

ANNUAL WINTER MAINTENANCE SUMMARY

2017/2018





Table of Contents

Introduction & 2017/2018 highlights.....	Page 3
Budget & Expenditures.....	Page 5
Policy Objects & Achievements.....	Page 6
Training Program.....	Page 9
Freezing Rain.....	Page 10
Sandboxes & March Blizzard.....	Page 11
Communication Strategy.....	Page 13
Service Requests.....	Page 14
Success in Collaboration.....	Page 15
Snow Routes & Liquid Salt.....	Page 18
Winter Maintenance Policy Review.....	Page 19

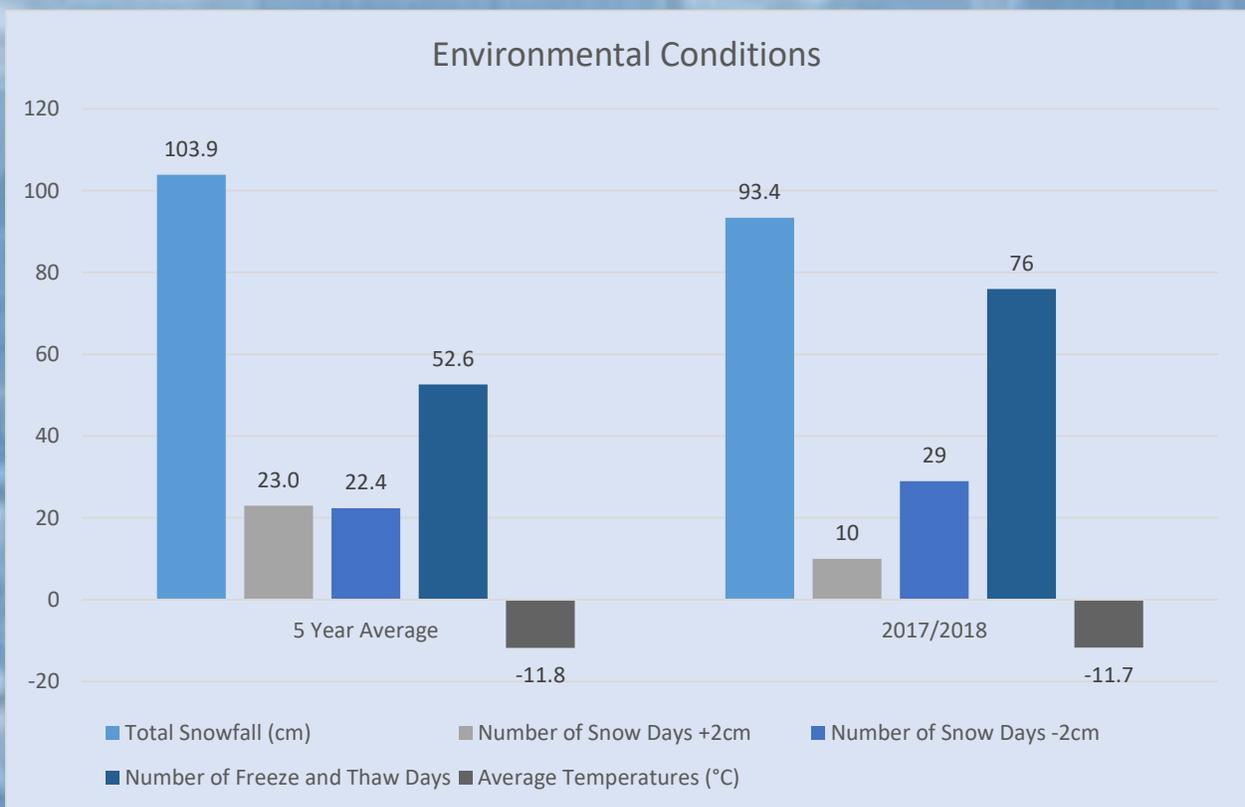
Introduction

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.

