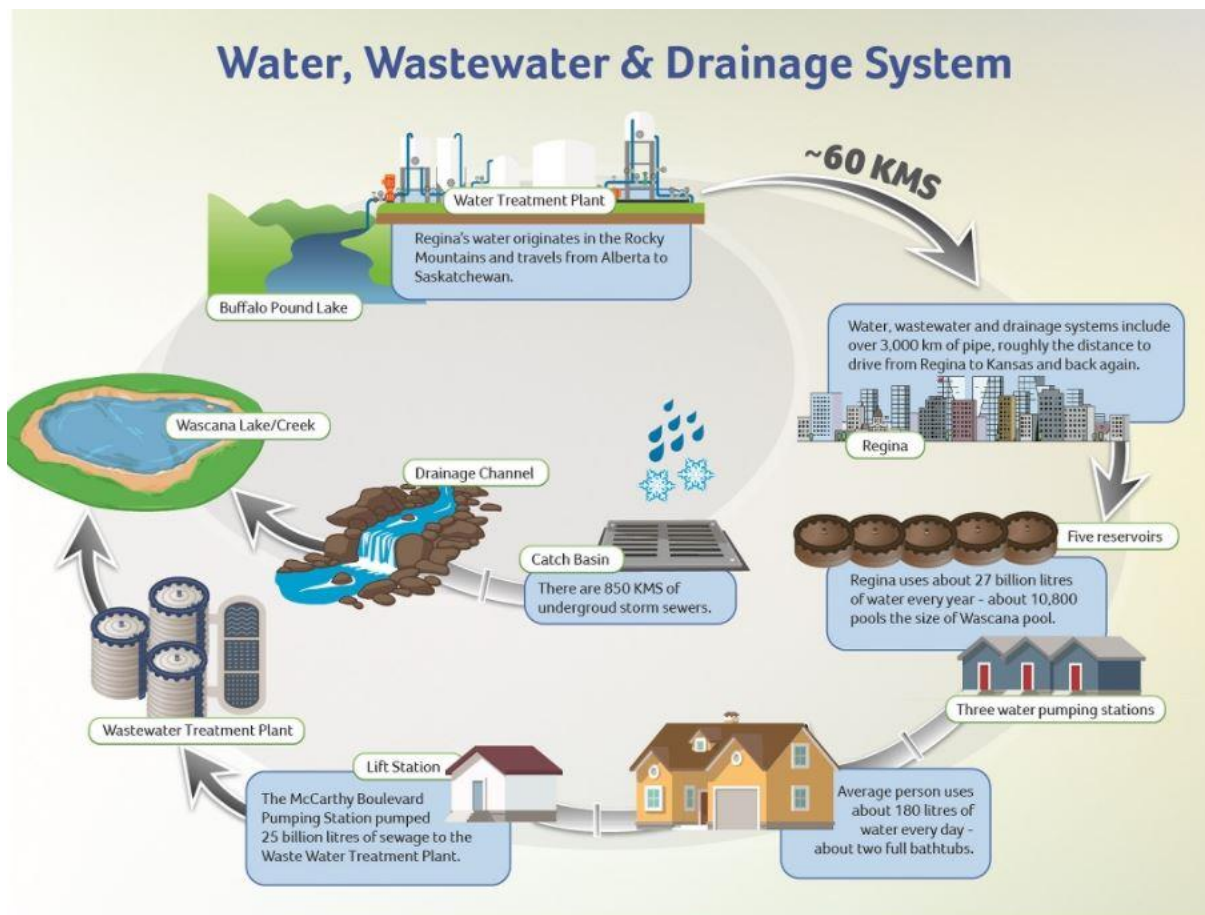
Prepared by: Greg Kuntz, Manager, Energy & Sustainability Solutions

## **ATTACHMENTS**

Appendix A - Water, Wastewater, & Drainage System



## Appendix A





## 11th Avenue Revitalization Project Consulting Services over \$750,000

<b>Date</b>	September 22, 2021
<b>To</b>	Operations and Community Services Committee
<b>From</b>	City Planning & Community Development
<b>Service Area</b>	Sustainable Infrastructure
<b>Item No.</b>	OCS21-27

### RECOMMENDATION

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The Operations and Community Services Committee recommends that City Council:

1. Authorize the Executive Director, Citizen Services or designate, to initiate a public procurement process to engage consulting and professional services over \$750,000 to support the preliminary design, detailed design and construction services related to the 11th Avenue Revitalization Project.
2. Authorize the Executive Director, Citizen Services or designate, to negotiate, award, enter into an Agreement with the highest ranked proponent, to authorize any amendments to the Agreement that do not substantially change what is described in this report and to authorize any ancillary agreements or documents required to give effect to the Agreement.
3. Authorize the City Clerk to execute the necessary agreements after review and approval by the City Solicitor.
4. Approve these recommendations at its meeting on September 29, 2021.

