

Status of Emergency Preparedness Focus on Risk – Severe Winter Weather

RECOMMENDATION:

That the Emergency Management Committee recommends that Council receive this report for the Corporate Record.

RECOMMENDATION OF THE EMERGENCY MANAGEMENT COMMITTEE, 2022 NOVEMBER 3:

That that Council receive this report for the Corporate Record.

HIGHLIGHTS

- The City of Calgary has committed to regularly updating Council and citizens on the priority disaster risks in Calgary, as identified in the *Disaster Risk Assessment*.
- **What does this mean to Calgarians?** The City of Calgary's *Disaster Risk Assessment* has determined that blizzards, extreme cold, and winter storms are three of the top 16 high risks that could impact Calgary.
- The City is well prepared with a range of emergency response plans and procedures to mitigate the impacts of severe winter weather events.
- **Why does it matter?** If citizens and businesses are aware of the top disaster risks for Calgary and understand how they can prepare, they will be able to take actions that protect themselves, their families, their businesses, and communities.
- Severe winter weather could result in risk to safety of citizens, with increased risk for vulnerable populations. It has significant impacts on the mobility of Calgarians, which can result in cascading economic impacts. Critical infrastructure and supply chain disruptions may also result from these events.
- Severe winter weather information also informs business, policy, and capital planning decisions.
- Background and Previous Council Direction is included as Attachment 1.

DISCUSSION

Every four years, Administration coordinates a city-wide disaster risk assessment to understand Calgary's disaster risk environment, share risk information with Calgarians, and prioritize activities and allocation of resources. In mid-2022, an updated *Disaster Risk Report* evaluated a total of 65 individual hazards and threats that pose a risk to Calgary and is in Attachment 2.

Risk is determined by the severity and frequency of an event, the number of people and assets exposed to the hazard, and socioeconomic, physical, and environmental factors that make them vulnerable. The *Disaster Risk Assessment* has identified blizzards, extreme cold, and winter storms as high risk and likely events with moderate consequences. These events pose the highest risk six months of each year, running from October to March. Winter weather is a normal occurrence, however, when it becomes severe or prolonged it increases risk to life safety and results in cascading impacts requiring a coordinated emergency response.

As identified in the *Disaster Risk Report*, climate change is expected to increase the frequency, duration, and severity of many hazards, however heavy snowfall is expected to decrease as precipitation shifts from snow to rain in winter months. The winter season is expected to be

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shorter in the future, but Calgary will continue to experience winter storm hazards. Global warming increases the amount of energy available in the atmosphere to fuel severe storms, which may contribute to increased blizzard frequency and intensity.

Cascading impacts can include the loss of heat, power, communications services, and other lifeline utilities. Supply chain and travel interruptions are also common as all modes of transportation, including rail and air, can be disrupted. Structural damage to buildings, including roof collapses, can occur due to the weight of heavy snow.

Calgary experienced the fourth coldest February in its history, resulting in the loss of lifeline utilities. As a result of the sustained period of cold temperatures, nearly 300 water pipes were reported frozen between March 8 and April 25, 2019, a dramatic increase from the 10 frozen pipes typically reported in a year. During the same time period, 100 sanitary service lines also froze compared to the normal annual average of 10. About 300 businesses and residences were impacted and averaged 13 days without water service.

A late summer snowstorm in September 2014, known as 'Snowtember', impacted all areas of Calgary. This was the snowiest September in 130 years resulting in loss of lifeline utilities, including over 74,000 ENMAX customers without power. In addition, there were 7,000 calls to 9-1-1, 47,000 calls to 3-1-1, significant interruptions to the city's road network, over 100 traffic lights down and three LRT stations without power. Snowtember also affected half of the city's tree population. The event required a substantial response and recovery effort from multiple City services, emergency services, members of Canada Task Force 2 and Alberta Environment and Sustainable Resource Development, and resources from Edmonton and Toronto.

Preparing The City of Calgary for Severe Winter Weather

Within The City, the *Municipal Emergency Plan* provides an overarching plan to guide response and recovery to any type of emergency, including severe winter weather events. Attachment 3 summarizes the *Municipal Emergency Plan* and its annexes.

The City implements a range of plans, policies, and training to prepare for, and mitigate the risk of, severe winter weather:

- Regular spring and fall simulated scenario exercises to validate emergency plans, procedures, policies, and public communication strategies. In 2022 November, a severe winter storm exercise will be conducted to test processes and plans.
- The City of Calgary's *Extreme Cold Weather Plan* establishes actions to be taken, including the opening of warming centres, in the event of extreme cold causing prolonged utility outages, critical infrastructure failures, or impacts on vulnerable populations.
- The City has mutual aid agreements with other municipalities for the provision of additional resources and equipment to help manage snow and debris removal.