2017/2018 Accomplishments

- ❄ Applied over 14,600 tonnes of sand and salt to mitigate slippery road conditions
- ❄ Applied 2,425 tonnes of sand and salt to city streets, sidewalks, and alleys during the freezing rain event
- ❄ Supplied 349 tonnes of sand at our Winter Sandboxes for residents to use on their sidewalks and driveways as a result of the freezing rain event
- ❄ Stored and maintained over 316,000 cubic meters of snow at the Snow Storage Site
- ❄ Responded to 3,109 Service Requests with 91 per cent responses within 48 hours
- ❄ Successfully implemented Regina’s first Snow Routes Pilot Project
- ❄ Generated \$424,000 in revenue at the Snow Storage Site
- ❄ Average temperatures & below average snowfall during the first half of the season allowed collaboration with other branches resulting in a total cost savings and cost avoidance of \$761,000

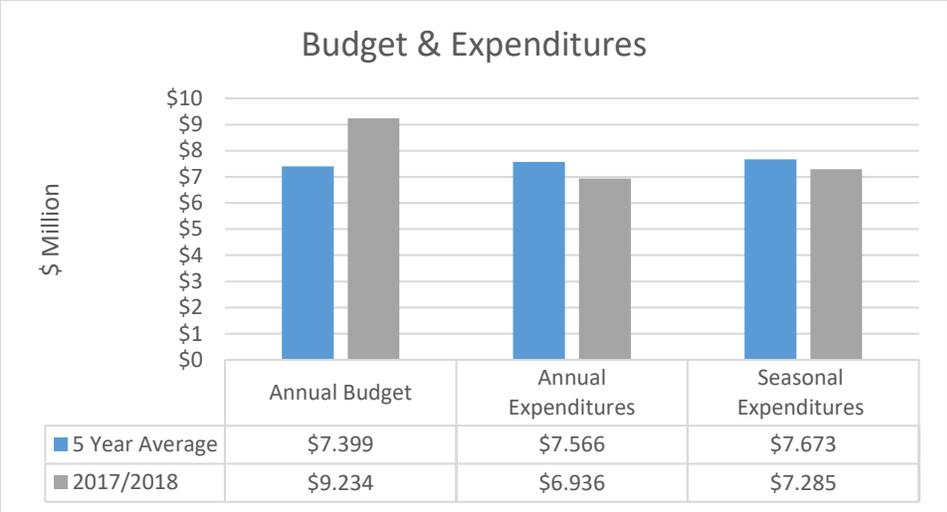
Regina residents experienced below average snowfalls and close to average temperatures, the largest snow event in over five years and increased slippery conditions due to a freezing rain event in January with unprecedented use of free public sand.



Budget & Expenditures

The Winter Maintenance budget is used for the delivery of services to meet the objectives outlined in the Policy. The 2017 budget was \$9.234 million and total expenditures were \$6.936 million, with a surplus of \$2.298 million. As part of the 2017 and 2018 budget process, the Winter Maintenance Branch identified major savings as a result of several years worth of efficiencies, initiatives, and analysis of winter maintenance activities. In total, the branch budget was reduced by \$685,000 because of routing efficiencies for sidewalk and road plowing and a decreased reliance on rental equipment and contractor support. The expenditure reductions are ongoing and will continue to be realized into the future.

The 2018 budget is \$8.491 million, with current expenditures of \$5.141 million as of June 30, 2018. The total expenditures for 2018 are forecasted to be \$7.879 million, based on average conditions expected for October through December. It is anticipated that there will be another surplus of approximately \$612,000 at the end of 2018. This is based on another below average winter and due to cost avoidance from work performed for and funded from other areas.



**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. Funds exceeding the \$2 million cap were transferred; \$4.8 million to the Social Development Reserve and \$1.89 million to the General Fund Reserve, for a total of \$5.69 million at the end of 2017.

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 & sanding operations



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



ALLEYS are passable for the collection of solid waste collection & 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

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.

14,600 tonnes of sand and salt



The community experienced five major snow events requiring major plowing operations and winter maintenance activities outlined in the Policy.



