



## AGENDA

### EMERGENCY MANAGEMENT COMMITTEE

May 25, 2021, 9:30 AM  
IN THE COUNCIL CHAMBER

Members

Councillor G-C. Carra, Chair  
Councillor E. Woolley, Vice-Chair  
Councillor G. Chahal  
Councillor S. Chu  
Councillor J. Farkas  
Councillor S. Keating  
Councillor J. Magliocca  
Mayor N. Nenshi, Ex-Officio

#### ***SPECIAL NOTES:***

*Public are encouraged to follow Council and Committee meetings using the live stream [www.calgary.ca/watchlive](http://www.calgary.ca/watchlive)*

*Members may be participating remotely.*

1. CALL TO ORDER
2. OPENING REMARKS
3. CONFIRMATION OF AGENDA
4. CONFIRMATION OF MINUTES
  - 4.1. Minutes of the Regular Meeting of the Emergency Management Committee, 2021 May 03
  - 4.2. Minutes of the Regular Meeting of the Emergency Management Committee, 2020 October 22
5. CONSENT AGENDA

5.1. DEFERRALS AND PROCEDURAL REQUESTS  
None

5.2. BRIEFINGS

5.2.1. Status of Emergency Preparedness 2020, EM2021-0743

6. POSTPONED REPORTS  
*(including related/supplemental reports)*

None

7. ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

7.1. Status of Emergency Preparedness Focus on Risk: Severe Summer Weather, EM2021-0689

7.2. COVID-19 Update (Verbal), EM2021-0809

8. ITEMS DIRECTLY TO COMMITTEE

8.1. REFERRED REPORTS  
None

8.2. NOTICE(S) OF MOTION  
None

9. URGENT BUSINESS

10. CONFIDENTIAL ITEMS

10.1. ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES  
None

10.2. URGENT BUSINESS

11. ADJOURNMENT



## MINUTES

### EMERGENCY MEETING OF THE EMERGENCY MANAGEMENT COMMITTEE

**May 3, 2021, 5:00 PM  
IN THE COUNCIL CHAMBER**

**PRESENT:**

Councillor G-C. Carra, Chair (Remote Participation)  
Councillor E. Woolley, Vice-Chair (Remote Participation)  
Councillor G. Chahal (Remote Participation)  
Councillor S. Chu (Remote Participation)  
Councillor J. Farkas (Remote Participation)  
Councillor S. Keating (Remote Participation)  
Councillor J. Magliocca (Remote Participation)  
Mayor N. Nenshi, Ex-Officio  
Councillor D. Colley-Urquhart (Remote Participation)  
Councillor J. Davison (Remote Participation)  
Councillor D. Farrell (Remote Participation)  
Councillor J. Gondek (Remote Participation)  
Councillor W. Sutherland (Remote Participation)

**ALSO PRESENT:**

A/General Manager K. Black (Remote Participation)  
Deputy City Clerk T. Mowrey  
Legislative Advisor D. Williams

**1. CALL TO ORDER**

Councillor Carra called today's Meeting to order at 5:24 p.m.

**ROLL CALL**

Councillor Keating, Councillor Magliocca, Councillor Sutherland, Councillor Woolley, Councillor Carra, Councillor Farrell, Councillor Chahal, Councillor Chu, Councillor Gondek, Councillor Colley-Urquhart, Councillor Davison, Councillor Farkas, Mayor Nenshi

By General Consent, Committee elected Mayor Nenshi as Chair of this Emergency Management Committee meeting and assumed the Chair at 5:26 p.m.

**2. OPENING REMARKS**

Mayor Nenshi provided opening remarks.

**3. CONFIRMATION OF AGENDA**

By General Consent, Committee confirmed the Agenda.

**4. CONFIRMATION OF MINUTES**

None

5. CONSENT AGENDA

5.1 DEFERRALS AND PROCEDURAL REQUESTS

None

5.2 BRIEFINGS

None

6. POSTPONED REPORTS

None

7. ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

7.1 Covid 19 Update (Verbal), EM2021-0716

A presentation entitled "Update on Covid 19 (Verbal)" was distributed with respect to Report EM2021-0716.

By General Consent, pursuant to Section 6(1) of Procedure Bylaw 35M2017, Committee suspended Section 78(2)(c) of the Procedure Bylaw in order to complete Item 7.1.

By General Consent, pursuant to Section 105 of the Procedure Bylaw 35M2017, Councillor Farrell added a friendly amendment to Recommendation 1 of Report EM2021-0716 by adding the words "in a Closed Meeting" following the words "to attend the 2021 May 12 Standing Policy Committee on Community and Protective Services".

Councillor Woolley rose on a Point of Order.

The Chair ruled on Councillor Woolley's Point of Order.

By General Consent, pursuant to Section 100(3) of the Procedure Bylaw 35M2017, the Committee allowed Councillor Farrell to remove her friendly amendment.

Councillor Farkas left the Remote Meeting at 6:30 p.m.

**Moved by Councillor Woolley**

That with respect to Verbal Report EM2021-0716, the following be approved:

That the Emergency Management Committee:

1. Request the Chair of the Emergency Management Committee invite the Chief Medical Officer of Health for Alberta to attend the 2021 May 12 Standing Policy Committee on Community and Protective Services to answer questions related to the ongoing impact of the pandemic on Calgarians.

ROLL CALL VOTE:

For: (6): Councillor Carra, Councillor Woolley, Councillor Chahal, Councillor Magliocca, Councillor Farrell, and Councillor Gondek

Against: (6): Councillor Chu, Councillor Keating, Mayor Nenshi, Councillor Colley-Urquhart, Councillor Davison, and Councillor Sutherland

**MOTION DEFEATED**

**Moved by** Councillor Woolley

That with respect to Verbal Report EM2021-0716, the following be approved:

That the Emergency Management Committee:

2. Direct Administration to bring increases to fines to the Face Covering Bylaw from \$100 to \$500 to the 2021 May 10 meeting of Council.

For: (12): Councillor Carra, Councillor Woolley, Councillor Chahal, Councillor Chu, Councillor Keating, Councillor Magliocca, Mayor Nenshi, Councillor Colley-Urquhart, Councillor Davison, Councillor Farrell, Councillor Gondek, and Councillor Sutherland

**MOTION CARRIED**

Councillor Carra left the Remote Meeting at 6:45 p.m.

**Moved by** Councillor Farrell

That with respect to Verbal Report EM2021-0716, the following be approved:

That the Emergency Management Committee:

1. Request the Chair of the Emergency Management Committee invite the Chief Medical Officer of Health for Alberta to attend the 2021 May 12 Standing Policy Committee on Community and Protective Services in Closed Meeting to answer questions related to the ongoing impact of the pandemic on Calgarians.