### ISSUE

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Administration is planning to issue and award a Negotiated Request for Proposal (NRFP) for

engineering consulting and professional services for the 11th Avenue Revitalization Project (Project). Council approval is required as per *The Regina Administration Bylaw No. 2003-69*, Schedule D, Section 7 to issue and award the NRFP, as the consultant's fees are expected to exceed \$750,000.

11th Avenue from Albert Street to Broad Street (corridor) is a primary street and an important gateway into Regina's City Centre that links the Downtown and the Heritage neighbourhoods to the east. Many of Regina Transit's routes use this corridor and provide two-way service with major transfer points along 11th Avenue. It accommodates peak period bus lanes, on-street parking, loading zones, heavy pedestrian traffic and allows all vehicular movements through the corridor.

The physical road and sidewalks are in poor condition and the water main and shallow utilities (i.e. electrical duct bank, manhole vaults, fibre optic network cable, etc.) need to be replaced.

Under the proposed scope of work, 11th Avenue will be transformed from its current state to include an improved pedestrian-oriented environment, transit realignments for better downtown movement and accessibility and infrastructure improvements that align with current design standards. The guiding principles of the *Regina Downtown Neighbourhood Plan* (RDNP) will assist Administration to direct decision making related to infrastructure, development, programming, policy and urban design investments that align with the vision for Downtown Regina.

## **IMPACTS**

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### **Financial Impact**

Initial funding for this Project in the amount of \$750,000 was approved through the 2021 budget. Since that time, Administration has further scoped the Project and now estimates that the engineering fees could exceed that amount. An additional \$250,000 has been requested through the 2022 budget process. If the engineering fees exceed the currently approved budget, the City will not award the contract until the additional budget is approved. The engineering consulting budget is tax-funded; however, the construction of the Project, estimated at \$7M, will be funded through a combination of taxes, utility fees and development levies. The funding for the construction is in the five-year capital and utility budgets.

Any changes to the corridor required to support the Transit Master Plan are expected to be funded through additional budget allocated for that project through the 2022 budget process. The Transit Master Plan recommendations are scheduled for Council consideration in Q1 2022. Recommendations regarding the streetscape elements and materials related to transit routes

design and passenger amenities enhancement within the corridor are expected.

### **Policy/Strategic Impact**

#### **RDNP (2013):**

The purpose of the RDNP is to effectively guide future growth and strategic investment into infrastructure, development and urban design for the next 20 years. The RDNP sets the stage for great urban living by creating a complete Downtown community, enhancing the role of the Downtown as the heart of Regina - the Capital City of Saskatchewan and creating a clearer sense of place through strong urban design. The corridor design and construction plan to be developed by the successful proponent will be in general conformity with the RDNP.

#### **Design Regina: The Official Community Plan Bylaw No. 2013-48 (OCP) (as amended):**

The OCP provides the framework to guide the development of the City's infrastructure to accommodate long-term growth. This proposal is consistent with the policies contained within Part A of the OCP with respect to:

#### **Section D3, Transportation:**

*5.6 – Adopt a complete streets framework for new road constructions as well as the renewal of existing streets where feasible*

*5.27 - Develop a citywide pedestrian strategy to provide a continuous, high-quality, connected, safe and universally accessible walking experience*

*5.28 - Develop processes and policy for neighbourhood traffic calming, including road diets to create safer, more walkable and cycle friendly streets*

#### **Section D4, Infrastructure:**

*6.2 - Ensure new and reconstructed infrastructure follows industry best practices and overall city standards for design and construction*

*6.8 - Assess infrastructure requirements prior to reconstruction to ensure that the design accommodates future growth, where feasible*

*6.16 - Encourage collaboration with other utility providers to maintain and enhance public and private facilities and services*

#### **Section D5, Land use and Built Environment:**

*7.7 - Collaborate with stakeholders to enhance the city centre by:*

*7.7.1 - Investing in an attractive, safe, public realm, including pedestrian-friendly and lively streets, and inviting, versatile multi-season public spaces*

*7.7.2 - Ensuring that the City Centre maintains a healthy urban forest*

*7.7.7 - Implementing the Regina Downtown Neighbourhood Plan*

**Section D11, Social Development:**

*13.12 – Promote health and safety by embracing the principle of Crime Prevention through Environmental Design (CPTED).*

*13.20 – Support the city's population of seniors and persons with specific needs, by:*

*13.20.2 – Using principles of barrier-free and universal design in creating public space to ensure accessibility for all*

**Section E Realizing the Plan**

*14.1 - Ensure that corporate decisions, policies and practices are consistent with this plan.*

*14.4 - Plan collaboratively in a multi-disciplinary manner across the City as well as with the community.*

*14.7 - Support creative solutions that may challenge conventional practices to achieve the goals and policies of this plan.*

**Transportation Master Plan (TMP) (2017):**

The TMP is a comprehensive transportation policy and planning document that guides how the City will address its future transportation needs. The TMP establishes goals and policies to achieve a citywide transportation system that is safe, affordable and compatible with all four seasons. The Project will align with those goals and policies.