316,000 m³ of snow at the Snow Site

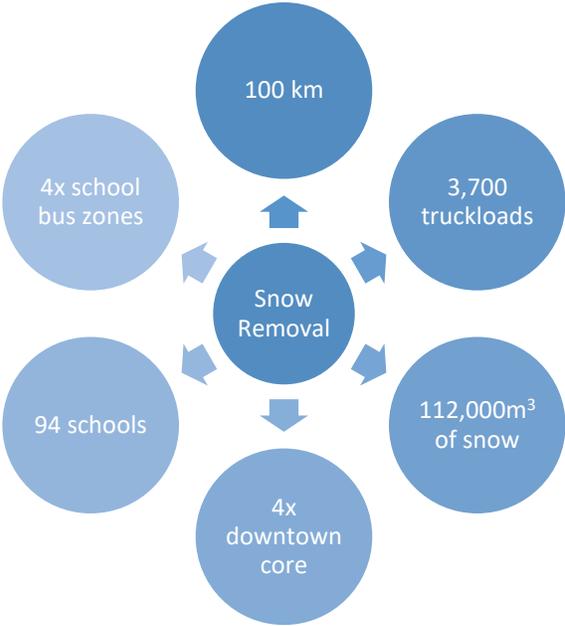
2017-2018 Major Snow Events

Date	Accumulation	Systematic Plow by Category					
		1	2	3	4	5	Alleys
November 4	10 cm over 24 hours	x	x	x	x		
December 4	7 cm over 24 hours	x	x				
February 3	6 cm over 24 hours	x	x				
March 5	35 cm over 48 hours	x	x	x	x	x	x
March 23	10 cm over 8 hours ¹	<i>Cancelled due to melting</i>					

9 Community Sandboxes

44 fills

369 tonnes of sand



¹ Due to warm temperatures and melting snow, the Systematic Plow and Routine Maintenance activities were cancelled after 18 hours

Winter Maintenance Modes

When staff move into the Winter Maintenance Branch 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 cleared 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.

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 | |

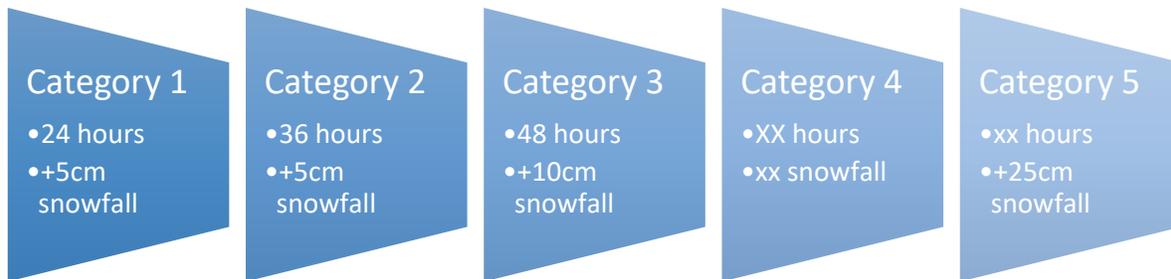
After the snow stops falling, we restart plowing operations to ensure the busiest roads are plowed first, working our way through the road network – Systematic Mode.

Category 1 roads are cleared within 24 hours and Category 2 roads are cleared within 36 hours, provided the community received over 5 cm 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 10 cm or greater. These include low volume major collectors like Dalgliesh 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. Category 1 through 4 streets usually experience a Systematic Plow about five 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.



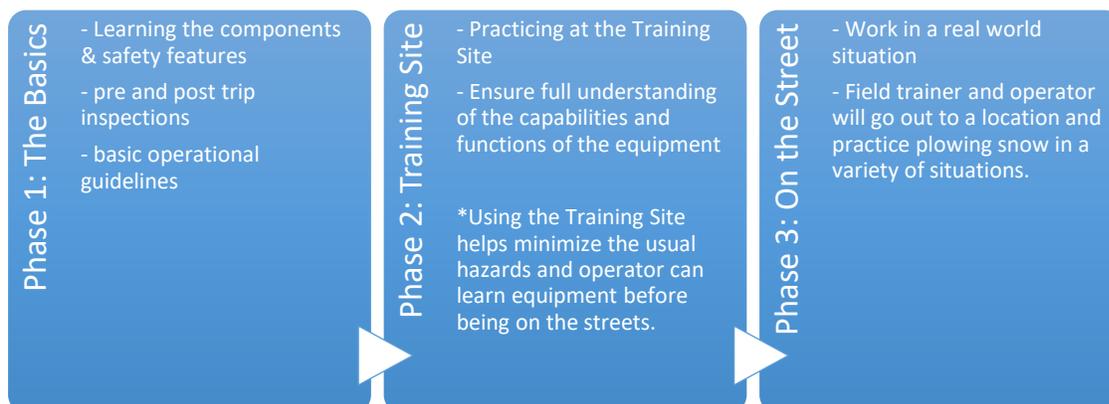
After Systematic Mode is completed, crews go into Routine Maintenance, returning to all roads to ensure that proper plowing operations took place and that the end conditions meet the Policy guidelines or post snow event cleanup including making sure all transit stops have snow ridges cleared to a minimum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