ROLL CALL VOTE:

For: (7): Councillor Woolley, Councillor Chahal, Councillor Keating, Councillor Colley-Urquhart, Councillor Davison, Councillor Farrell, and Councillor Gondek

Against: (4): Councillor Chu, Councillor Magliocca, Mayor Nenshi, and Councillor Sutherland

**MOTION CARRIED**

8. ITEMS DIRECTLY TO COMMITTEE

8.1 REFERRED REPORTS

None

8.2 NOTICE(S) OF MOTION

None

9. URGENT BUSINESS

None

10. CONFIDENTIAL ITEMS

10.1 ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

None

10.2 URGENT BUSINESS

None

11. ADJOURNMENT

**Moved by** Councillor Woolley

That this meeting adjourn at 6:49 p.m.

**MOTION CARRIED**

The next Regular Meeting of the Emergency Management Committee is scheduled to be held on 2021 May 25 at 9:30 a.m.

CONFIRMED BY COMMITTEE ON

---

CHAIR

---

ACTING CITY CLERK



## MINUTES

### EMERGENCY MEETING OF THE EMERGENCY MANAGEMENT COMMITTEE

**October 22, 2020, 1:00 PM  
IN THE COUNCIL CHAMBER**

**PRESENT:** Councillor G-C. Carra, Chair  
Councillor E. Woolley, Vice-Chair (Remote Participation)  
Councillor S. Chu (Remote Participation)  
Councillor J. Davison (Remote Participation)  
Councillor J. Farkas  
Councillor J. Magliocca (Remote Participation)

**ABSENT:** Councillor D. Colley-Urquhart (Personal)

**ALSO PRESENT:** A/General Manager K. Black  
A/General Manager S. Woodgate  
Legislative Coordinator M. A. Cario  
Legislative Advisor J. Palaschuk

1. **CALL TO ORDER**

Councillor Carra called the meeting to order at 1:01 p.m.

2. **OPENING REMARKS**

Councillor Carra provided opening remarks and gave a traditional land acknowledgement.

**ROLL CALL**

Councillor Carra, Councillor Farkas, Councillor Chu, and Councillor Magliocca

Absent for Roll Call: Councillor Woolley, Councillor Colley-Urquhart and Councillor Davison

3. **CONFIRMATION OF AGENDA**

**Moved by** Councillor Farkas

That the Agenda for the 2020 October 22 Regular Meeting of the Emergency Management Committee be confirmed.

For: (4): Councillor Carra, Councillor Chu, Councillor Farkas, and Councillor Magliocca

**MOTION CARRIED**

4. CONFIRMATION OF MINUTES

- 4.1 Minutes of the Regular Meeting of the Emergency Management Committee, 2020 May 06

**Moved by** Councillor Farkas

That the Minutes of the 2020 May 06 Regular Meeting of the Emergency Management Committee be confirmed.

For: (4): Councillor Carra, Councillor Chu, Councillor Farkas, and Councillor Magliocca

**MOTION CARRIED**

5. CONSENT AGENDA

- 5.1 DEFERRALS AND PROCEDURAL REQUESTS

None

- 5.2 BRIEFINGS

None

6. POSTPONED REPORTS

None

7. ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

- 7.1 Status of Emergency Preparedness – A Focus on Critical Infrastructure Risk, EM2020-1192

Councillor Carra thanked Calgary Emergency Management Agency Chief Sampson for his years of service and wished him well in his retirement.

A presentation entitled "Status of Emergency Preparedness – A Focus on Critical Infrastructure Risk" was distributed with respect to Report EM2020-1192.

Councillor Woolley joined the meeting at 1:14 p.m.

Councillor Davison joined the meeting at 1:35 p.m.

**Moved by** Councillor Farkas

That with respect to Report EM2020-1192, the following be approved:

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

For: (6): Councillor Carra, Councillor Woolley, Councillor Chu, Councillor Davison, Councillor Farkas, and Councillor Magliocca

**MOTION CARRIED**

8. ITEMS DIRECTLY TO COMMITTEE



8.1 REFERRED REPORTS

None

8.2 NOTICE(S) OF MOTION

None

9. URGENT BUSINESS

None

10. CONFIDENTIAL ITEMS

10.1 ITEMS FROM OFFICERS, ADMINISTRATION AND COMMITTEES

None

10.2 URGENT BUSINESS

None

11. ADJOURNMENT

The Emergency Management Committee adjourned at 2:24 p.m. by General Consent.

The next Regular Meeting of the Emergency Management Committee is scheduled to be held at the Call of the Chair.

CONFIRMED BY COMMITTEE ON

---

CHAIR

---

ACTING CITY CLERK



# BRIEFING

Page 1 of 1

Item # 5.2.1

**Community Services Briefing to**

**Emergency Management Committee**  
**2021 May 25**

**ISC: UNRESTRICTED**  
**EM2021-0743**

## **Status of Emergency Preparedness 2020**

---

### **PURPOSE OF BRIEFING**

The purpose of this briefing is to provide the 2020 status report on Calgary's emergency preparedness as required by the Emergency Management Bylaw. Attachment 1, The Status of Emergency Preparedness in Calgary, was prepared by the Calgary Emergency Management Agency (CEMA) and summarizes the work of The City of Calgary and its 65 member agencies to address Calgary's high risk hazards. It provides an overview of Calgary's highest natural and human-caused risks, profiles the management of several high risks, summarizes Calgary's response to the COVID-19 pandemic in 2020, and outlines the next steps in disaster risk reduction and management for The City. Emergency Management Committee members have previously been provided with the report via email; this briefing provides the opportunity to have it received for the corporate record.

### **SUPPORTING INFORMATION**

The 2018 Disaster Risk Assessment assessed a total of 65 individual hazards and threats that pose a risk to Calgary. Over the course of the 2019-2022 business cycle, CEMA is providing Emergency Management Committee of Council with an in-depth understanding of Calgary's risk environment and how CEMA and its member agencies work together to implement strategies focused on decreasing disaster risks and increasing the resilience of people, property, and systems.

In the 2020 report, CEMA profiled key factors, trends and mitigation measures for two of Calgary's high risks: critical infrastructure and severe winter weather. The report describes how CEMA established the Calgary Critical Infrastructure Network (CCIN) to increase overall resilience to future events, and indicates that robust event forecasting and response plans are in place for extreme winter weather.

The report discusses the considerable work conducted by The City of Calgary to support the community in preparing, responding and recovering from the COVID-19 pandemic during 2020. From the first quarter of 2020 when the State of Local Emergency was first declared and the Emergency Operations Centre was opened, CEMA was involved both in coordinating corporate business continuity and strategic community response to the pandemic in Calgary, such as chairing the cross-organizational COVID-19 Strike Team.

Next steps for Disaster Risk Management are anticipated to be focused on transitioning CEMA into Calgary Community Standards to enhance service and efficiency, while CEMA will continue to coordinate The City's COVID-19 response and plans for post-COVID-19 recovery. CEMA will also strengthen corporate resilience through business continuity programming and enhance community resilience through emergency preparedness and disaster response and recovery programs.