**Downtown Serviceability Study (DSS) (2014):**

The DSS involves a comprehensive assessment of the existing water, wastewater and stormwater systems in the Downtown area of the city. The report includes key findings and recommendations pertaining to conceptual designs of the systems to service future development in the area, all in conformance with the RDNP.

**Environmental Impact**

Council set a community goal for the City of achieving net zero emissions and sourcing of net zero renewable energy by 2050. In support of this goal, Council asked Administration to provide energy and greenhouse gas implications of recommendations so that Council can evaluate the climate impacts of its decisions. The recommendations in this report have limited direct impacts on energy consumption and greenhouse gas emissions. The consultant, as part of the design, will be exploring options to implement energy efficient improvements.

There are no risk/legal or other implications or considerations.

## **OTHER OPTIONS**

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### **Deferral**

Deferral of this Project will result in continued deterioration of the road and underground piping assets. Leaving the road and sidewalks at existing conditions will lead to intermittent public disruption for maintenance and increase maintenance costs.

Further, an opportunity for joint work collaboration with other utility providers will not be achieved.

### **In-House Design**

Internal resources are fully allocated to other initiatives, ongoing reactive maintenance work and capital projects. Other projects would have to be delayed in order to advance this project using in-house resources.

## **COMMUNICATIONS**

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Nothing pertaining to this report.

## **DISCUSSION**

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The Project includes utility and corridor upgrades that will aim to increase safety for users of all ages and abilities, while ensuring that utility upgrades within the Project area are completed in conjunction with the required surface improvements. This Project will enable growth and redevelopment within the policy area.

The Project has been prioritized for renewal in the Downtown as there are several infrastructure improvements required within the corridor, including infrastructure managed by Crown Corporations. By coordinating the timing of City, SaskPower and SaskTel work, the goals are to achieve economy of scope, delivery of a comprehensive product and minimize construction disruption that comes with construction. This collaborative approach aims to minimize impacts with existing businesses and stakeholders within the corridor during construction.

The scope of work comprises the upgrade and rehabilitation of underground and surface infrastructure assets, including water mains, sewers, roads, sidewalks, curbs and gutters, pedestrian ramps, traffic control signals, streetscape and shallow utilities. This three-year revitalization initiative will begin construction in 2023 for completion in 2025 and will span the corridor between Albert Street and Broad Street. Due to the extensive scope of work, the current plan is to conduct the work in three phases (see Diagram below).



The next step toward the implementation of the RDNP for the Project is to engage an engineering consultant and leverage their expertise for the enhancement of the corridor through design development and coordination of construction activities. The consulting service includes preliminary design, detailed design, tendering, general engineering and construction administration, testing and commissioning.

## DECISION HISTORY

The recommendations contained within this report require Council approval.

Respectfully Submitted,

Director, Sustainable Infrastructure

Respectfully Submitted,

Kim Conrae, Executive Director, Citizen Services 9/14/2021

Executive Director, Citizen Services

Prepared by: Ian Alarcon, Senior Engineer



## In-kind Services and Community Cleanup

<b>Date</b>	September 22, 2021
<b>To</b>	Operations and Community Services Committee
<b>From</b>	City Planning & Community Development
<b>Service Area</b>	Parks, Recreation & Cultural Services
<b>Item No.</b>	OCS21-28

### RECOMMENDATION

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The Operations and Community Services Committee recommends that City Council:

1. Allocate the \$97,000 allocated through the 2021 budget for in-kind services to a Community Association Clean-Up Program.
2. Remove item #5 from item *MN21-3 - Clean Communities* on the list of outstanding items for City Council.
3. Approve these recommendations at its meeting on September 29, 2021.

### ISSUE

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In April of 2021, Council passed motion *MN21-3 – Clean Communities*. Administration was asked to “Increase financial and service support for community clean-up initiatives in high-need areas”. Administration has completed this work and is recommending the implementation of a Community Association Clean-up Program in 2022.

### IMPACTS

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#### Policy Impacts

The proposed Community Association Clean-up Program aligns with information gathered through the Community Association Review in 2019.



### **Financial Impact**

Annual funding of \$97,000 was approved by Council through the 2021 budget process for in-kind services in the community, including support to Community Association (CA) clean-ups. Based on internal research, Administration believes the highest need for in-kind services is equipment and volunteers to assist with community clean-ups. In addition, a community clean-up program supports Council priorities and Council's recent motion regarding clean communities.

Based on the proposed clean-up program described in this report, if all twelve Phase One and Two CA's fully accessed the program the total cost would be \$92,000 per annum. This leaves \$5,000 in the budget line for a contingency to address any unforeseen needs that may arise.

