

ANNUAL WINTER MAINTENANCE SUMMARY

2015/2016



Branch Mandate

In accordance with the approved Winter Maintenance Policy, effectively provide winter maintenance activities to roads, alleys and sidewalks that will support the health, attractiveness and economic viability of the community during the winter months.

Introduction

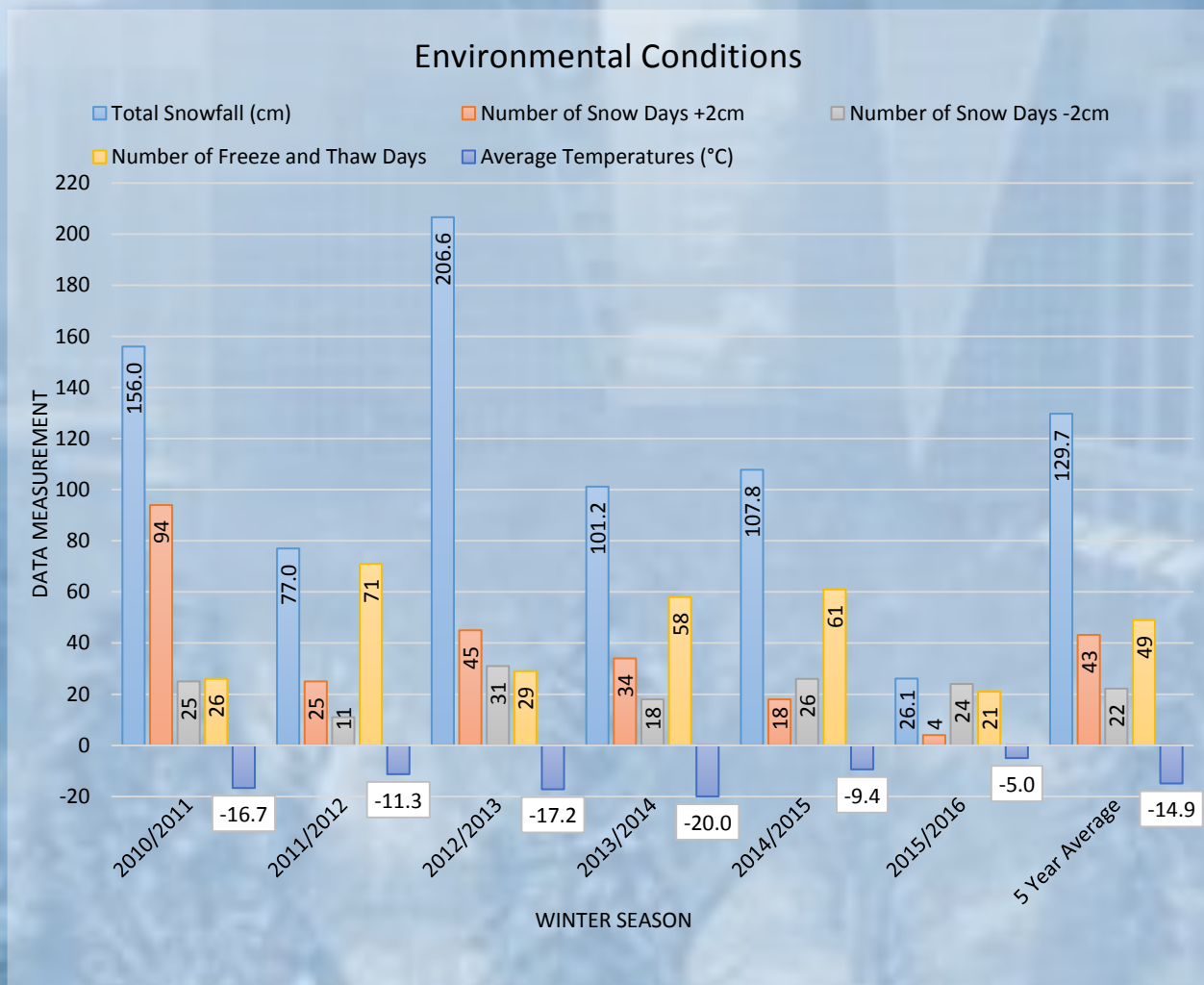
On December 18, 2006, City Council approved the Winter Maintenance Policy, which was officially implemented November 2007. Council has approved policy amendments to improve service in November 2010, December 2014, and December 2015. Administration is committed to the annual review of this Policy to facilitate continual improvement.