### **ATTACHMENT**

1. Status of Emergency Preparedness in Calgary 2020 Report



**Calgary**



# THE STATUS OF **EMERGENCY PREPAREDNESS** IN CALGARY

**CALGARY EMERGENCY MANAGEMENT AGENCY**  
NOVEMBER 2020







## MANAGING RISK IN CALGARY

CALGARY IS PRONE TO SEVERE WEATHER EVENTS AS WELL AS HUMAN-CAUSED RISKS ASSOCIATED WITH A LARGE URBAN CENTRE. THESE RISKS POSE SIGNIFICANT CONSEQUENCES TO OUR BUILT, ECONOMIC, NATURAL, SOCIAL, AND GOVERNMENT SYSTEMS. FIVE OF THE TOP TEN COSTLIEST DISASTERS IN CANADIAN HISTORY HAVE DIRECTLY IMPACTED CALGARY AND THE ANNUALIZED COST OF THESE EVENTS SINCE 2010 IS APPROXIMATELY \$600 MILLION (EXCLUDING COVID-19).

The Calgary Emergency Management Agency and its 65 member agencies work together to implement strategies focused on decreasing disaster risks and increasing the resilience of people, property, and systems. The foundation of this process is the Disaster Risk Assessment (DRA), which provides a shared understanding of the risks in Calgary and focuses attention on those with the highest priority. This allows us to take a proactive and whole of society approach to managing risks instead of waiting for disasters to occur and then responding.

This forward-looking approach not only reduces the consequences of disasters in terms of lives and cascading societal impacts, but it also creates substantial cost savings. Numerous studies have shown that disaster mitigation generates significant return on investment.

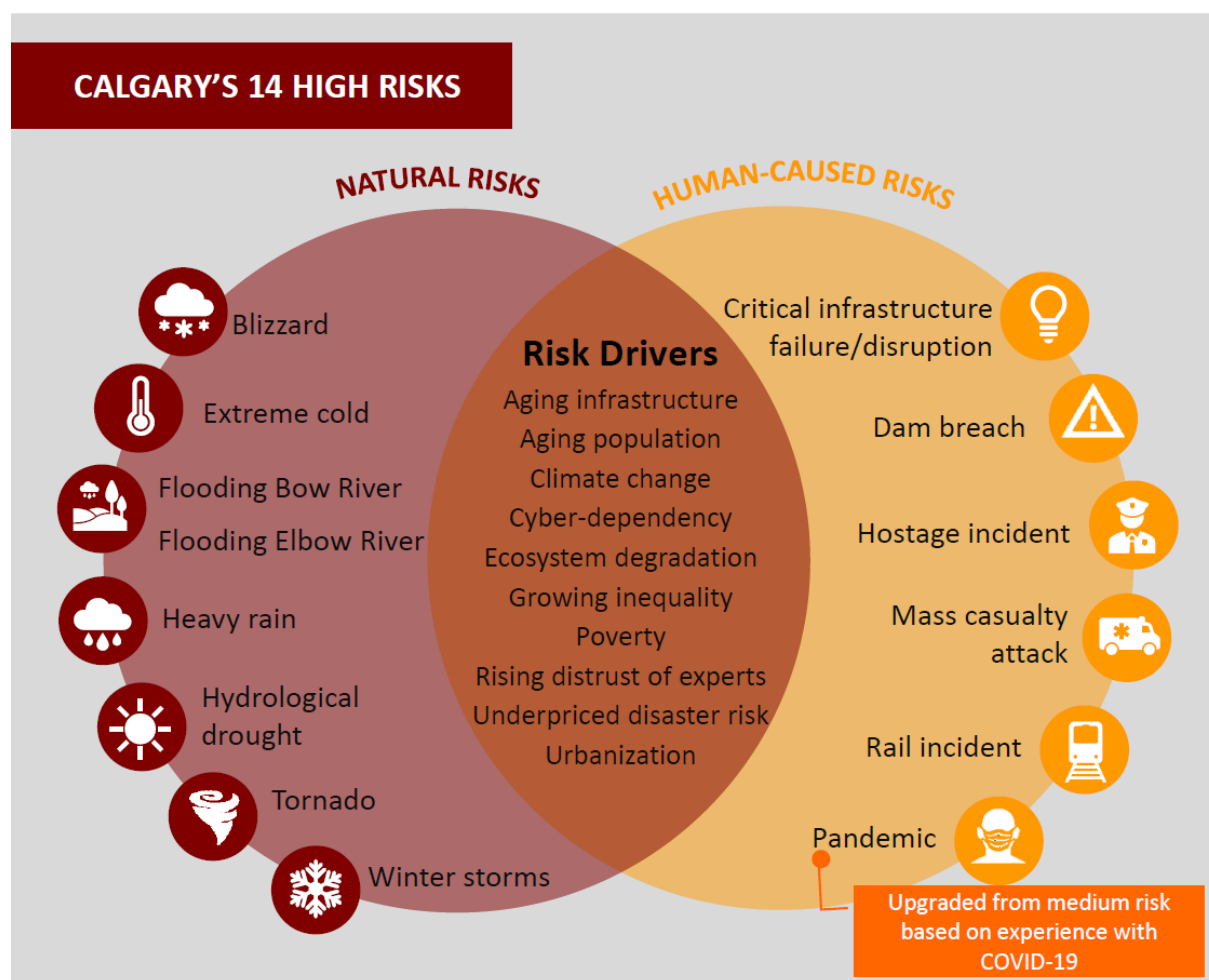
ADVANTAGES OF DISASTER MITIGATION		
	National benefit-cost ratio per peril	
	Federally funded*	Beyond code requirements*
 Riverine flood	7:1	5:1
 Wind	5:1	5:1
 Wildland-urban interface fire	3:1	4:1
 Overall hazard benefit cost-ratio	6:1	4:1

Source: National Institute of Building Sciences Hazard Mitigation Saves: 2017 Interim Report


\*'Federally funded' refers to the cost-benefit analysis of federally funded mitigation projects. 'Beyond code requirements' refers to the cost-benefit analysis of building above and beyond minimum code requirements.

## EMERGENCY PREPAREDNESS IN CALGARY


The 2018 Disaster Risk Assessment assessed a total of 65 individual hazards and threats that pose a risk to Calgary. Over the course of the 2019-2022 business cycle, CEMA is providing City 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.




YEAR	RISKS PRESENTED TO COUNCIL
2019	Drought, mass casualty, hostage incident
2020	CI failure/disruption, winter storms, blizzard, extreme cold
2021 (pending)	Heavy rain, tornado, flooding Bow and Elbow River
2022 (pending)	Dam breach, rail incident



## A FOCUS ON RISK: CRITICAL INFRASTRUCTURE & SEVERE WINTER WEATHER



**CRITICAL INFRASTRUCTURE**



**SEVERE WINTER WEATHER**

*On 2020 October 22, CEMA presented a report on critical infrastructure to the Emergency Management Committee.*

**CONSIDERATIONS**

*CEMA was scheduled to present a severe winter weather report to the Emergency Management Committee. Due to COVID-19, the report was cancelled.*

Critical infrastructure sectors provide vital services, facilities, processes, systems, and governance to citizens every day. This sector is vulnerable to other high-risk hazards.