Although initial discussions on the in-kind services with Council included a broader scope of opportunities, including no-cost services for traffic control staging for groups organizing events on City streets, the available funding of \$97,000 is not sufficient to fund both the clean ups and traffic services for events.

Therefore, at this time, Administration recommends that more information be gathered on the scope of the financial implications of providing these services at no cost to event organizers. The pandemic temporarily decreased the number of events and Administration can further assess the impacts once events return to normal levels in the pandemic recovery stage, including developing a reporting mechanism to track the City services and associated costs organizations are seeking to deliver those events to the community. Administration can then bring forward information to Council for consideration.

In addition to in-kind services provided by the City, non-profit organizations hosting events were also required to fund special constables from the Regina Police Services (RPS). These additional costs required, to deliver grassroots events to the community were becoming a burden to the organizations. It is Administrations understanding that with the increase in funding provided to RPS through the 2021 budget for community policing, organizations will no longer be responsible for these costs.

### **Environmental Impacts**

Community clean-ups lead to a healthier environment for all neighbourhood residents. In addition, the proposed clean-up pilot program will provide waste diversion bins to ensure, items are not sent to the landfill as well as manage the appropriate disposal of any hazardous waste.

## **OTHER OPTIONS**

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### Option 2: Staff Involvement in Clean Ups

Council could choose to have City staff deliver community clean-up services to all 12 Phase One and Two organizations, rather than work with CA's to deliver the service. This would be a higher cost to the City and is estimated to be \$105,000.

## **COMMUNICATIONS**

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On September 1 Administration met with Phase One and Two CAs to share the proposed clean-up program and gather feedback. Community Associations were very supportive of the program and the proposed process.

## **DISCUSSION**

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### Background

Currently CA's are divided into three categories based on eight socio-economic indicators such as demographics, employment, income and poverty. These categories are referred to as Phase One (highest needs), Two and Three (lowest needs). Currently Phase One and Two organizations receive the majority of grant funding. This is due to the fact that based on the socio-economic indicators Phase One and Two communities are considered to be the highest need areas and require additional funding as they typically provide low or no cost programming for residents.

When conducting a recent review of CA's and the supports provided to them by the City, the topic of community-clean-ups was discussed. Feedback shared with Administration included the following:

- Community clean-ups are an important service to the community and increase community pride.
- Support from the City seems inconsistent from one neighbourhood to another.
- In areas with lower socio-economic indicators, access to equipment such as trucks can be a barrier.
- Illegal dumping can be an issue in some areas with lower socio-economic indicators.

In response to this feedback, staff were in the process of developing a new approach to community clean-ups when Council passed a motion (MN21-3) that included direction to Administration to increase financial and service support for community clean-up initiatives in high-need areas.

### Proposed Community Association Clean-up Program

In response to the motion by Council, at this time Administration is recommending the Community Association Clean-up Program be focused on Phase One and Two CA's, as those are in the highest need of these services. Currently there are 27 CA's in total. Twelve of which are Phase One and Two organizations.

Based on discussions with CA's, Administration is recommending that the clean-up provide CA's with access to:

- Manual garbage collection trucks (with associated operations staff);
- Half-ton fleet trucks and trailers (with associated operations staff);
- Woodchippers (with associated operations staff);
- Waste diversion bins; and
- Safety vests and trash pickers

### Process

To simplify the process for CA's, Administration is proposing to add a menu of the equipment listed above to the applications CA's are already filling out to access funding from the Community Investment Grants Program. In addition, the group will also indicate when they are planning to implement their clean-up. This information will then be considered as part of the current grant adjudication process. At this time organizations will be eligible to apply for one clean-up per year. Community Consultants, who already work closely with the CA's, will then act as the liaison between staff in the Water, Waste and Environment Department and the CA's to confirm the clean-up details and logistics.

In addition to the menu of items, when discussing the proposed program CA's also suggested three additional areas that they would appreciate support from the City:

1. Managing collection of needles when several are found in the clean-up area.
2. Additional education on waste diversion.
3. Assistance with volunteerism challenges.

Administration is confident that support can be provided to the CA's in both of the first two areas through the Parks, Recreation and Cultural Services Department and the Water, Waste and Environment Department.

With respect to volunteerism challenges, Administration is recommending that in addition to the menu of equipment available, CA's be provided a \$1,000 grant. This grant can be used by CA's to support honorariums for students or other volunteers to assist with the clean-up.

### Reporting

As Administration and CA's work through the first year of the CA Clean-up Program there may be items that are brought to light that were not contemplated through program development. The clean-up in 2022 will provide an opportunity to work collaboratively with CA's to address any issues and make potential updates to the program.

For this reasons Administration is proposing that a report be provided to Council at the end of 2022 that will share successes of the program, how many CA's accessed the program, actual costs and any suggested changes to the program moving forward. In addition, Administration could share information on expansion of the program if directed by Council.