Routine Maintenance includes 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.



Extraordinary Events

Every winter brings its own, unique challenges and the 2017-2018 season was no different.

Freezing Rain

Freezing rain events are rare in Regina, but they can happen. On January 9, the community was showered with rain in the afternoon and evening which quickly created icy conditions due to frozen pavement and cold air temperatures. City streets, sidewalks, and alleys became very hazardous and difficult to navigate for both vehicular and pedestrian traffic.

“GOOD JOB!!!!!! I was scared to death thinking about what the roads were going to be like this morning on my commute to work. They were perfect. High five to all involved.”

Service Request - January 10, 2018

Crews responded immediately, initially focusing on applying sand and salt to the main roads, arterials and collectors, as they see the most traffic and city sidewalks that we maintain. Once the main roads like Albert Street and Ring Road were in good driving conditions, we moved to residential roads. From January 11 to 13, we applied sand and salt to over 500 km of the road network. Working with our partners in the Solid Waste Department, we cycled through 298 km of back alleys, coordinating our efforts to ensure Solid Waste and Recycling collection services were maintained. Within three days, all alleys were treated.

“We have gotten absolutely zero negative feedback from staff. Your staffs’ efforts are very much appreciated.”

Dave Hughes, Manager
Solid Waste Collection

In total, Winter Maintenance crews applied 2,425 tonnes of sand and salt to city streets, sidewalks, and alleys during the eight days following the freezing rain event. Our efforts were recognized by the community - the Winter Maintenance Branch received 26 Service Bouquets thanking the City for their efforts.

We will review ice control activities on roads, sidewalks, and alleys as part of the upcoming Policy Review, engaging stakeholders at all levels to receive feedback and provide options on future levels of service that the community desires. In the interim, we will continue to ensure that our community moves safely throughout the winter months whether Policy guidelines apply or not, adapting to any weather conditions that we might encounter.

We will review ice control activities on roads, sidewalks, and alleys as part of the upcoming Policy Review, engaging stakeholders at all levels to receive feedback and provide options on future levels of service that the community desires. In the interim, we will continue to ensure that our community moves safely throughout the winter months whether Policy guidelines apply or not, adapting to any weather conditions that we might encounter.

March Blizzard

In late February, long range forecasts were calling for a large snow event in early March. Snow events of this magnitude do not happen often, – the last +30 cm event was November 2012. However, with careful planning, we were well equipped to carry out the plowing and sanding operations based on the Policy guidelines.

In preparation, we began notifying and confirming availability of off-duty staff, contractors, and our Fleet Services staff of equipment requirements. Collaboration with Transit and Solid Waste was essential to ensure minimal impacts to City services. Work plans were generated, increasing coverage and ability to respond to Service Requests and emergency calls. A Communications strategy was employed to ensure appropriate notifications to the community and media.

When the snow began to fall on March 3, crews were on shift and responded immediately, launching into Storm Mode. Continuing for 48 hours and totaling over 35 cm, the snow kept crews busy as they cycled the arterial and collector roads, high speed roads and perimeter roads. Attention was also paid to known trouble spots including priority roads leading to EVRAZ Place as the Tim Horton's Brier was in full swing.

When the snow stopped falling in the evening of March 5, crews switched into Systematic Mode. Because more than 35 cm had accumulated, all major activities were triggered including plowing arterial and collector roads (Category 1, 2, 3, 4), plowing residential roads (Category 5), plowing grid roads, plowing all alleys, sidewalk plowing of those that are City responsibility, plowing and snow removal on bridge decks and around guard rails, snow removal at all Transit Stops, snow removal at all schools, and snow removal in the Downtown core as well as arterial and collector roads.