---

Failures or disruptions in this sector occur as a result of environmental, human-induced, or technological events.

Impact on one critical infrastructure provider or sector has cascading effects to other critical service providers.


---

Critical infrastructure can be both a primary trigger event and secondary consequential event resulting from other hazards. It is directly impacted by upward trends in the frequency, variability, and intensity of environmental hazard events.


---

CEMA established the Calgary Critical Infrastructure Network (CCIN) to increase overall resilience. Consisting of representatives from 16 organizations, CCIN allows for greater inter- and intra-sectorial engagement, increasing the effectiveness of individual, sectoral, and community response to any emergency.


Continued work in increased business continuity planning, cross-sector collaboration, risk awareness, and holistic planning processes will cultivate The City's resilience to future events.




**KEY FACTORS**



**TRENDS**



**MITIGATION**



Severe winter weather includes extreme cold where temperatures reach minus 40°C, blizzards that reduce visibility, and winter storms that produce a combination of significant winter conditions.

---

The most vulnerable to severe winter weather are those experiencing homelessness, seniors, children, people with chronic illnesses, and people working or exercising outdoors.

While each of these types of storms may occur independently, Calgary typically sees two or more occur at the same time.

---

The frequency and intensity of extreme weather events is increasing and is expected to be exacerbated by climate change.

---

Robust event forecasting and early warning systems are in place to notify the public, emergency response personnel, and health providers in advance of extreme winter and cold events.

Warming centres, building codes, community awareness programming, designated snow routes, and emergency response plans are also in place to minimize the impacts of these events.

ISC:UNRESTRICTED

Page 4 of 9



## COVID-19 COORDINATION

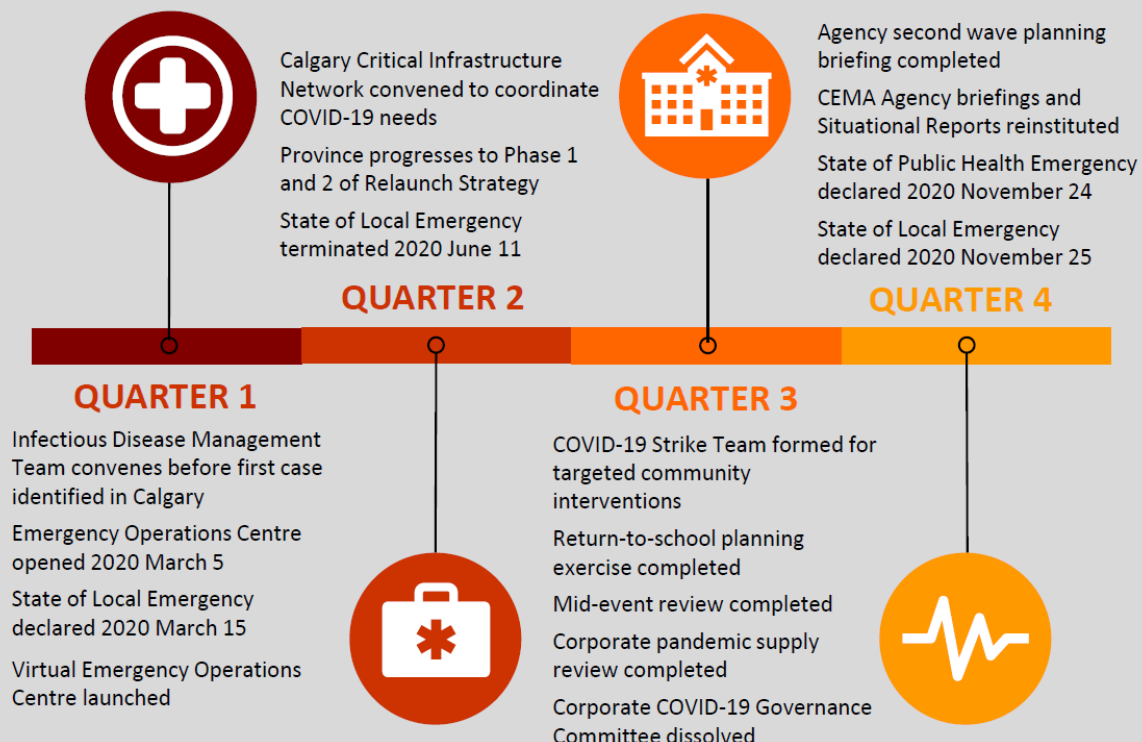
Throughout 2020, CEMA met with the Emergency Management Committee and City Council to discuss COVID-19.

THE CITY'S RESPONSE TO COVID-19 HAS HIGHLIGHTED BOTH THE SUCCESS OF THE CURRENT CORPORATE EMERGENCY MANAGEMENT AND BUSINESS CONTINUITY PROGRAMS AND THE NEED FOR FURTHER SUSTAINED INVESTMENT IN THESE PRACTICES. THE COORDINATION OF COVID-19 RESPONSE INVOLVES COMPLEX RELATIONSHIPS AND CONTINUOUS SYNCHRONIZATION WITH A RANGE OF PROVINCIAL AND FEDERAL AUTHORITIES.

### SUCCESS IN PREPAREDNESS

Preparedness and advanced planning resulted in:

- Business units ready with business continuity plans being enacted to support continuation of City services.
- The Corporate Business Continuity Plan and the Infectious Disease Management Plan providing a governance framework to manage the Corporate response.
- The Infectious Diseases Supply Working Group managing personal protective equipment and other critical resources.
- The Emergency Operations Centre providing a coordinated and strategic community response.
- Immediate, timely management of the pandemic, including consideration for how COVID-19 creates impacts across an interconnected web of social, economic and health issues.



## EMERGENCY PREPAREDNESS IN CALGARY



### FACE COVERINGS BYLAW

On 2020 August 1, The City introduced a temporary Face Coverings Bylaw. It mandates that face coverings be worn on public transit, in public vehicles and in all public indoor spaces, including City of Calgary buildings.



**93%**

Calgarians wearing a face covering after the introduction of the bylaw

**81%**

Calgarians indicating increased consumer confidence after the introduction of the bylaw



Source: City of Calgary 2020 Citizen Perspectives Survey, COVID-19 Snapshot #6

### COVID-19 STRIKE TEAM

The Strike Team is a cross-organizational working group working collaboratively to reduce the impact of a second wave through monitoring and responding to leading indicators.

- Identifies areas of concern
- Examines underlying issues
- Develops solutions
- Mobilizes a targeted response

It is chaired by CEMA and comprised of members of Calgary Zone Medical Officers of Health from Alberta Health Services, the University of

Calgary, The City's Business Sector Task Force, Calgary Neighbourhoods and Customer Service & Communications. Other members are consulted as needed to address special situations and stakeholders.