Additional items included in the Clean Communities Motion (MN21-3) will be addressed through a separate report scheduled to be shared with Council prior to the end of 2021.

## **DECISION HISTORY**

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- At its meeting on July 29, 2020, Council approved item *CR20-69 -Events Conventions and Tradeshow*s. As part of that report, it was suggested that \$100,000 will be directed to a new funding envelope under the umbrella of the City's Community Investment Grants Program (CIGP) which will be designated to support the cost of City services for non-profit organizations

experiencing financial need. Through the 2021 budget process, \$97,000 was set aside for this purpose.

- At its meeting on April 29, 2021, Council passed motion *MN21-3 – Clean Communities*, which directed Administration to bring back a report to the Operations and Community Services Committee in Q3 of 2021, providing recommendations on increasing financial and service support for community clean-up initiatives in high-need areas.

Respectfully Submitted,

Respectfully Submitted,



Laurie Shalley, Director, Parks, Recreation & Cultural Services

9/9/2021



Diana Hawryluk, Executive Director, City Planning & Community Dev.

9/15/2021

Prepared by: Janine Daradich, Manager Planning & Partnerships



## Roadway Noise Attenuation Policy Update

<b>Date</b>	September 22, 2021
<b>To</b>	Operations and Community Services Committee
<b>From</b>	City Planning & Community Development
<b>Service Area</b>	Sustainable Infrastructure
<b>Item No.</b>	OCS21-29

### RECOMMENDATION

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Operations and Community Services Committee recommends that City Council:

1. Direct Administration to bring forward the budget implications of a noise wall pilot through the 2022 budget deliberations.
2. Direct Administration to report back to Operations and Community Services Committee with the findings of the pilot, an updated Roadway Noise Attenuation Policy and recommended implementation strategy by Q3 of 2024, provided that the pilot receives funding through the 2022 budget deliberations.
3. Direct Administration that any update to the Roadway Noise Attenuation Policy be based on the following principles:
  - a. The current noise limit of 65 dB(A)  $L_{dn}^1$  be maintained for both existing and new areas as stated in the current Roadway Noise Attenuation Policy.
  - b. The permitted noise attenuation methods be expanded.
  - c. That noise calculation methodology be updated to modern standards.

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<sup>1</sup> dB(A)  $L_{dn}$  – Refers to the day-night sound level in decibels, or an average equivalent sound level over a 24-hour period, with a penalty added for noise during night hours (10pm to 7am) to reflect the negative impact of night-time noise

- d. That locations where noise mitigation is impractical continue to be exempted from the Roadway Noise Attenuation Policy.
4. Direct Administration to consult with the land development industry regarding the proposed approach to noise attenuation in new development areas as described within this report and report back to Operations and Community Services Committee by Q3 2024.
5. Approve these recommendations at its meeting on September 29, 2021.

## **ISSUE**

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The City of Regina's (City) existing Roadway Noise Attenuation Policy (Policy) was adopted in 1990 to address the complex challenges of roadway noise. Since that time, no noise walls have been constructed. Furthermore, while noise studies are a submission requirement for new developments, there has been little demonstrated need for noise attenuation using this approach. The subdivision fences installed around some neighbourhoods have typically been built for other reasons, such as access control and aesthetics.

The technical aspects of the Policy, such as noise calculation methodology, have become outdated and no longer align with best practices. While the Policy should be updated to reflect modern standards, this will not likely result in changes to the locations that would warrant noise attenuation measures.

As recognized in the existing Policy, there are some locations within the city where it may remain unfeasible to mitigate noise levels to the 65 db(A) threshold, regardless of the technical aspects of the Policy. These include locations where properties front the street that is creating the noise levels and access to the properties needs to be maintained, or locations where there is not enough land between the private property and roadway to safely construct noise attenuation infrastructure.

## **IMPACTS**

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### **Financial Impact**

Full implementation of a noise attenuation program would require a minimum investment of at least \$16M to build 13km of noise attenuation walls, based on predictive analysis completed in 2014, although the price could be as high as \$37M depending on the method and materials. Ongoing maintenance and life-cycle renewal budget would also be required. There are currently no funds in the 2021-2025 capital plan for this; therefore, a funding strategy will be key to moving forward with this item. The scope of the noise attenuation program could increase over time with more monitoring, availabilities of new technologies, additional requirements for new

developments and other considerations.

A pilot project with an initial \$700K investment in noise attenuation is recommended. A 2022 budget request will be put forward for this pilot but its inclusion in the Proposed Budget will be dependent upon whether it can be funded after considering competing priorities. If the pilot noise attenuation walls are proven to be successful, a proposed implementation plan and funding strategy would be developed and a business case for advancing the noise attenuation program would be submitted to future Capital budget deliberations. This plan would also identify the necessary resources required to support this new program and options for funding these resources. It is expected that the pilot program could be implemented without adding new permanent staff; however, the City could experience capacity constraints and may require a new staffing position to be funded should a full noise attenuation program implementation be approved.

