



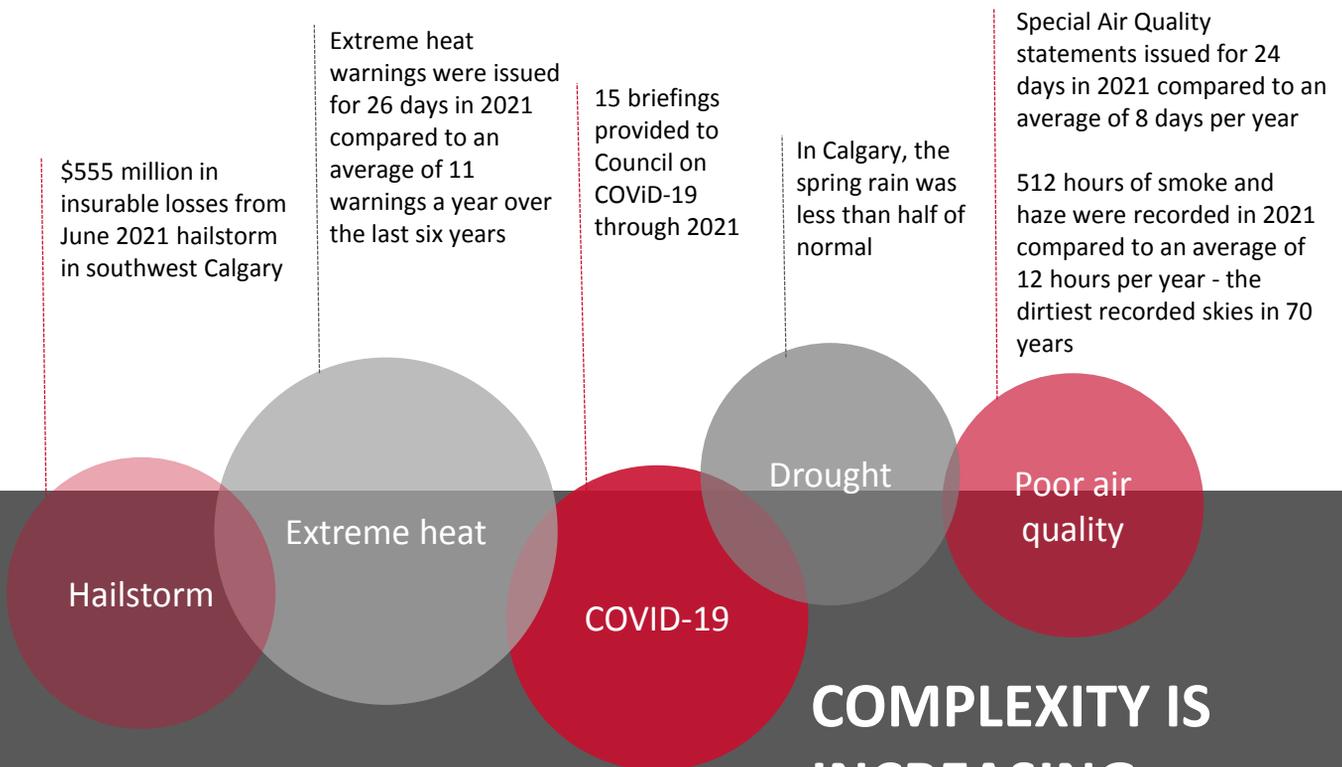
**THE 2021 STATUS OF  
EMERGENCY  
PREPAREDNESS  
IN CALGARY**

**CALGARY EMERGENCY MANAGEMENT AGENCY  
JANUARY 2022**

# SAFER NEIGHBOURHOODS

SAFER, MORE RESILIENT NEIGHBOURHOODS. The Calgary Emergency Management Agency (CEMA) focuses its work on the core pillars of emergency management: prevention, mitigation, preparedness, response, and recovery. This work directly contributes to two Council priorities: Safe and Inspiring Neighbourhoods and A Healthy and Green City. Through these efforts, CEMA also helps to foster safe and resilient communities.

CEMA and its 60+ 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 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.