Objectives of the Strike Team include:

- Identify triggers and what response is required
- Identify sub working groups
- Utilize existing resources through City channels to promote COVID-19 safety

### NEXT STEPS FOR CEMA



Targeted mitigation actions through Strike Team



Ongoing monitoring of COVID developments



Monitor and manage pandemic supplies for The City

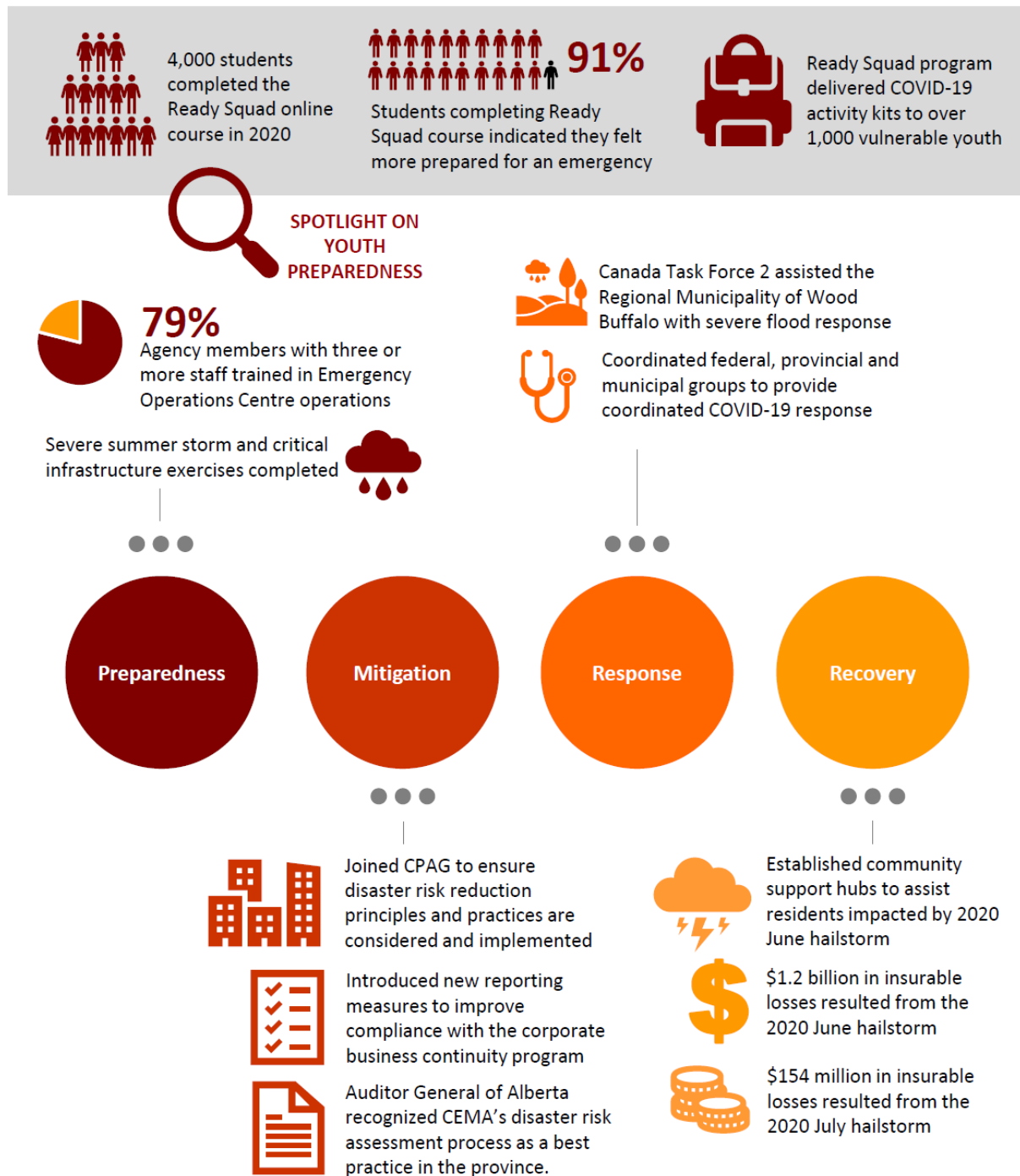


Continue collaboration with Province and partners



Assist with vaccine distribution planning

## STRENGTHENING OUR RESILIENCE



## RISKS IN CALGARY

### CALGARY'S 65 ASSESSED RISKS

#### 14 HIGH RISKS

Catastrophic riverine flooding - Bow River (1:100)  
Catastrophic riverine flooding - Elbow River (1:100)  
Extreme cold  
Major critical infrastructure failure/disruption  
Major dam breach - Bow River  
Major hostage incident  
Major hydrological drought  
Major mass casualty attack  
Major rail incident  
Severe storm - blizzard  
Severe storm - heavy rain  
Severe storm - winter storm  
Tornado  
Severe pandemic

#### 17 LOW RISKS

Flooding ice jam  
Major aircraft incident  
Major cyber attack - technology as target  
Major dam breach - Elbow River  
Major forcemain failure (purple pipe)  
Major forcemain failure (sludge)  
Major freezing precipitation  
Major gas main break  
Major labour action  
Major pipeline incident along AER regulated lines  
Major pipeline incident along Trans-Northern Pipeline to Calgary airport  
Major sanitary failure next to a water body  
Major water contamination - watershed spills  
Major water shortage  
Major earthquake (magnitude 4.0+)  
Moderate pandemic (Canadian Pandemic Influenza Preparedness scenario)  
Severe fog

#### 1 VERY LOW RISK

Treated effluent pump station failure (purple pipe)

#### 33 MEDIUM RISKS

Extreme heat  
Extreme solar storm (Carrington-level event)  
Loss of major transportation corridor  
Major active shooter incident  
Major basement seepage flooding  
Major bomb threat incident  
Major bridge failure/interruption  
Major civil disobedience  
Major cyber attack - technology as instrument  
Major electric power blackout  
Major hazmat incident  
Major incident of data fraud/theft  
Major industrial accident  
Major mass gathering incident  
Major riot  
Major road accident  
Major sanitary forcemain failure (lift station)  
Major security incident at City facility  
Major solar storm (Quebec-level event)  
Major stormwater backup flooding  
Major structure fire  
Major supply chain interruption  
Major telecommunications failure  
Major transit rail incident  
Major water contamination - distribution system  
Major water contamination - widespread forest fire  
Major wildland/urban interface fire  
Poor air quality  
Severe storm - hail  
Severe storm - lightning  
Severe storm - thunderstorms  
Severe storm - wind  
Water distribution infrastructure failure



**6 of the 10** costliest disasters  
in Canadian history have  
directly impacted Calgary

## NEXT STEPS IN DISASTER RISK MANAGEMENT

IN DECEMBER 2020, CEMA WILL MOVE UNDER CALGARY COMMUNITY STANDARDS. THIS REALIGNMENT BRINGS TOGETHER TWO BUSINESS UNITS THAT HAVE RELIED ON BUILDING RELATIONSHIPS TO ENSURE SUCCESSFUL OUTCOMES. AS A RESULT OF THIS CHANGE, WE WILL BE ABLE TO FURTHER FOCUS ON OUR SERVICE TO THE AGENCY.