The purpose of the Winter Maintenance program is to provide winter maintenance that effectively supports the health, safety, attractiveness, and economic viability of the city. 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.

2015 Accomplishments

- ❄ Winter Maintenance quality objectives met 100 per cent
- ❄ Above-average temperatures & minimal snow allowed reallocation of resources to assist other branches including:
 - ❄ Asphalt Production & Materials Engineering
 - ❄ Landfill Operations
 - ❄ Water & Sewer Construction
 - ❄ Sweeping & Alleys
 - ❄ Concrete Services
 - ❄ Asphalt Services
- ❄ Total savings across branches:
 - ❄ \$210,000 (contracted services)
 - ❄ \$507,000 (cost avoidance)
 - ❄ Total: \$717,000

In the 2015/2016 Winter Season, Regina residents experienced significantly reduced snowfall and unseasonably warm temperatures.



The winter season is defined as the period from October 1 to April 30. Based on the five-year average, the 2015/2016 season can be described as well below average with the following characteristics:

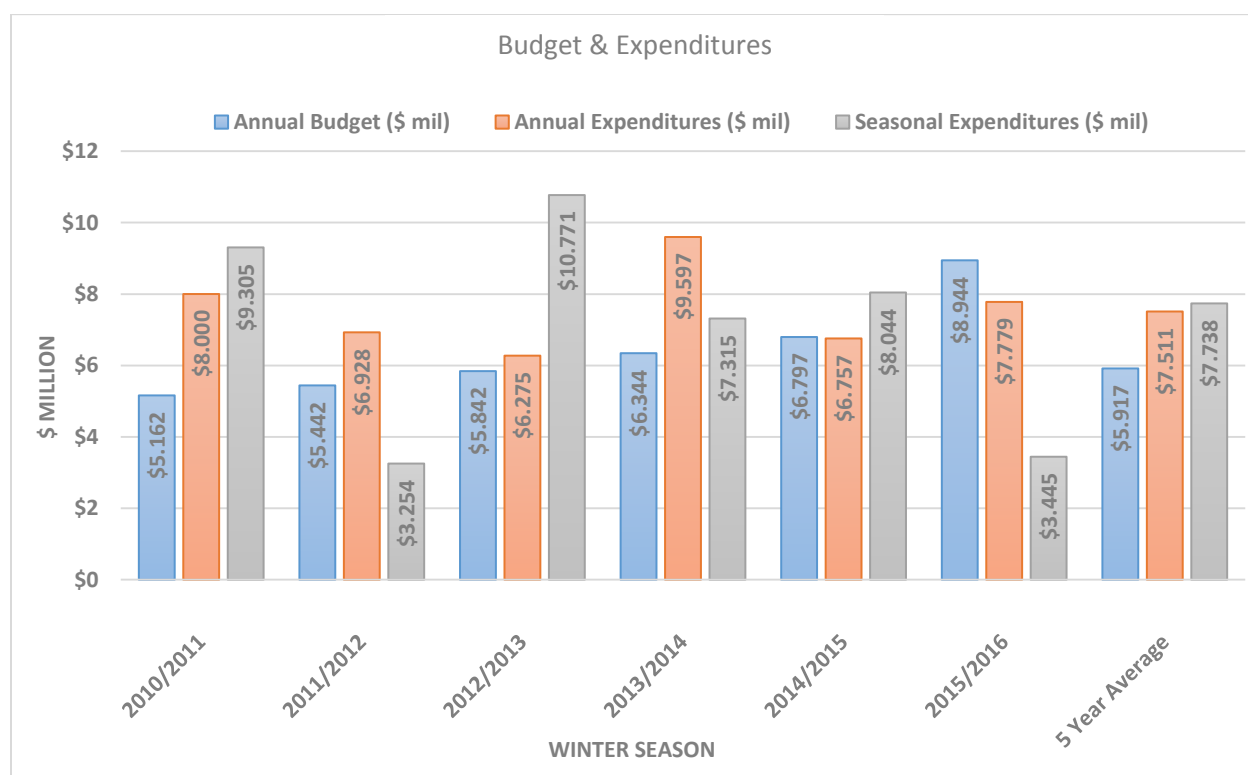
- ❄ Lower than average snow days
- ❄ Lower than average snow fall
- ❄ Above average temperatures
- ❄ Lower than average number of freeze/thaw cycles

Budget & Expenditures

In 2015, City Council approved an increase to the Winter Maintenance budget. This increase was used for the delivery of services to meet the level of service outlined in the policy, as the city continues to grow and for additional sidewalk clearing. The 2016 budget is \$9.068 million, of which \$2.707 million has been spent as of the end of September 2016. The total expenditures for 2016 are forecasted to be \$5.645 million, based on average conditions expected for October, November, and December.

