

Development of an Emergency Response Plan for Extreme or Unusual Snow Events

ISSUE

The Roadways, Fleet and Support Department (RFS) does not currently have a formal Emergency Response Plan (ERP) for responding to extreme or unusual winter storms that result in major disruptions to mobility and safety concerns for the residents of Saskatoon.

This report discusses the feasibility of developing a formal plan for guiding RFS's response to extreme or unusual winter storms that may occur in the future.

BACKGROUND

At the Regular Business Meeting of City Council held on December 21, 2020, Councillor R. Donauer made the following Motion:

“That the Administration please report on the ability to develop a response to extreme or unusual snow events that shut down the city and create a safety issue for our residents, and the potential cost. The intent is to have a plan for city-wide snow clearing and/or removal after extreme events, to determine in advance what the trigger is for such action, and to address funding such as a reserve specifically for extreme events.”

Freezing rain followed by heavy snowfall occurred between November 7 and 9, 2020 with an estimated 30 to 40 cm of snow accumulation, including high winds and drifting. Following this severe snowstorm, another snowstorm occurred on November 13, 2020 resulting in an additional 8 to 10 cm of snow accumulation.

After the initial snowstorm, streets were not passable without snow grading. In the first few days following the snowfall, snow grading was focused on priority streets, as per the approved Service Level for Snow and Ice Management.

The initial steps of the response to this extreme snow event were undertaken following the current snow event management model that is applicable to typical winter snowstorms. The approved service level includes snow grading and removal only on the priority street system. However, the severity and magnitude of the snowstorm required that snow grading and removal occur on all city streets, including local streets in residential neighborhoods, to restore mobility and regular winter driving conditions across the city.

The need to quickly address high-priority mobility requirements of various First Responders and an unprecedented volume of public and stakeholder inquiries, proved that the capacity of the regular operational team responsible for the management of typical snow events was not sufficient to manage this extreme snow event. As a result,

additional resources from other departments within the City had to be mobilized to assist with the coordination and management of the response.

The November snowstorm response resulted in significant incremental costs. The total 2020 Snow and Ice Management costs were approximately \$23.7 million. These expenses include the 2020 Snow and Ice Management budget of \$13.4 million and the incremental cost of \$10.3 million incurred in 2020.

The Snow and Ice Management Contingency Reserve offset a portion of the incremental 2020 cost before being fully depleted.

The total cost of the November snowstorm response was approximately \$14.0 million. This included approximately \$11.0 million in 2020 and \$3.0 million in 2021.

CURRENT STATUS

The overall response to the November snowstorm provided the Administration with a significant amount of new operational and financial information. Lessons learned from this event have been documented so they can be used in the development of a formal response plan for future extreme or unusual snow events.

The City of Saskatoon currently has two reserves that are approved under the City of Saskatoon Council Policy C03-003 (Policy): 1) Snow and Ice Management Contingency Reserve and 2) Major Natural Event Reserve.

Snow and Ice Management Contingency Reserve

The purpose of this contingency reserve is to accumulate funds and offset any over-expenditures in the Snow and Ice Management budget attributable to variations in normal winter weather conditions, thus stabilizing the effect of weather variations on the mill rate and on the City's year-end financial position.

The Policy states that an annual provision will be made from the City's Operating Budget in those years when the reserve is not at the maximum. The Policy requires that the balance of the reserve does not exceed the annual operating budget for the Snow and Ice Management service line.

The annual reserve contribution has been set at \$488,500. The Policy allows that the Snow and Ice Management service line surpluses be contributed to the reserve if the overall service line spending is less than the budgeted amount. These surplus transfers are typically considered when there are no pressures in other operating programs that need to be offset.

Prior to the November snowstorm, the balance of the Snow and Ice Management Contingency Reserve was \$3.45 million. Following the November snowstorm, the reserve was depleted, and the current reserve balance is \$0.

Major Natural Event Reserve

The purpose of this reserve is to assist in offsetting operational and capital expenditures required due to a major natural event. Major natural events include, but are not limited to blizzards, plough winds/tornadoes, heat wave, severe rain, river flood event and extreme cold. The Policy states that provisions to the reserve shall consist of an annual amount authorized by City Council through the Operating Budget. The current provision from the Operating Budget is \$0 and the current reserve balance is also \$0. The Policy states that the reserve will be capped at \$250,000.

DISCUSSION/ANALYSIS

Based on the experience gained through the response to the November snowstorm, development of a formal Emergency Response Plan (ERP) for responding to extreme or unusual snow events and developing triggers to initiative the ERP are feasible.