## COMPLEXITY IS INCREASING

Summer 2021 saw the convergence of five separate risks that stretched the limits of CEMA's capacity. As a result of its extensive pre-planning, collaborative processes and preparedness activities, CEMA was able to successfully manage the short-term acute events in concert with our Agency members.

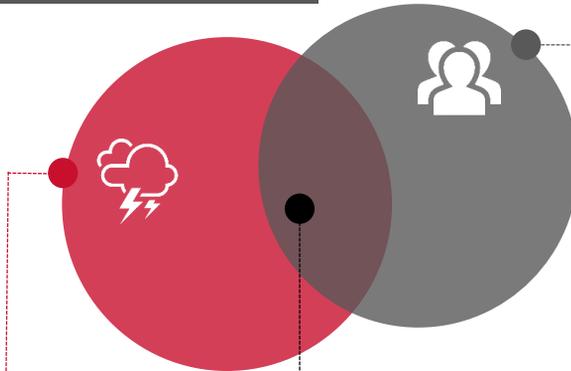
# MANAGING RISK

**UNDERSTANDING CALGARY'S RISKS.** 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 disaster risk environment and the work The City of Calgary and our Agency members are doing to address Calgary's high-risk hazards. This Assessment also informs our planning and operations, as well as the prevention and mitigation work of our Agency members.

## CALGARY'S HIGH RISKS

### Natural Risks

- Blizzard
- Extreme cold
- Flooding Bow River
- Flooding Elbow River
- Heavy rain
- Hydrological drought
- Tornado
- Winter storms



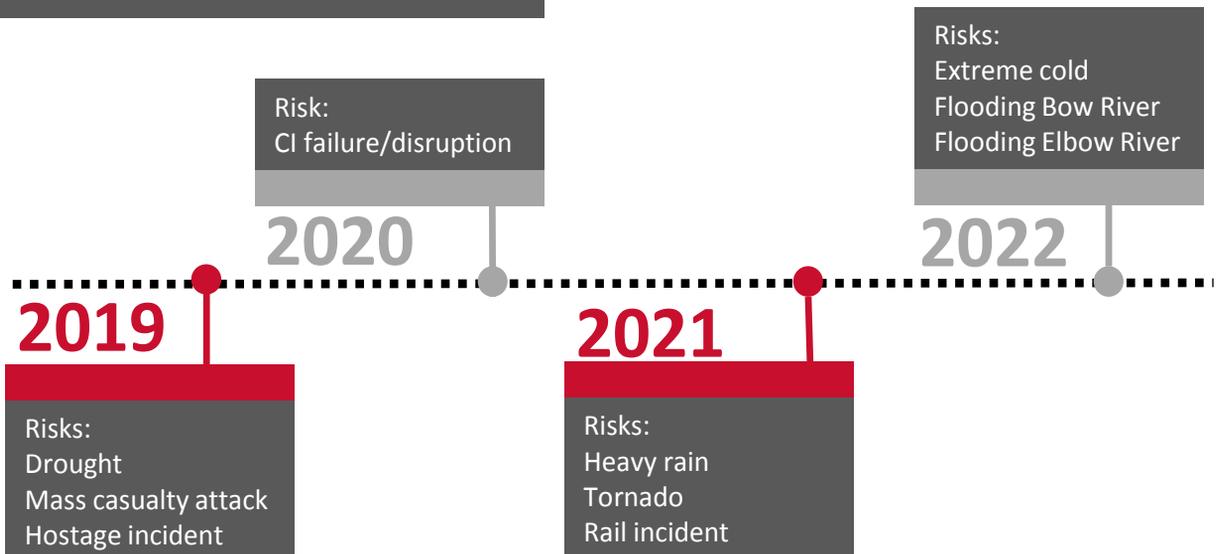
### Human-Caused Risks

- Critical infrastructure failure/disruption
- Dam breach - Bow River
- Dam breach - Elbow River
- Hostage incident
- Mass casualty attack
- Major rail incident
- Severe pandemic

### Risk Drivers

- Aging infrastructure
- Climate change
- Ecosystem degradation
- Poverty
- Increased exposure to hazards
- Aging population
- System interdependency
- Growing inequality
- Rising distrust of experts
- Urbanization