### TRANSITION TO CCS

Enhance service and supports to Agency members.

Identify opportunities to streamline operations and practices to enhance service efficiency.

### CORPORATE RESILIENCE

Review and implement enhanced corporate business continuity program.

Continue transition of internal education, training, and resources to virtual platform.

Perform COVID-19 after-action review and implement recommendations to enhance resilience to future events.



### COVID RESPONSE

Coordinate Corporate, community and Agency response to COVID-19.

Monitor and target interventions through the COVID-19 Strike Team.

Mitigation planning for COVID-19 escalation as set out in the four-level COVID-19 plan presented to Council.

### COMMUNITY RESILIENCE

Implement recommendations on hail and hazardous materials mitigation.

Continue to offer emergency preparedness education and engagement opportunities virtually.

Focus on post-COVID-19 community recovery and support.





## **Status of Emergency Preparedness Focus on Risk: Severe Summer Weather**

### **RECOMMENDATION:**

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

### **HIGHLIGHTS**

- As identified in The City of Calgary's Disaster Risk Assessment, severe summer weather such as tornadoes, hail, wind, heavy rain, and thunderstorms are among the top 14 potential disaster risks that could impact Calgary, and the risk is increasing as a result of a changing climate. Calgary Emergency Management Agency (CEMA) is committed to providing in-depth assessment and information on Calgary's risk environment and the work being done to address Calgary's high-risk hazards.
- **What does this mean to Calgarians?** Severe summer weather season from May to August is here and if Calgarians are aware of the risks and understand how they can prepare, they will be better able to take actions that protect themselves, their families, and communities to become more resilient.
- **Why does it matter?** Severe summer weather could have serious and negative impacts including critical injuries or loss of life, social impacts, as well as substantial damage to property and critical infrastructure, the environment, and the economy.
- Calgary is located within an area of high risk for tornadic activity and high to medium risk for severe weather in terms of both frequency and severity. Calgary is susceptible to heavy rains, both long-term and short-lived thunderstorms and risks include flooding, hail, wind, and tornadoes. Extreme hail every one to two years occurs within 50km of Calgary and, since 1991, there have been five extremely damaging and costly hail events. Additionally, Alberta averages 12-15 confirmed tornadoes per year.
- Impacts from several destructive and devastating severe summer weather events in or near Calgary include flooding that required evacuations, power outages, damage to homes and tree canopy, blowing debris, injuries, and loss of life.
- CEMA implements strategies focused on reducing risk and increasing resilience to help ensure that The City is prepared for the risks of severe summer weather. These strategies are informed by a Canadian Disaster Risk Reduction Framework and further aligned to a Calgary context by basing all work on a foundational local Disaster Risk Assessment which is conducted every four years and reviewed annually. These measures help ensure Calgarians can stay safe during severe summer weather risks noted above.
- Strategic Alignment to Council's Citizen Priorities: A city of safe and inspiring neighbourhoods.
- A background on risk engagement with the Emergency Management Committee can be found in Attachment 1.

## **Status of Emergency Preparedness Focus on Risk: Severe Summer Weather**

### **DISCUSSION**

Every four years CEMA coordinates city-wide disaster risk assessments to understand Calgary's disaster risk environment, share risk information with Calgarians, and prioritize activities and allocation of resources. In 2018, CEMA conducted a **Disaster Risk Assessment** that assessed a total of 65 individual hazards and threats that pose a risk to Calgary. This foundational document is reviewed annually and is summarized in Attachment 2.

The Disaster Risk Assessment indicates eight of the 14 high risks are weather-related and recent data from the Insurance Bureau of Canada shows:

- Albertans have been hit hard by severe weather events: six of the 10 costliest insured natural catastrophes in Canada have occurred in Alberta.
- In the last five years, Alberta has accounted for about \$6.2 billion in insured losses, which is about 60 per cent of all natural catastrophic insured losses in Canada.
- Between 1983 and 2008, property and casualty insurers paid out an average of about \$425 million a year (in today's dollars) on weather-related losses across Canada. Between 2009 and 2020, insurers paid out an average of \$1.9 billion annually.
- The Calgary 2020 June hailstorm and the 2013 flood event were the costliest hailstorm and flood event in Canada's history with the hailstorm reporting insurable losses at \$1.3 billion and the flood at \$1.6 billion.

Attachment 3 provides a timeline of recent severe summer weather events in or around Calgary and their resulting impacts.

### **Preparing The City for Severe Summer Weather**

The **Municipal Emergency Plan** provides an overarching plan to guide response to any type of emergency and CEMA has developed individual incident-specific plans like the **Spring and Summer Severe Storm Incident Response Plan** and **Tornado Incident Response Plan** to address aspects of each hazard that require special considerations and responses.

The City of Calgary implements a combination of both structural (hard infrastructure and physical construction) and non-structural (plans, policies, training, etc.) mitigation in order to reduce the risk of severe summer storms that include:

- A tornado-focused exercise completed in 2020 and in 2021 April, an exercise on a flood scenario was used to drive exercise processes and prepare the agency for the spring flood season;
- Maintaining direct access to meteorologists at Environment & Climate Change Canada as an Agency member;
- Use of a wind sensor network to monitor gusts across the city which trigger protocols for construction sites;
- Agreements in place to utilize tallest buildings in downtown Calgary when visual storm awareness is needed;
- Adoption of building codes that meet national and provincial standards for wind;
- Ongoing investment in enhancement stormwater management infrastructure through the Community Drainage Improvement program and Local Drainage Improvement programs;
- Review and application of Stormwater Management Design Guidelines to drainage systems for new communities including research and assessment of potential changes with a shifting climate; and,



### **Status of Emergency Preparedness Focus on Risk: Severe Summer Weather**

- CEMA and Facilities Management will be rolling out a Best Available Refuge Area program that will identify the best places to seek refuge in a City building during a tornado or high wind event. This program will also be leveraged as a resource for external organizations to utilize in their emergency planning programs.

#### **Preparing Calgarians for Severe Summer Weather**

CEMA has education programs and services in place that are designed to prepare and offer support to Calgarians in the event of severe summer weather.