Projected expenditures are well below seasonal norms due to the driest and warmest winter season in over 80 years, according to Environment Canada.

The Winter Maintenance Reserve was put in place to fund shortfalls as a result of extreme snow events or severe winter conditions. It has a current balance of \$3.9 million. This reserve can be used to fund any shortfalls for winter road maintenance when the community experiences severe winter conditions or extreme snow events.



**Seasonal expenditures represent traditional winter season expenditures between October and April. The annual expenditures represent the approved budget for a fiscal year.*

POLICY OBJECTIVES



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



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



CATEGORY 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



CATEGORY 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



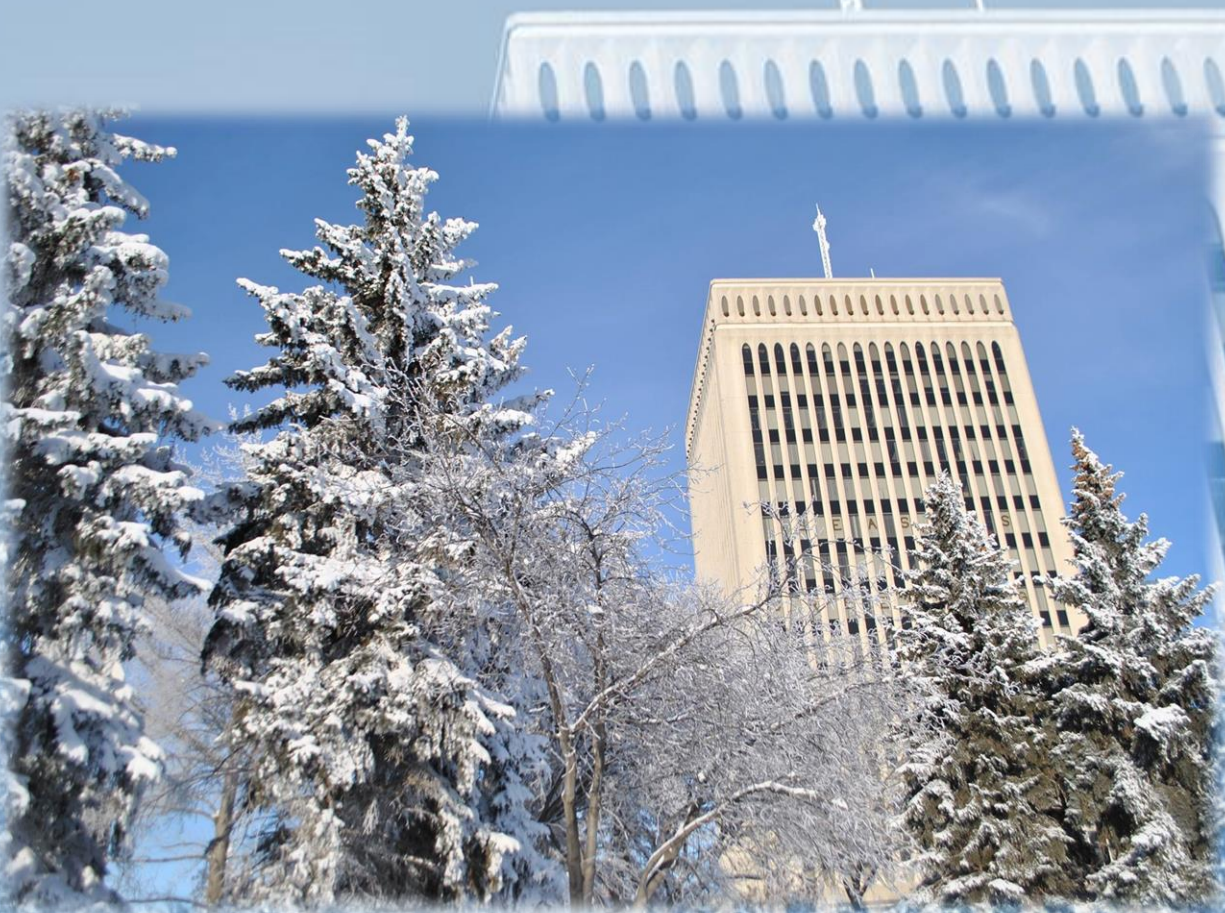
Normal winter driving conditions are maintained with **SNOW REMOVAL** operations