## PRESENTATIONS TO COUNCIL



## CALGARY'S RISK LANDSCAPE

### MEDIUM RISKS

- Extreme heat
- Extreme solar storm
- 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
- 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 forecmain failure (lift station)
- Poor air quality
- Severe storm – hail
- Severe storm – lightning
- Severe storm – thunderstorms
- Severe storm – wind
- Major solar storm
- Major stormwater backup flooding
- Major structure fire
- Major security incident at City facility
- 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
- Water distribution infrastructure failure

### LOW RISKS

- Flooding ice jam
- Major aircraft incident
- Major cyber attack – technology as target
- 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
- Severe fog

### VERY LOW RISK

- Treated effluent pump station failure (purple pipe)

# RISKS IN PROFILE

## SEVERE SUMMER WEATHER

On 2021 May 25, CEMA presented a report on severe summer weather to the Emergency Management Committee

Severe summer storms can include heavy rain, flooding, hail, wind, and tornadoes.

## MAJOR RAIL INCIDENT

On 2021 December 03, CEMA presented a report on major rail incidents to the Emergency Management Committee.

Major rail incidents include collisions, derailments, fire, explosion, release of dangerous goods, and rail security incidents.



### KEY FACTORS

Calgary is located in an area of high risk for tornadic activity and severe storms. Tornadoes are rare but potentially catastrophic events. Severe summer storms occur every year and hail is one of the costliest hazards in terms of insured losses. The impacts of these events can include evacuations, power outages, damage to property, blowing debris, injuries, loss of life, service disruptions, and significant insurable losses.

Calgary is the hub of several major rail networks and is vulnerable to a rail incident due to major rail lines spread throughout the city. Dangerous goods carried through Calgary can be toxic, corrosive, flammable, or explosive. Impacts could include fatalities, injuries, building damage, evacuations, service delays, business closures, and traffic rerouting. Rail supports economic activity and delays to the rail transport system due to a major incident could result in significant economic impacts.



### TRENDS

Every one to two years, extreme hailstorms occur within 50km of Calgary and, since 1991, there have been five extremely damaging and costly hail events. Additionally, Alberta averages 12 to 15 confirmed tornadoes per year.

Between 2010 and 2019, there was a steady increase in the average length of trains, total tonnage of goods shipped, and total number of carloads carrying dangerous goods. The shipment of fuel oil and crude oil moved by rail tripled from 2011 to 2019.



### MITIGATION

In 2021, CEMA developed a *Spring and Summer Severe Storm Incident Response Plan* and *Tornado Incident Response Plan* in concert with Agency members responsible for response to the impacts of storm events. The City developed a Best Available Refuge Area program to direct staff and citizens to safe spaces in City facilities during a tornado.