"Big shout out to the hard-working City employees that have done a fantastic job in 48 hours to clear so much of our city. We LOVE Regina and are proud of the fantastic work that has been done to make our city moveable. YAAAH!"

Service Request – March 7, 2018

Winter Maintenance crews worked 20 hours per day, seven days a week, utilizing 45 to 70 pieces of equipment over a three-week period, to complete these activities.

In response to this storm and in an effort to continually improve our operations, we are committed to:

- ❄ Undertaking a review of the Plow Lists to ensure transit routes are plowed sooner than other Category 3 and 4 roads that do not contain a transit route.

- ❄ Creating better tools for our supervisory staff to ensure they are assigning the most effective and appropriate plow lists based on the time of day that the snow stops falling and a Systematic Plow begins.
- ❄ Investigate opportunities to attract more interest from our contractor supporting partners to increase access to additional resources during large snow events.

These actions will 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 drivable in the quickest time possible.

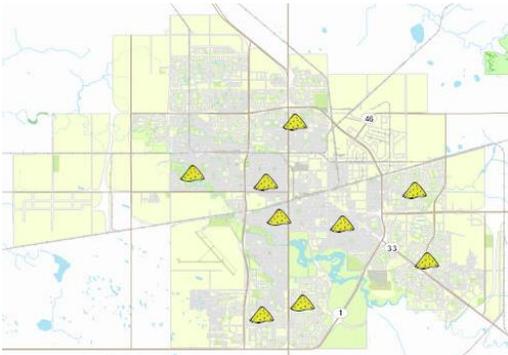
Unique Services

Sandboxes

The City offers free sand at nine 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.

9 Community Sandboxes
44 fills
369 tonnes of sand

Though the program typically does not receive much attention, the freezing rain we had in January brought it to the forefront. On January 10, a Public Service Announcement was sent out highlighting the activities that winter crews were undertaking to address the slippery conditions and reminding the community of the Sand Box program. The story was picked up by all major



news outlets and became the top story of the community. Within hours, residents flocked to the sandboxes at record levels, using over 85 tonnes of sand in the first 36 hours following the rain. To compare, the yearly average usage was 68 tonnes in the past five years.

As winter crews tried to balance the priorities of public safety – ice control on our streets - with the demand to keep the sandboxes filled, it became evident that additional strategies were required. The sandboxes were being emptied almost as quickly as they were filled. Six of the nine locations have adequate space for additional sand storage so on the evening of January 10, winter crews put large loads of sand directly onto the ground beside the sandboxes which helped satisfy the demands of the public. This continued until January 15 when demand subsided after 349 tonnes of sand was given out.

2018/2019 Service Improvements

Based on current process improvements and as a result of the unusual events in 2018 Administration will be undertaking the following improvements to the winter maintenance activities:

- ❄ Revising our tendering process for contracted services in the winter in order to have more equipment available in a major event
- ❄ Looking at continuing and expanding the Snow Routes Program in order to be able to clear roads quicker and more efficiently
- ❄ Reviewing how Transit routes are prioritized and ensuring they are elevated in relation to other roads in the same prioritization category

- ❄ Increasing communication and resources to the Sand Box Program should freezing rain events occur
- ❄ Increased use of liquid salts to allow sand to better adhere to the road surface and to improve the time required for roads to become bare pavement

Communication with the Community

The communications approach for the 2018/19 winter season focused on educating residents about the work being done to keep roads safe and ensure good winter driving conditions. Messages were used to educate and remind residents that roads are categorized and prioritized so the busiest, most-used roads in the community are plowed before roads less travelled.

Several paid communication tools such as radio, television, online advertising and billboards helped inform the public of our winter operations and activities. These tactics featured winter maintenance equipment with a simple, clear message about safe winter conditions. Similar advertising was used on our social media channels, Facebook and Twitter, and shared on Regina.ca.