*Design Regina: The Official Community Plan Bylaw No. 2013-48 (OCP)* includes policies to ensure the City's long-term financial viability and provides direction regarding how to fund various programs, depending on the beneficiary. The OCP indicates that, "Where the benefits of a program or service are directly attributable to specific beneficiaries, the costs are to be paid through user fees or other similar charges".

In existing neighbourhoods, past attempts to pass the costs of noise attenuation walls to directly benefitting properties were not successful because property owners petitioned the work out of a Local Improvement Plan; therefore, the most viable program would likely need to be tax funded, although a cost-sharing program with benefitting properties could be explored if directed by Council.

Changes to the noise policy for new neighbourhoods is likely to increase costs to developers. Moving to a new policy approach as described in this report is likely to result in developers needing to build noise walls in some future locations where currently only subdivision walls are built. Current design standards only require security fencing, which could take on other forms, such as chain link fence; however, developers typically construct subdivision walls. Based on high level discussion with developers, Administration anticipates it could cost approximately \$200 to \$300 per linear metre (\$200,000 to \$300,000 per kilometre) wherever a subdivision wall needs to be replaced by a lowest height noise attenuation wall. The pilot project could help provide better costing information to the development industry. Noise attenuation in new neighbourhoods could be funded through servicing agreement fees or a direct developer cost. Consultation with industry will inform how to fund new walls that may be required.

### **Policy/Strategic Impact**

While roadway noise is not explicitly addressed in the OCP, it does include general policy direction to, "Minimize social and environmental impacts and improve the health and safety of

the city and region”. Decreasing noise levels to below 65 dB(A)  $L_{dn}$  would improve the quality of life for residents who are experiencing noise levels above that threshold.

### **Environmental Implications**

Council set a community goal for the City of achieving net zero emissions and sourcing of net zero renewable energy by 2050. In support of this goal, Council asked Administration to provide energy and greenhouse gas (GHG) implications of recommendations so that Council can evaluate the climate impacts of its decisions. Although difficult to quantify at this stage, if approved by Council, a pilot project and additional future locations requiring noise attenuation walls as result of Policy updates can contribute to additional GHG emissions. Producing building materials for noise control walls and the construction process itself are both energy intensive and generate emissions.

## **OTHER OPTIONS**

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### Option 1 – Eliminate the City’s Policy

This would mean that no noise monitoring would occur, no budget would be allocated to noise mitigation and developers would no longer be required to submit noise studies at the time of secondary plan and/or concept plan applications. The City could require developers to continue to build security fences to prevent access to high-speed roadways.

### Option 2 – Mitigate known issues only and not revisit new neighbourhoods

This option would effectively eliminate the City’s Policy upon completion of the noise attenuation walls predicted in the 2014 report. Administration could develop a program to implement the noise attenuation walls identified in the 2014 study. The Policy would be deemed ineffective, and developers could continue to build security fences in accordance with current practice.

### Option 3 – Update the Policy to apply only to new development

Those locations that are adjacent to existing development would not be subject to the Policy and no noise attenuation measures would be put in place to mitigate impacts. All new greenfield developments that do not have a currently approved Concept Plan would be required to design and install noise attenuation measures consistent with the standards in the revised Policy. Like the recommended option, this could result in more stringent requirements in new development areas.

## **COMMUNICATIONS**

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If Council approves the recommendations of this report, Administration will consult with the Regina and Region Homebuilders Association regarding the draft of the new requirements and finalize the policy based on the consultation. Other communications would be developed on a project-specific basis. This report was provided to interested parties from the September 30, 2020 Council meeting.



## **DISCUSSION**

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### Noise Policy for Existing Neighbourhoods

Administration researched current practices from 12 municipalities and three regulatory bodies. The review revealed a range of noise limits by the municipalities. While there are nuances in how the municipalities measure and record noise levels, the City's current noise limit was within the acceptable range. Refer to Appendix A for detailed information.

Modernizing the City's calculation methodology is not expected to decrease the extent of noise mitigation required by the City. While the City could consider lowering its noise threshold, the City's noise level is in the mid-range for municipalities in western Canada and provides a good balance between quality of life and affordability.

Research also revealed that all municipalities are responsible for installing noise attenuation walls in existing areas and developers are responsible for noise attenuation walls in new development areas. Some of these municipalities have installed noise attenuation walls in existing areas, whereas others have not due to small numbers of complaints. Some once had active noise attenuation programs, which have tapered off due to budget constraints. The City of Saskatoon, for example, also has a noise limit of 65 dBA  $L_{dn}$  and constructed about 21km of noise attenuation walls between 2006 to 2019 at a cost of approximately \$30M.

Based on the City's review of locations in the city that potentially exceed the noise limit, some likely cannot be mitigated even with current technologies. This is either due to physical constraints or the properties front, rather than back, the source of the noise.

