

Status of Emergency Preparedness – A Focus on Critical Infrastructure Risk

RECOMMENDATION:

That the Emergency Management Committee receive this report and accompanying presentation for the Corporate Record.

HIGHLIGHTS

- A failure of critical infrastructure is listed as a high risk in Calgary’s Disaster Risk Assessment, indicating a need to manage this disaster risk through prevention, mitigation, and preparedness. The events of 2020, COVID-19, the 13 June hailstorm, and the 24 July storm demonstrated the value of current resilience in Calgary’s Critical Infrastructure Network, while also highlighting additional opportunities to increase resilience through collaboration and investment.
- What does this mean to Calgarians?
 - Resilience in Calgary’s critical infrastructure (essential processes, systems, facilities, networks, assets and services) is necessary to ensure the services most critical to Calgarians are available during emergencies and disasters.
- Why does it matter?
 - Critical infrastructure failures can result in significant social, economic, and environmental impact, and in some cases, a loss of life. Working towards resilient critical infrastructure means our City is a place where citizens know they and future generations will be able to enjoy continual access to the essential services that ensure quality of life, regardless of future disruptions.
- In alignment with Public Safety Canada’s Critical Infrastructure program, the Calgary Emergency Management Agency (CEMA) has developed a local Calgary Critical Infrastructure Network (CCIN) composed of critical infrastructure owners and operators including transportation, utility, and emergency service providers such as Atco, ENMAX, EMS, CPS, CP Rail, and others.
- During the 2020 COVID-19 Pandemic response, CEMA utilized members of the CCIN to strategically coordinate and efficiently manage response within the Agency.
- The 2020 June 13 Hailstorm, estimated to cost \$1.3 billion in insurable losses, revealed a greater need for a more holistic integration of mitigation strategies when developing and retrofitting Calgary’s critical infrastructure. This is increasingly important in the face of more frequent and intense climate-related hazards.
- This work supports the Corporation’s Sustainability Direction 2020 objective “*Calgary, its communities and neighbourhoods are safe, resilient and supportive*”.
- Background and Previous Council Direction is included as Attachment 1.

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DISCUSSION

The 2018 Disaster Risk Assessment assessed a total of 65 individual hazards and threats that pose a risk to Calgary (more information on the Disaster Risk Assessment is found in Attachment 2). Over the course of the 2019-2022 business cycle, CEMA will provide Council with an in-depth understanding of Calgary's risk environment and the work The City of Calgary and our Agency members are doing to address Calgary's high-risk hazards.

On an annual basis, Alberta consistently accounts for approximately 66% of all insurable losses reported nationwide. In Calgary, we have been impacted by five of the 10 costliest disasters in Canadian history. Between 2010-2016, the estimated annualized losses public and private disaster losses in Calgary was over \$600 million, with the City of Calgary accounting for approximately \$70 million annualized for that period. These events frequently impacted critical infrastructure, including: the 2013 Southern Alberta Floods, the fire at Shaw Court (2012), the 2014 September snowstorm, a major downtown power outage (2014), and COVID-19 (ongoing). Understanding our risk landscape and the local hazards specific to Calgary's complex communities, CEMA initiated work to increase the resilience of our critical infrastructure.

Critical Infrastructure consists of ten sectors: Transportation, Finance, Health, Energy, Water, Safety, Government, IT & Communications, Manufacturing and Food. These sectors rely on one another to provide vital services, facilities, processes, systems, and governance to citizens every day. A failure or disruption in any one of these sectors can result in a cascade of impacts, due to their interdependencies and increasing complexity. This kind of event can occur as a result of environmental, human-induced, or technological events, making critical infrastructure also vulnerable to the other 12 high-risk hazards identified in the Disaster Risk Assessment.

The National Critical Infrastructure Resilience Strategy and Action Plan was developed in 2009 by Public Safety Canada and subsequently endorsed by the Province of Alberta. This is the foundation for CEMA's work to build resilience in our essential systems that support Calgarians. The Strategy contains three objectives designed to support and increase the resilience of critical infrastructure in Canada:

1. Build partnerships
2. Implement an all-hazards risk management approach; and
3. Advance the timely sharing and protection of information among partners

In 2018, CEMA partnered with Public Safety Canada to engage national critical infrastructure owners and operators to better understand sectoral interdependencies. Out of this engagement, CEMA created the CCIN. While the primary intent of this network was to increase overall resilience, CEMA also leveraged the work undertaken by the network to coordinate the evolving needs of Calgary's critical Infrastructure providers throughout the first wave of the COVID-19 event. This includes creating a dashboard to track operational impacts to critical infrastructure and identify shifting priorities as the event evolved. The networked approach allowed for greater inter- and

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intra-sectorial engagement, increasing the effectiveness of individual, sectoral, and community response to the event.