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

Policy Objective Achievements

The Policy objectives were met 100 per cent of the time in the 2015/2016 season. While some objectives did not require action because of the below average season, the focus was on addressing slippery conditions in the alley network during Solid Waste collection days. Working closely with the Solid Waste collection branch, impacted alleys were identified and treated to minimize service disruptions and to ensure the safety of our operators and the public.



Policy objectives were met 100 per cent of the time during the 2015/2016 season.

Communications

The Communications Department develops an annual strategy for winter operations including activities to inform the public. This strategy includes media relations, an advertising campaign for citizens to help clear snow from their sidewalks, as well as use of the City's social media tools including Facebook, Twitter and YouTube.



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36 media requests
All positive or neutral
with the exception of
one story.

Innovations & Successes

Due to the below average season Winter Maintenance crews were allocated to other activities throughout the corporation when winter maintenance activities were not required. A collaborative effort was made between departments, showcasing the mutual benefits for all parties. In many cases, Winter Maintenance crews performed work that would otherwise be done by an external contractor. This reduced contracting expenditures and provides cost avoidance opportunities.

Less snow and warmer temperatures allowed for collaboration with other departments and branches to help deliver services.

The following are examples where Winter Maintenance crews supported non-winter related activities. Crews were able to provide value-added services while maintaining staffing levels for winter maintenance response in the event of a snow storm.

Materials Storage Yard

The Asphalt Production & Materials Engineering branch requires various materials and aggregate hauled to the Materials Storage Yard. The material at this site is used by a variety of services year-round including, but not limited to, utility repairs, asphalt production, landscaping, alley reconstruction, recycled materials sales and for capital projects. Winter Maintenance crews performed this work, saving over \$26,000¹ in contracted services and contributed to a cost avoidance of over \$24,000 to the Winter Maintenance budget.



¹ Based on actual Winter Maintenance cost vs. 2015 Contractor rate for same amount of tonnage hauled

Landfill Activities

Over the 2015/2016 winter season, Winter Maintenance crews assisted at the Landfill by performing various work, including road grading, hauling dirt and fill for garbage cover and material dozing and pushing. This contributed to a savings of more than \$84,000² in favour of hiring a contractor and a cost avoidance of almost \$58,000 to the Winter Maintenance budget.



Trucking Services for Utility Repairs

Water & Sewer Construction requires trucking services for repairing water or sewer breaks and for construction projects during the winter months. Over the 2015/2016 winter season, Winter Maintenance crews provided these services, saving more than \$100,000³ in contracted services. The work performed also contributed to a cost avoidance of over \$59,000 to the Winter Maintenance budget.



² Based on actual Winter Maintenance cost vs. 2015 Contractor rate for same amount of hourly work performed

³ Based on actual Winter Maintenance cost vs. 2015 Contractor rate for same amount of hourly work performed

Maintenance of Grid Roads & Gravel Alleys

Because of the lack of snow and warmer temperatures, the maintenance of grid roads and gravel alleys, continued sporadically throughout winter months. Winter Maintenance crews were able to assist with that work, contributing to a cost avoidance of almost \$31,000 to the Winter Maintenance budget.



Concrete Repairs

Favourable conditions for concrete work in the 2015/2016 winter season allowed for the continuation of activities generally carried out in the spring, including picking up tarps, backfilling open cuts, gutter patching and landscaping, as well as building concrete forms. In anticipation of the upcoming construction season, these activities were carried out sporadically throughout winter months. This contributed to a cost avoidance of almost \$80,000 to the Winter Maintenance budget.