### Modernizing Attenuation Options

Administration has reviewed various options available for effective noise attenuation. In the current Policy, noise attenuation is limited to concrete or steel noise attenuation walls or earthen berms. The existing Policy also limits noise attenuation wall heights to five metres.

With improvements in technology, it is now possible to use Polyvinyl Chloride (PVC), which is a type of plastic material to mitigate noise. Not only can PVC be more affordable, but it can also withstand higher wind loading than some older technologies; therefore, can be built higher. As such, areas that were previously not feasible to address with noise attenuation infrastructure may now be possible. Other measures that can be effective in noise mitigation include increased property setbacks, a treed buffer (30m wide minimum), or travel speed reductions.

Administration recommends removing prescriptive methods of attenuation from the Policy. This change would enable Administration to provide a context-sensitive solution to each location where noise mitigation is warranted and would allow the City to be nimbler to adopt emerging technologies. Several criteria should be considered when determining the appropriate mitigation

for each location. These criteria include sustainability, cost, maintenance, aesthetics and effectiveness.

#### Noise Walls in New Development Areas

Currently, in new neighbourhoods, developers are typically required to prepare noise studies early in the land-use planning process. Administration conducted a review of noise studies and requirements in the city over the past 15 years and discovered that traffic levels that causes noise levels to exceed 65 dBA Ldn are not reached within the 20-year planning horizon defined in the Policy. As such, the studies do not identify that noise needs to be mitigated. Forty to fifty years into the future though, increased traffic, increased travel speed and potentially raised interchanges may create noise issues.

The subdivision walls we typically see adjacent to expressways and freeways in newer neighbourhoods are typically built to prevent access to the roadways, to create visual buffer and to improve aesthetics, not to mitigate noise.

To reduce subjectivity and noise issues that cannot reasonably be predicted, Administration would like to explore moving away from a policy where each development is required to do a noise study and moving toward a simplified approach. Based on proven noise theory and the Canadian Housing and Mortgage Corporation methodology, noise levels at varying distances to roadways with certain speeds and traffic volumes can be estimated with reasonable accuracy.

Administration is recommending that the City develop a simplified table (as shown in conceptual form in Appendix B) that would identify context under which noise mitigation is required along with an acceptable range of solutions to mitigate future noise levels, which may be identifiable through a noise study or would be open to subjectivity in the assumptions in the noise study.

The volumes and speeds for any new or existing streets would be based off the longest planning horizon within the City's long-term traffic model and best-known long-term plans for speed changes. The general goal would be to protect residents from future noise levels on streets with high volumes, high speeds or both.

Notably, the City's current Policy and design standards identifies the need for noise mitigation at the time of secondary planning and concept planning. Any location that already has an approved secondary or concept plan may not be subject to a new noise policy, unless the timing for decisions around noise walls is moved to the subdivision and servicing agreement process. At this time, most new development areas in the current growth horizon already have approved secondary plans. If Council supports this general approach to noise mitigation for new neighbourhoods, Administration will consult with the development industry and report back in Q3 of 2024 with final recommendations regarding requirements.

### Pilot Project

A pilot project with an initial \$700K investment in noise attenuation walls and/or alternative mitigation measures, such as landscaping, or jersey barriers is recommended. This pilot will help the City learn more about design, procurement, capital cost and maintenance characteristics of noise walls in our environment (i.e. weather, soil type, water table, physical space). A pilot project would enable one or two of the lower-cost projects to be built prior to making larger capital investments. The pilot would also help the City better understand the receptivity to noise walls in Regina and whether or not the pilot is favourable to residents following installation.

For example, noise walls may include characteristics that are undesirable to some residents, such as blocking view or sunlight.

If Council approves the funding for a noise wall pilot in the 2022 Budget, the services of a qualified design consultant would be engaged to help the City identify the most appropriate locations to design and construct within the available budget. The consultant would help the City establish criteria to measure the effectiveness of the noise mitigation pilot, which would subsequently inform Administration's final recommendations to Council.

The pilot would not include the location at Dewdney Avenue identified in the approved September 30, 2020 Council Motion. The noise attenuation required for the location identified in that motion is likely to exceed \$1M per side and is not a good candidate to assess how to design and procure noise walls or to determine costing due to the complexity of the design and construction.

### **DECISION HISTORY**

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On April 29, 2019, Council considered item *CR19-44* and concurred with the following motions:

1. That Administration be directed to report back to Public Works & Infrastructure Committee with recommendations for an updated Roadway Noise Policy by Q1 2021 which:
  - a. Modernizes the acceptable methodologies and materials for design and implementation of noise attenuation.
  - b. Maintains requirements for the provision of noise attenuation in new neighbourhoods where required.
  - c. Reviews the requirement for the City of Regina to monitor and install noise attenuation for existing development locations exceeding the established limit.
2. That the 1990 Roadway Noise Attenuation Policy be amended to remove the requirement for the Administration to monitor roadway noise in established neighbourhood locations for compliance until such time as a new policy is adopted.