To create a robust ERP, detailed planning work will be undertaken by the Roadways, Fleet and Support (RFS) team in collaboration with the City of Saskatoon’s Emergency Management Office (EMO). This work will also involve other internal and external stakeholders. The following areas will be considered and addressed in the plan:

Area of Consideration	Planning Action
Definition of an extreme or unusual snow event	<ul style="list-style-type: none"> - Develop criteria for the conditions that will trigger the ERP. - These criteria will consider the characteristics of the winter storm and the impact on safety and mobility in Saskatoon.
RFS Incident Command Center and Communication	<ul style="list-style-type: none"> - Include coordination with EMO’s Emergency Operations Center and identify roles and responsibilities of both groups during the event. - Identify internal and external communication protocols, including the roles and responsibilities of the designated Information Officers within the Incident Command Centre and EMO’s Emergency Operations Centre.
Work activities and prioritization	<ul style="list-style-type: none"> - Define what work activities will be undertaken that are not included in the Service Level for Snow and Ice Management, and what conditions must be met for the emergency to be declared over. - Work activities to consider criteria for inclusion of snow grading and snow removal along local streets in residential neighbourhoods. - All identified work activities will be prioritized.
Emergency level of service for priority and residential snow grading and removal	<ul style="list-style-type: none"> - Define an expected emergency level of service for city-wide snow grading and removal for priority streets and local streets.
Sequencing for priority streets and local streets in residential neighborhoods	<ul style="list-style-type: none"> - Propose sequencing for snow grading and removal on both the priority street system and local streets in residential neighborhoods.
Equipment and staffing requirements	<ul style="list-style-type: none"> - List available internal equipment and staff, as well as contractor resources that would be available, if required. - Provide suggestions for effective deployment of those resources across the city.

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Procurement of contractor services	<ul style="list-style-type: none">- Propose a strategy for securing contractor services and equipment in a cost-effective and timely manner that ensures access to contractor forces when needed.
Allocation of additional resources to the emergency management team	<ul style="list-style-type: none">- Identify internal resource requirements and a protocol for reassignment to the emergency management team, to ensure that sufficient resources are in place from the start of the event.- These would be utilized to provide operational direction and support, contractor supervision, and quality control during the event.
Parking restrictions	<ul style="list-style-type: none">- Propose an approach to addressing parking restrictions throughout the city in preparation for an extreme or unusual snow event.
Snow management facilities	<ul style="list-style-type: none">- Address challenges with the large number of trucks hauling snow to the snow management facilities and recommend an approach to managing high snow and truck traffic volumes.

FINANCIAL IMPLICATIONS

The last similar severe winter storm was in January of 2007, 14 years ago. Assuming that the frequency of extreme or unusual snow events is approximately 14 years, an annual contribution of approximately \$1.0 million to the Major Natural Event Reserve, annually adjusted for inflation, would allow for accumulation of approximately one Snow and Ice Management budget over a period of 14 years. Using the November 2020 snowstorm costs as a benchmark, this level of reserve funding is considered sufficient to fund extreme or unusual snow events in the future; however, this scenario is not feasible under the current City Council Policy C03-003 as the cap on the Major Natural Event Reserve is set at \$250,000.

If the above scenario was given further consideration, additional discussions on the appropriate annual contributions would be required to ensure sufficient funding is accumulated in the reserve for potentially more than one type of major natural event, as the Major Natural Event Reserve can be used to fund different types of natural emergency events and accessed by groups other than RFS.

Another option is to add to the Fiscal Stabilization Reserve that is meant to cover for the overall corporate deficit. Rather than add money in a separate reserve that is meant to achieve the same result, increasing the balance in the Fiscal Stabilization Reserve would allow for unexpected variances to the operating results regardless of the reason.

OTHER IMPLICATIONS

There are no privacy or legal implications identified.

The Emergency Response Plan will evaluate and consider the incremental environmental impacts resulting from the November 2020 snowstorm response and similar extreme weather events on the snow management facilities and their surrounding areas.

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The Emergency Response Plan will evaluate and consider the incremental social impacts resulting from the November 2020 snowstorm response and similar extreme weather events on residents and communities.

NEXT STEPS

Unless otherwise directed, the Administration will develop a formal Emergency Response Plan, triggers for initiating the Emergency Response Plan, and a recommended reserve funding strategy for responding to extreme or unusual snow events and present it to City Council prior to the start of the next winter season.

Report Approval

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