Canada's Emergency Management Strategy (2019) cites an average 6:1 return for each dollar invested in mitigation and preparedness, based on the compounded gains in the resilience of physical, social, economic, and psychosocial components of our communities. The work conducted by CCIN was in line with this literature and enabled CEMA and its Agency members to coordinate and support Calgarians more effectively throughout COVID-19. Continued work in increased business continuity planning, cross-sector collaboration, risk awareness, and holistic planning processes will cultivate The City's resilience when facing future events.

STAKEHOLDER ENGAGEMENT AND COMMUNICATION (EXTERNAL)

- Public Engagement was undertaken
- Public Communication or Engagement was not required
- Public/Stakeholders were informed
- Stakeholder dialogue/relations were undertaken

Who was involved:

CEMA Agency members that are part of the 10 Critical Infrastructure Sectors.

What we did:

- 1) October 2018: CEMA hosted and assisted in the development of a federal workshop for national critical infrastructure owners and operators.
- 2) March 2019: Based on the outcomes of this workshop, CEMA created a local Calgary Critical Infrastructure Network, composed of approximately 20 agency members. CEMA met with these agencies individually and collectively to better understand specific strengths, weaknesses and potential areas the network could increase their resilience.

What we heard:

The CCIN collectively identified four key areas of development:

- 1) *Intersectoral Education:* Workshops and resources to better understand aspects of different sectors and how they relate to one another.
- 2) *Communication Tools:* A means of sharing information and updates regarding their infrastructure, potential needs, and potential disruptions that could cause cascades in other sectors.
- 3) *Training & Exercises:* Increased number of exercises throughout the year and/or the opportunity to do focused tabletops with the other CCIN members.
- 4) *Common Understanding of Calgary's Critical Infrastructure:* Develop a clear framework for what Calgary considers 'Critical Infrastructure' for internal and external members.

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What was done with that information:

- 1) Conducted an Intersectoral Education Workshop in the Fall of 2019.
- 2) Conducted a focused Agency exercise in the Fall of 2019 to begin building relationships and understand the interrelated nature of our critical infrastructure.
- 3) Created a 2020 Action Plan and calendar, though COVID-19 will require this to be updated.
- 4) Informed operations in the Emergency Operations Centre during COVID-19, including our communication strategies, decision-making models, and prioritization of resources and objectives.

IMPLICATIONS

Social

- Social Wellbeing Policy – This work aligns specifically with *(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.

Environmental

- Climate Resiliency Strategy – This work aligns with one of the key themes identified, to “*strengthen the built environment to ‘weather the storms’*” of future shocks and stresses caused by the increasing frequency and severity of severe weather events and climate change impacts.

Economic

- Economic Resilience Strategy – This work addresses *Result 6. Create a more Resilient Economy*, as mitigation efforts will result in significant savings for future shocks and stresses.
- Resilient Calgary Strategy – This work is in alignment with *Outcome 4A: Calgary infrastructure investment is strategic, coordinated and future-focused.*

Service and Financial Implications

Existing operating funding - base

Critical Infrastructure is a central tenet of Emergency Management and is highlighted as an area of work in CEMA's current business plan. Activities described in this report are part of regular CEMA business.

RISK

The 2018 Disaster Risk Assessment lists a Critical Infrastructure failure as a high disaster risk in Calgary. Literature indicates that managing disaster risk is more economically, socially, and environmentally sound than managing disaster consequence, indicating that this type of disaster risk requires specialized attention and management. The City of Calgary is an operator of many pieces of critical infrastructure in our city, thus CEMA identified a need for increased focus in its 2019-2022 business plan, many specifics of which have been outlined in this report.

**Community Services Report to
Emergency Management Committee
2020 October 22**

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ATTACHMENTS

1. Previous Council Direction, Background
2. CEMA Disaster Risk Assessment Briefing Note

Department Circulation

General Manager	Department	Approve/Consult/Inform
Not applicable		