On September 30, 2020, Council considered item *MN20-19* and carried the following motions:

1. Administration be directed to include the area along the Ring Road between the Glen Elm and Glencairn neighbourhoods adjacent to Dewdney Avenue as a priority, in the event that an action plan to address exceeded noise limits within the city is adopted after consideration or in conjunction with the Roadway Noise Attenuation Policy that will be reviewed by the Public Works and Infrastructure Committee in Q1 of 2021.
2. If a phased in action plan is adopted by City Council, that this area be addressed in the first phase.

Respectfully Submitted,

Respectfully Submitted,



Karen Gasmo, A/Executive Director

9/10/2021



Kim Ohra, Executive Director, Citizen Services

9/14/2021

Prepared by: Shanie Leugner, Manager of Infrastructure Engineering

#### **ATTACHMENTS**

Appendix A - Noise Limits Across Western Canadian Municipalities

Appendix B - Conceptual Noise Policy Table for New Developments

## Appendix A - Noise Limits across Western Canadian Municipalities

Municipality	Noise Limit (dB(A))	Descriptor	Approximate Ldn Equivalent
Leduc	55	L <sub>eq</sub> (24)	57
Strathcona	55- New areas 65- Existing areas	L <sub>eq</sub> (24)	57; 67
Calgary	60	L <sub>eq</sub> (24)	62
Red Deer	60	L <sub>eq</sub> (24)	62
Regina	65	L <sub>dn</sub>	65
Saskatoon	65	L <sub>dn</sub>	65
Winnipeg	65	L <sub>dn</sub>	65
Edmonton	65	L <sub>eq</sub> (24)	67
Fort McMurray	65	L <sub>eq</sub> (24)	67
St. Albert	65	L <sub>eq</sub> (24)	67

dB(A) - the relative loudness of sounds in air as perceived by the human ear

L<sub>eq</sub> – refers to the equivalent continuous sound level over a specified time period

L<sub>dn</sub> - refers to the day-night sound level, or an average equivalent sound level over a 24-hour period, with a penalty added for noise during the night hours (10pm to 7am) to reflect the negative impact of the night-time noise

## Appendix B – Conceptual Noise Policy Table for New Developments

### DRAFT - Roadway Noise Attenuation Measures

Posted Speed (km/h)	Ultimate Buildout Traffic Forecast					
	Less than 5,000	5,000 to 7,499	7,500 to 9,999	10,000 to 14,999	15,000 to 24,999	25,000+
50	N/A				<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>30m Setback</li> </ul>	<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>60m Setback for &lt;= 49,999 vpd</li> <li>-or-</li> <li>120m Setback for =&gt; 50,000vpd</li> </ul>
60	N/A				<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>60m Setback</li> </ul>	<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>60m Setback for &lt;= 39,999 vpd</li> <li>-or-</li> <li>120m Setback for =&gt; 40,000vpd</li> </ul>
70	N/A		<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>45m Setback</li> </ul>	<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>60m Setback</li> </ul>		<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>60m Setback for &lt;= 32,999 vpd</li> <li>-or-</li> <li>120m Setback for =&gt; 33,000vpd</li> </ul>
80	N/A		<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>45m Setback</li> </ul>	<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>60m Setback</li> </ul>		<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>120m Setback</li> </ul>
100+	N/A		<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>60m Setback</li> </ul>	<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>120m Setback</li> </ul>		<ul style="list-style-type: none"> <li>Noise Attenuation</li> <li>-or-</li> <li>240m Setback</li> </ul>

#### Definitions:

Ultimate Buildout -- The year in which the subdivision and all neighbourhoods affecting traffic on the road in question are fully developed.

Posted Speed -- This is the legal speed limit at the time of development or as known future plans. Should the speed limit change in the future it may be necessary to analyze the need for noise attenuation using both speed limits.

Setback-- This is the area prohibited of development measured from the centerline of the adjacent road to the property line of residential homes.

Noise Attenuation -- Noise Attenuation can be provided in any of the following forms:

- Noise wall --- Can be any concrete, vinyl or composite wood/concrete provided it meets the following criteria:

- maintenance free for 25 years and has a life span of 50 years or more

(Maintenance includes any work required to make the noise wall technically sound. Example include but are not limited to: replastering to fill cracks in the wall in case of a concrete or masonry wall, filling of holes underneath noise walls due to erosion, etc...)

- Reduces Noise level by a minimum of 5dBA

- No gaps underneath the wall and the ground elevation

Earth berm -- Can be installed alone or in combination with a noise wall. Earth berm should have a security fence, subdivision wall or security fence mounted on it

Setback - Residential properties should be setback from the center of the road by the amount indicated. Buffering with insensitive land uses (industrial uses, commercial uses or green space) may occur in the setback, subject to other policies and standards.