Increased communications were used following the major snow event and to advise residents of the Residential Snow Plow. Between March 1 and April 30, the traffic to Regina.ca increased to 54,252 page views, with the largest spike in traffic on March 7 with 20,914 views.

We received 52 media requests on winter maintenance and related activities and held seven media scrums to answer questions.

Follow us on Facebook, Twitter, YouTube and Pinterest.



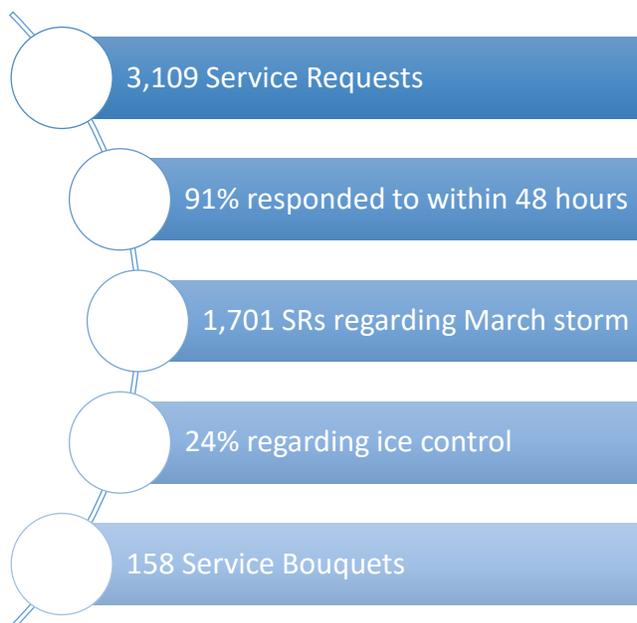
**52 media requests &
7 media scrums**

Service Requests

Winter District Maintenance handled 3,109 Service Requests. While this number seems high, it is a major reduction compared to the peak of 10,315 Service Requests in 2012 and the five-year average of 3,970 per season. 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. 650 customers requested a call back; we achieved 91 per cent contact within the 48 hour corporate timeline.

Thank you @CityofRegina for your hard work getting the snow moved. It was a treat to see some pavement again this afternoon. We take so much for granted.

The March snow storm generated 1,701 or 55 per cent of all Service Requests and focussed primarily on street plowing, snow ridges, and blocked driveways. Most concerns were addressed by explaining the operations and what residents can expect during storm response. Blocked driveways and snow ridges on sidewalks were also brought to our attention via Service Regina and addressed in a timely manner; this justifies the importance of the enhanced resource allocation and inspection process to identify when major concerns exist.



Service Requests received outside of the storm focused on ice control. This is partially due to the January rain but also because of the above average number of freeze and thaw cycles. Temperatures reached both above and below zero on 76 days throughout the winter. This creates frost, black ice and slippery conditions.

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

Supporting Internal Branches

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. To balance staffing needs operationally, we have forged several partnerships throughout the corporation showcasing the mutual benefits. Continuing for several seasons, we provided trucking and hauling services for Water & Sewer Construction, Landfill Operations and Asphalt Production & Materials Engineering that would normally be performed by an external contractor. This created a cost avoidance to the Winter Maintenance budget of over \$178,000 and an additional costs savings of \$583,000²³ in performing the work in favour of contracted services.

² Based on actual Winter Maintenance cost vs. 3-year average Contractor rates per tonne (AP&ME)

³ Based on actual Winter Maintenance cost vs. 2018 Contractor rate for same amount of hourly work performed (Landfill & WS Construction)

Crews also addressed potholes and sunken utility cuts that become hazardous throughout the season contributing to a cost avoidance of more than \$309,000 to the Winter Maintenance budget as these activities are funded by Asphalt Services budgets.

Sweeping and Alleys

There has been substantial collaboration between the Sweeping & Alley Services branch over the years, historically in clearing snow from back alleys and grid roads, and more recently in spring sweeping activities as weather and conditions permit. When temperatures reach above freezing and snow starts to melt, the 24/7 shift scheduling and Equipment Training program provides an excellent platform for our Boulevard and Arterial Sweeping programs which are typically done at night when traffic is at its lightest. Having Winter Maintenance staff execute allows efficient delivery of this program.