Asphalt Repairs

Much like Concrete Services, the Asphalt Services branch was able to continue programming due to the favourable conditions experienced in the 2105/2016 winter season. Taking advantage of the capacity in Winter Maintenance, crews were able to continue with work including shoulder grading, filling potholes and backfilling sunken utility cut repairs. This contributed to a cost avoidance of more than \$255,000 to the Winter Maintenance budget.



Looking Forward

With a commitment to continuous improvement, Winter Maintenance is excited to embark on initiatives that will help to improve services for future seasons. Recommendations have already been, or will be, put forward in the coming years.

Proposed Future Initiatives

Further to the successes already achieved, the following are additional proposed changes to be implemented or considered in the future, to enhance the City's winter maintenance services.

Snow Storage Site User Fee

Beginning November 1, 2016, a per load fee is being charged to private contractors using the Snow Storage Site, to recover a portion of the cost to operate that facility. The City estimates that approximately 60 per cent of the snow hauled to the site is from external contractors.

Improvements to the site to prepare for implementation include site drainage and access improvements, site infrastructure, including electricity installation and the radio frequency identification (RFID) system for electronic billing.

Enhanced Sidewalk Clearing

The City has enhanced snow clearing on sidewalks without private frontage using a phased approach. Phase 1 was approved by City Council in December 2014, and Phase 2 and 3 approved in December 2015. Phase 4 may be considered for recommendation in 2018 or later.

These enhancements benefit the community as these are adjacent to heavily used locations around City-owned parks, leading into various subdivisions and are transit routes. It also begins to align the policy with the *Design*

PROPOSED FUTURE INITIATIVES



Snow Storage Site user fee
CR15-86



Enhanced Sidewalk Clearing
Phase 1, 2, & 3
PWI14-22 & PWI15-20



Snow Routes Pilot Project
PWI14-21



Upgraded On-Street Bicycle
Routes (Category 1 or 2 roads)
CM14-16



Liquid De-icing Pilot

Regina: The Official Community Plan to “Establish all-season design and maintenance priorities for roads, sidewalks and pathways to ensure the transportation network provides safe travel, access and mobility, transit facilities, pedestrian and bicycle routes, and Public buildings and institutions.”

Snow Routes Pilot Project

Over the last several years, much attention has been paid to the difficulties and challenges presented by parked cars during plowing and removal operations throughout the winter months. In an effort to engage the community on their interest in implementing a Snow Route program, a public consultation took place in March and April 2016. This included online and telephone surveys and public

engagement sessions throughout the community. This public feedback has shaped the recommendation to develop a pilot program concentrating on a small area of 4.5 km in the initial program. This will allow for improvements and adjustments to the program prior to its potential expansion.



**We're considering a
Snow Routes program
and want your feedback.**





Enhancement of Bicycle Lane Snow Clearing

Currently, the City has five on-street bicycle routes totalling 8.9 km which are cleared as part of the winter maintenance processes. Out of that, 7.5 km of on-street bicycle routes are on Category 1 and 2 roads and 1.4 km are located on Category 3 roads.

As part of the Transportation Master Plan and in alignment with *Design Regina: The Official Community Plan*, Winter Maintenance staff conducted a study on the use of current bicycle lanes during winter months to better understand if upgrading all bicycle routes or bikeways to Category 1 or 2 priority would be feasible and beneficial. Over the 2015/2016 season, the bicycle lanes were in good winter driving conditions and clear of snow. However, these bicycle routes were rarely used with an average 1.7 cyclists during peak times and an average of 2 cyclists during non-peak times.

Currently, there is a proposed five-year plan to add an additional 41.1 km of bicycle lanes, segregated bicycle lanes, bicycle boulevards, and shared bus/bicycle lanes. Considering low use of bike paths in the winter months and high cost associated with upgrading all streets with bike lanes to Category 1 or 2, this enhancement is not currently recommended. Administration will continue to monitor the usage of bike lanes for consideration of enhanced snow removal levels of service in the future.

Use of Liquid Salt in Ice Control

Winter Maintenance is currently investigating an alternative ice control method using liquid salt. Currently, the City uses dry sand; this 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 during the course of last winter season as Winter Maintenance currently has one Ice Control truck capable of liquid salt application. Results were encouraging and further analysis will continue during the winter of 2016/2017.

BENEFITS



Approximately 40 per cent in dry material savings



Sand/salt mixture immediately sticks to the pavement



Bare/dry pavement conditions are reached quicker



Prevents snow and ice from bonding with pavement surface