Preparing Calgarians and the Community for Severe Winter Weather

The City provides a range of infrastructure, programs, and education to help mitigate the risk of severe winter weather in communities and ensure citizens are prepared:

- Environment and Climate Change Canada has early warning systems in place to notify the public, emergency response personnel, community groups, and health providers in advance of severe winter storm events.

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- Mobility has a Snow and Ice Control Operational Program Plan that includes a snow plan and route priorities.
- The City recently updated its Snow and Ice Control Policy to deal with snow emergencies and severe weather events to expedite city-wide response.
- Calgary Transit has a comprehensive Severe Winter Weather Response Plan that supports the delivery of safe and reliable transit service during winter storms by:
 - Establishing response thresholds and procedures to ensure continuity of service to customers;
 - Communicating with customers about service impacts and changes (i.e. snow detours);
 - Supporting collaboration with internal and external City partners when responding to emergency situations.

The City also has education programs and services in place designed to prepare and offer support to Calgarians in the event of severe winter weather:

- An extreme cold weather resource map is provided on Calgary.ca to inform Calgarians of warming space locations where they can get out of the cold. Community Strategies works in partnership with other agencies to ensure Calgarians experiencing homelessness are provided this information.
- The Calgary Disaster Risk Explorer online resource offers the opportunity to learn about local winter hazards, potential and historical impacts, and mitigation activities. It includes maps and resources to help Calgarians understand snow and ice issues and check the risk specific to their community.

Supporting Calgarians During and Following Severe Winter Weather

Incident response can be complex as it requires enhanced coordination and may have to rapidly scale in size and speed depending on the extent of the weather impacts.

The City has several key measures in place to support community response to severe winter weather, including:

- Calgary 9-1-1 has mitigation strategies in place to manage call surges and ensure call prioritization focused on citizen health and safety.
- Calgary 9-1-1 has established processes for connecting callers with appropriate resources to address a range of safety issues, including assistance for those sleeping outside during severe winter weather.
- Through the Critical Service Provider group, Community Strategies liaises with the Government of Alberta and non-profit organizations to assess and respond to the impacts of an extreme cold weather event on resources and available shelter spaces. This support includes working with the Calgary Homeless Foundation, Government of Alberta, and shelter partners to increase spaces where necessary and addressing barriers to access.

STAKEHOLDER ENGAGEMENT AND COMMUNICATION (EXTERNAL)

- Public Engagement was undertaken
- Public Communication or Engagement was not required

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- Public/Stakeholders were informed
- Stakeholder dialogue/relations were undertaken

Administration engages over 60 Calgary Emergency Management Agency member organizations in education, training, exercise programming, emergency response planning, and communications. The Agency consists of City of Calgary business units, government agencies, critical infrastructure operators, utilities, schools, industry groups, and community service providers.

IMPLICATIONS

Social

The City's emergency planning aligns with the *Social Wellbeing Policy* of prevention (d) *The City will aim to stop problems before they start, using a prevention approach* by ensuring the social impacts of disasters are being mitigated before disasters occur such as severe winter weather events.

Environmental

Early snowstorms prior to trees losing their leaves can pose a risk to the urban tree canopy. In addition, cascading effects of severe winter storms, such as sanitary line freezing, can pose environmental risks.

Economic

Calgary Emergency Management Agency members' work addresses the *Economic Resilience Strategy to create a more Resilient Economy*, as mitigation efforts will result in significant future savings. Literature indicates that mitigating disaster risk and having strategies in place to decrease the impact is more economically, socially, and environmentally sound than managing disaster consequence. Emergency response actions would further reduce potential damage.

Service and Financial Implications

No anticipated financial impact

Include actual figure

Planning, training, and public education activities for severe winter weather events reside in the current The City of Calgary's business plan and budget. The City currently does not account for large-scale emergency response in any of its operating budgets. The September 2014 snowstorm resulted in approximately \$60 million in response and recovery costs.

RISK

Severe winter weather presents a risk to virtually every institution, geography, and service in Calgary, as it can paralyze mobility of our population and interfere with critical infrastructure and critical supply chains.

Specifically, severe winter weather contributes to five of eight corporate risks: employee experience, legal risk, reputation risk, social wellbeing risk, and service delivery risk. To ensure

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EM2022-1048
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a more sustainable and resilient city, the *Disaster Risk Assessment* should help inform business, policy, and capital planning across The City of Calgary.

ATTACHMENTS

1. Background and Previous Council Direction
2. Calgary Emergency Management Agency *Disaster Risk Report*
3. *Municipal Emergency Plan* Annex Summary
4. **Presentation**

Department Circulation

General Manager/Director	Department	Approve/Consult/Inform
Doug Morgan	Operational Services	Inform