- Public awareness **emergency preparedness campaigns** are ongoing throughout the year with Agency members and partners, including participation in national Emergency Preparedness Week. In 2021 May, CEMA focused on spring and summer hazard topics.
- Community outreach through the **Ready Calgary** Emergency Preparedness Program focuses on increasing the capacity of citizens, communities, businesses, and youth to prepare for emergencies caused by severe summer weather by raising awareness, increasing knowledge, and developing skills.
- The **Calgary Disaster Risk Explorer** online resource offers the opportunity to learn about the impacts of Calgary's greatest risks including severe summer weather and promote behaviour changes to develop a more resilient community.
- The **Emergency Social Services** is an internal City-wide program that provides for the immediate physical and emotional needs of evacuated citizens during an emergency, and the **Critical Service Provider Network** connects with community organizations and partners to leverage social and other specialized supports for victims of disasters.
- Environment and Climate Change Canada provides **Weather Alerts and Warnings** to keep Calgarians aware of imminent severe weather in the form of public weather Watches, Warnings, and other alerts through their website and app, and in severe cases through the Alberta Emergency Alert (AEA) system. For Critical AEA alerts, such as a Tornado Warning, the alert can be pushed to all local radio and TV stations, as well as to all mobile phones. Environment and Climate Change Canada provides advance forecasting and weather information to CEMA to help prepare for potentially hazardous events.

### **STAKEHOLDER ENGAGEMENT AND COMMUNICATION**

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

CEMA regularly engages its Agency members in education, training, and exercise programming and relies on members to inform the development of a range of response plans and share information outward with Calgarians through their unique communication channels.

## **Status of Emergency Preparedness Focus on Risk: Severe Summer Weather**

### **IMPLICATIONS**

#### **Social**

CEMA's work 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.

#### **Environmental**

CEMA's work aligns with the Climate Resilience Strategy, section 6.2 Climate Adaptation Action Plan, under *Governance: Pro-active Leadership* - preparing for our climate-altered future through collaborative decision making focussed on severe weather response and recovery management. Reducing disaster risk for hazards is a critical component of adaptation planning which focusses on assessing risk, reducing vulnerability, increasing capacity, mitigating potential damage, and enhancing resilience to achieve long-term sustainability goals.

#### **Economic**

CEMA's work addresses *Result 6* within the Economic Resilience Strategy. *Create a more Resilient Economy*, as mitigation efforts will result in significant savings for future shocks and stresses.

#### **Service and Financial Implications**

*Existing operating funding – base*

Planning and responding to tornadoes and severe spring and summer storms resides in the current CEMA business plan and therefore does not require additional funding.

### **RISK**

Severe summer weather poses significant risks for The City and could contribute to four of 17 corporate risks: business continuity, environmental, health and safety, and infrastructure management risk. 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, indicating that this type of disaster risk requires specialized attention and management. This report outlines and highlights the planning and preparation completed as well as the mitigation strategies should the risk become reality.

### **ATTACHMENTS**

1. Emergency Management Committee Risk Engagement Background
2. CEMA Disaster Risk Assessment Summary
3. Historical Timeline of Severe Summer Weather

#### Department Circulation

General Manager/Director	Department	Approve/Consult/Inform
Michael Thompson, General Manager	Utilities and Environmental Protection	Inform

# Emergency Management Committee Risk Engagement Background

The Emergency Management Bylaw requires the Calgary Emergency Management Agency (CEMA) to provide an annual report (Status of Emergency Preparedness Report) to Emergency Management Committee.

In addition to the annual report, CEMA provides two reports with panel presentations each year to allow meaningful conversations and ensure Emergency Management Committee and Calgarians are well-informed on actions taken to address high risks for Calgary.

Reports are received by Emergency Management Committee for the corporate record and inform the annual Status of Emergency Preparedness Report.

## Bylaws, Regulations, Council Policies

---

### **Emergency Management Bylaw 25M2002**

The municipal bylaw that guides CEMA.

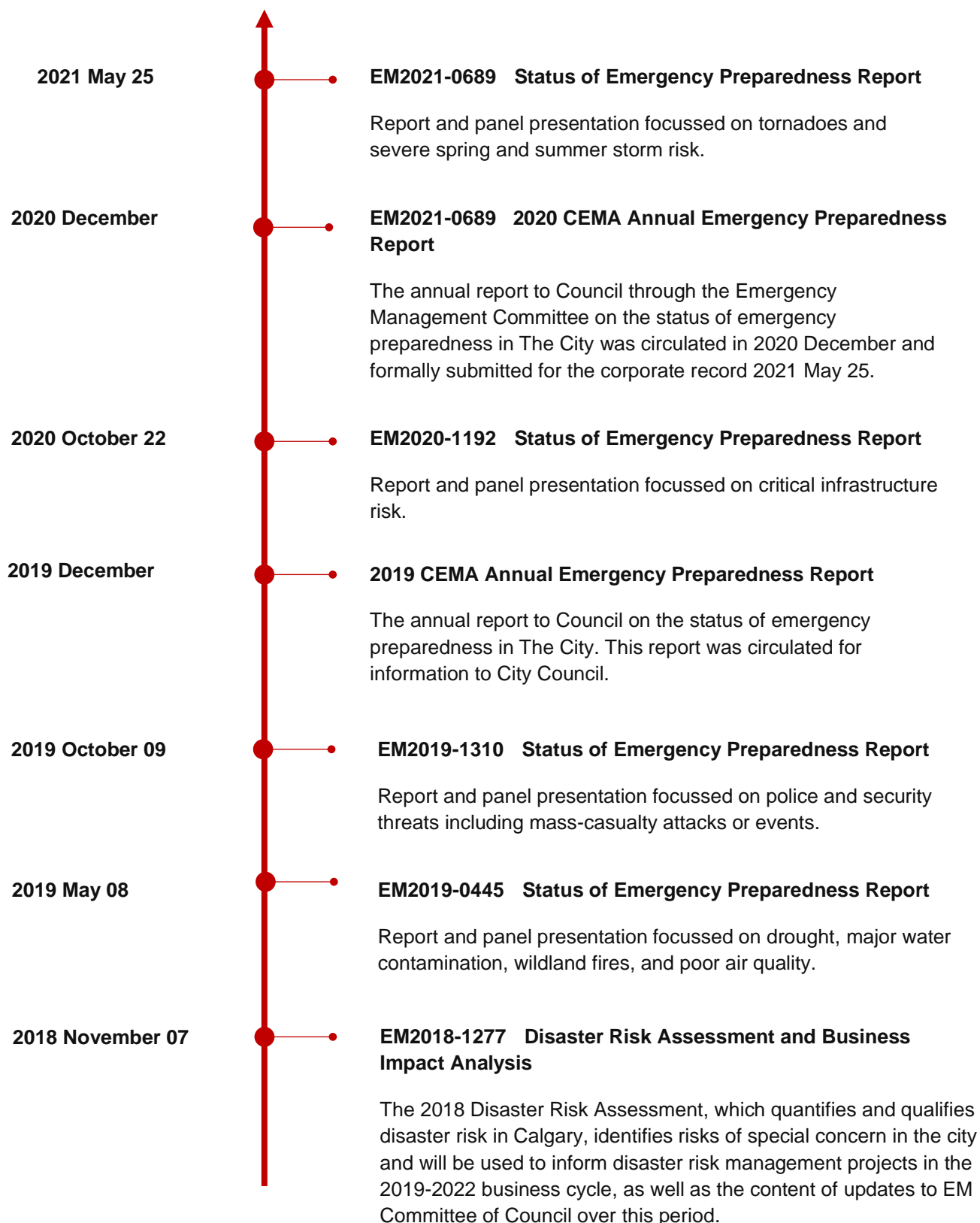
### **Province of Alberta Emergency Management Act**

Provincial legislation that sets the requirements for Calgary to have an Emergency Management Committee and Agency.