Parks Maintenance

Snow clearing on sidewalks is similar to the work done by Parks Maintenance on the pathway systems in City parks. Staff meet regularly to discuss synergies, this season crews assisted in clearing the pathway through Rochdale Park; the large snowfall event in March proved difficult to clear with Parks Maintenance equipment. Reciprocally, Parks Maintenance provided support in helping Winter Maintenance crews clear Transit Stops after the large snow event, allowing us to complete the work faster. We provided trucks and Parks Maintenance provided the operators and tractor loader, clearing all Transit stops of snow in the Northeast District while we worked in the other areas of the community.

Solid Waste

Winter Maintenance and Solid Waste staff discuss the challenges of garbage collection in the winter months on several occasions throughout the year. Every fall we update maps and records with the most current collection schedules to ensure snow clearing activities do not interfere or are inhibited by carts placed on the street or in the alley. During the March snow storm, we worked closely with Solid Waste staff scheduling plowing operations based on collection activities ensuring services were maintained, including residential plowing.

Transit Services

Maintaining transit routes and Paratransit Service is a high priority during the winter months, particularly when there is a big storm. We have worked with Transit Services to enhance clearing at transit stops that see a high number of users that are accessibility challenged, called Transit

Hotspots. Beginning in 2014, crews ensure transit stops, transit lanes, and curb face at pickup and drop off points are free and clear of snow. The locations are reviewed annually and the program has grown from enhanced maintenance activities on 6.4 km of the transit route network to 9.7 km. During the 2012-2013 season, Paratransit Services identified that there were several instances where services were reduced because of road conditions. By increasing communications between the two areas, we have overcome this barrier and can report that on an annual basis that Paratransit drivers have experienced limited to no issues over the past five years.

Bylaw Services

Winter staff meet in the off-season to discuss a wide range of issues including illegal dumping of snow, the Clean Property Bylaw investigation process, and commercial sidewalk snow clearing. In previous years, Bylaw Services contracted sidewalk clearing adjacent to commercial properties when the property owner was not clearing snow within 48 hours of a snow event. This past winter, our internal crews worked with Bylaw to take on this work, clearing two locations that were not compliant. This not only created a cost-avoidance but also ensured consistent and adequate snow clearing.



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 event in March.

Emergency Services

One of the mandates of the Policy is to ensure continuity of emergency services such as Fire and Protective Services, Regina Police Services, and Regina EMS during a snow event. From November to April, there are staff and equipment working in all areas of the city so the ability to respond to an emergency can be done quickly. We are also in direct communication with Operational Services Dispatch, which is a 24/7 operation and can respond at a moment's notice to ensure the safe passage of all emergency vehicles throughout the city. During an emergency situation and when a road is blocked or impassable, Fire, Police, and EMS call Operational Services. A Winter Maintenance Supervisor is immediately notified and crews dispatched to address the concern.

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 *PWI17-1* and subsequent approval in *CR17-7* recommended the implementation of a Snow Routes Pilot Project on a 5 km section of roads during 2017-2018 winter season. The Pilot Project 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.



We will be requesting an expansion of the pilot, adding an additional 11 km to the Snow Route Project. We will recommend a staged approach, continuing with criteria that made Phase 1 successful. Due to the timing of the budget process and the typical winter season, Phase 2 would be implemented in the 2019-2020 season with capital costs related to signage installation and communication efforts taking place in the

summer of 2019. Phase 1 will continue through the upcoming season to maintain the consistency, education, and momentum of the successes achieved during the Pilot Project.

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.

Because the trial was successful, we will be expanding the program to approximately 30 per cent of the road network next season, with the intentions of expanding it city wide in 2019-2020 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.

Policy Review

In order to better align winter activities with the Official Community Plan and Transportation Master Plan, a review of the Winter Maintenance Policy is scheduled to begin in 2018. This review will reflect the community needs that have evolved since the Policy was approved in 2007. Through internal and external stakeholder meetings and public engagement sessions, we will gather feedback and community input. This will be used to form the basis of potential options for winter maintenance, with financial and operational analysis providing guidance to any changes that may be proposed.

The results of the review will then be brought to City Council for discussion and approval in late 2019 with budget implications and new Policy implementation for 2020.