### **Local Authority Emergency Management Regulation**

Provincial Regulation under the Emergency Management Act that provides direction on emergency management roles and responsibilities and what is required of municipalities to plan and prepare for the safety of their community.

## Timeline of Emergency Preparedness Reporting and Presentations



# CEMA Disaster Risk Assessment Summary

## Overview

The Disaster Risk Assessment is a foundational activity that informs development of key strategies, policies, and programming focused on reducing disaster risk in order to increase societal resilience. The methodology used has been developed based on the principles, framework, and process established within ISO 31000:2009 Risk Management.

## Roles and Responsibilities

The Calgary Emergency Management Agency (CEMA) coordinates the process to assess disaster risk, manages the Disaster Risk Register, and reports, in various forms, on disaster risk on behalf of The City of Calgary. Subject Matter Experts (SME) assess, manage, and treat risks associated to specific hazards and threats under their area of responsibility.

## DRA Process

CEMA utilizes a three-step assessment process (Figure 1) to identify, analyze, and evaluate risk. The output from this process is a comprehensive Disaster Risk Register and Disaster Risk Report that can assist key decision-makers research, evaluate, resource, and monitor risk treatment options. CEMA conducts the risk assessment every four years in alignment with the municipal budget cycle and undertakes annual monitoring in order to account for any significant material changes that may alter the assessment of risk year-over-year.

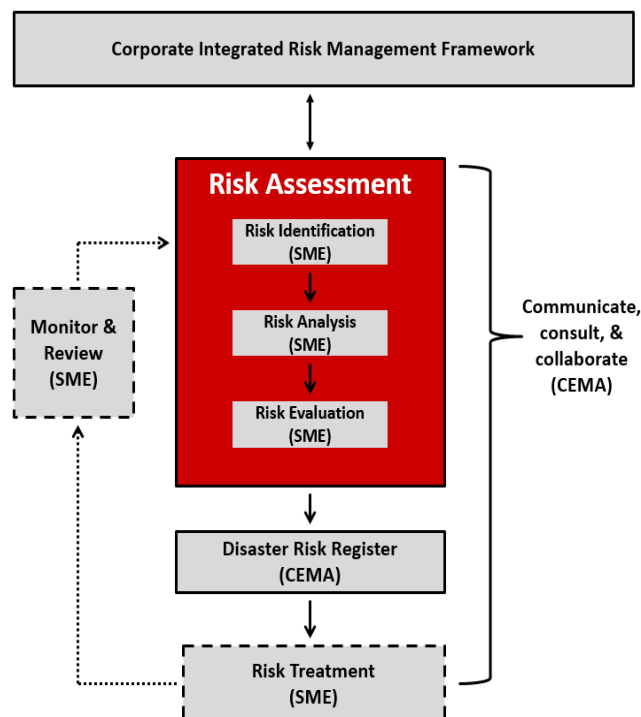


Figure 1: CEMA Disaster Risk Assessment Process

## Disaster Risk Assessment Summary 2020

Risk Level	Hazard or Threat	Risk Level	Hazard or Threat
High	Catastrophic Riverine Flooding Bow River (> =1:100)	Medium	Major Transit Rail Incident
High	Catastrophic Riverine Flooding Elbow River (> =1:100)	Medium	Major Water Contamination - Distribution system
High	Extreme Cold	Medium	Major Water Contamination - Widespread Forest Fires
High	Major Critical Infrastructure Failure or Disruption	Medium	Major Wildland / Urban Interface Fire
High	Major Dam Breach - Bow River	Medium	Poor Air Quality
High	Major Hostage Incident	Medium	Severe Storm – Hail
High	Major Hydrological Drought	Medium	Severe Storm – Lightning
High	Major Mass Casualty Attack	Medium	Severe Storm - Thunderstorms
High	Major Rail Incident	Medium	Severe Storms – Wind
High	Severe Storm – Blizzard	Medium	Water Distribution Infrastructure Failure
High	Severe Storm - Heavy Rain	Low	Flooding Ice Jam
High	Severe Pandemic (CPIP <a href="#">scenario</a> )*	Low	Major Aircraft Incident
High	Severe Storm - Winter Storms	Low	Major Cyber Attack - Technology as Target
High	Tornado	Low	Major Dam Breach - Elbow River
Medium	Extreme Heat	Low	Major <del>Forcemain</del> Failure (purple pipe)
Medium	Extreme Solar Storm (Carrington-level event)	Low	Major <del>Forcemain</del> Failure (sludge)
Medium	Loss of major transportation corridor	Low	Major Freezing Precipitation
Medium	Major Active shooter incident	Low	Major Gas Main Break
Medium	Major Basement Seepage Flooding	Low	Major Labour Action
Medium	Major Bomb Threat incident	Low	Major Pipeline Incident along AER regulated lines
Medium	Major Bridge Failure/Interruption	Low	Major Pipeline incident along the TNPL to Calgary Airport
Medium	Major Civil Disobedience	Low	Major Sanitary Failure Next to a Water Body
Medium	Major Cyber Attack - Technology as Instrument	Low	Major Water Contamination - Watershed Spills
Medium	Major Electric Power Blackout	Low	Major Water Shortage
Medium	Major Hazmat Incident	Low	Moderate Earthquake (Magnitude 4.0+)
Medium	Major Incident of Data Fraud/Theft	Low	Moderate Pandemic (CPIP scenario)
Medium	Major Industrial Accident	Low	Severe Fog
Medium	Major Mass Gathering Incident	Very Low	Treated Effluent Pump <a href="#">station</a> Failure (purple pipe)
Medium	Major Riot		
Medium	Major Road Accident		
Medium	Major Sanitary <del>Forcemain</del> Failure (Lift Station)		
Medium	Major Security Incident at City Facility		
Medium	Major Solar Storm (Quebec-level event)		
Medium	Major Stormwater Backup Flooding		
Medium	Major Structure Fire		
Medium	Major Supply Chain Interruption		
Medium	Major Telecommunications failure		

\*Severe pandemic has been identified as high risk in the 2020 update of the DRA.

# Historical Timeline of Severe Summer Weather

A capture of past severe summer weather events and impacts that were utilized when completing the Calgary Disaster Risk Assessment.