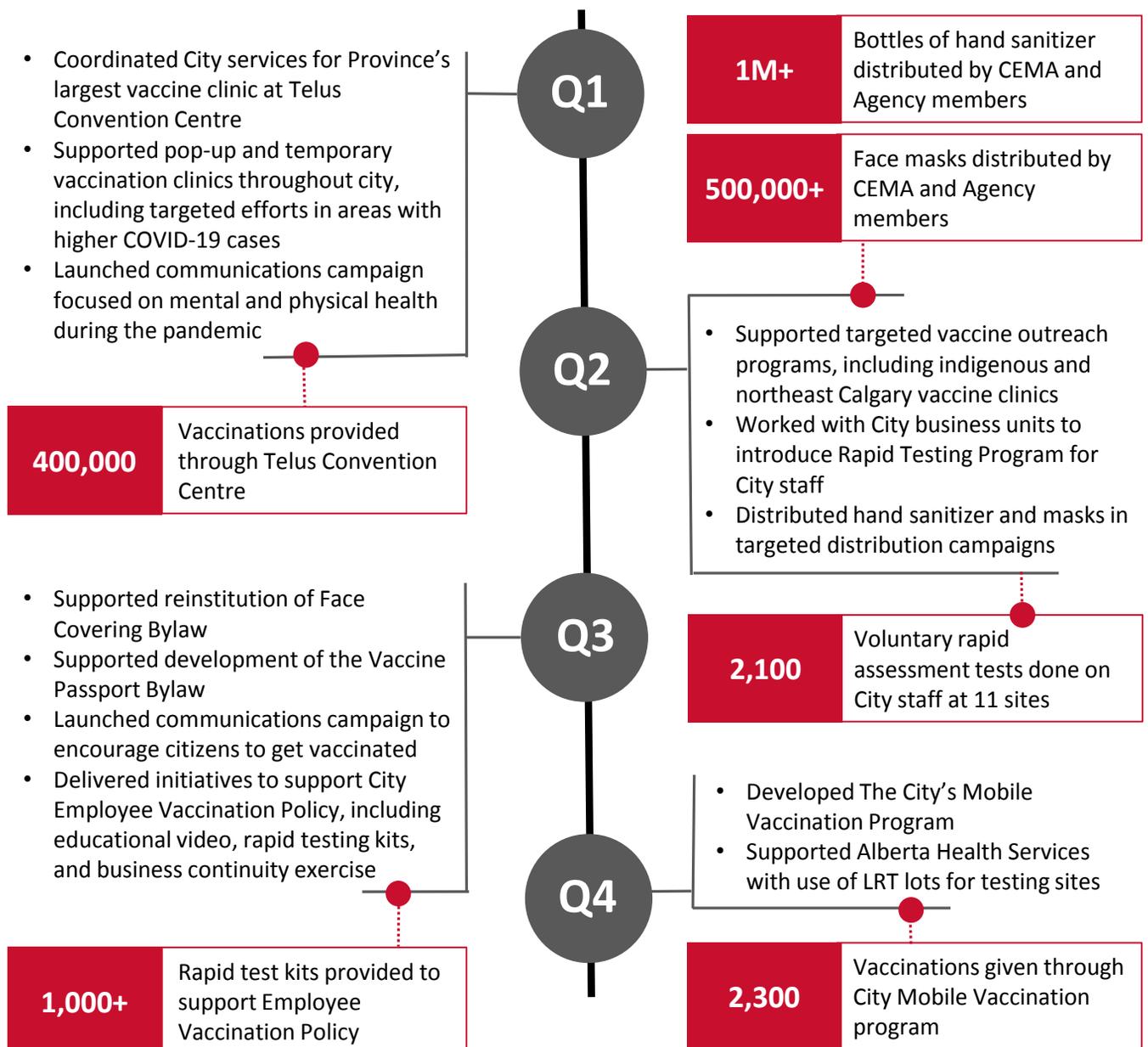
CEMA partnerships with Canadian National Railway and Canadian Pacific Railway allow for collaboration in public education, training, exercises, and emergency response planning. The *Development in Rail Corridor Policy* guides development next to freight rail corridors by proactively managing some of the risk, specifically physical impact and noise.

# COVID-19 COORDINATION

Since COVID took hold in March 2020, CEMA has continued to support our Agency members through a myriad of challenges. Leveraging the fundamentals skills in emergency management we brought Agency members together to

collaborate and solve challenging problems using non-traditional resources. CEMA and the Agency provided additional emerging services where our involvement in the service delivery would have a direct and positive impact on the citizens.

## KEY COVID-19 INITIATIVES



Samples from The City's 2021 communication campaigns



## STRENGTH IN COLLABORATION

**ENGAGING THE EXPERTS.** Throughout the pandemic response, CEMA has connected with subject matter experts to help guide policy and program decisions. Through the University of Calgary Advisory Committee with the O'Brien Institute of Public Health, CEMA has engaged academics and researchers to help The City and Council better understand a range of health and social issues.

The COVID-19 Strike Team is a cross-organizational working group collaborating to reduce the impact of COVID-19 through monitoring and responding to leading indicators. Representatives from CEMA, health, academic, business, and communications arenas regularly connect to identify when new, modified, and targeted health and communication approaches are needed.

## PROTECTING CITY SERVICES

**ENSURING CONTINUITY OF ESSENTIAL SERVICES.** CEMA utilized its Business Continuity Coordinator Network and Calgary Critical Infrastructure Network to prioritize services, distribute guidance, and solicit impact information to successfully manage COVID-19 within Calgary's essential and critical systems.

These groups were developed before COVID-19 to ensure a common understanding of critical services and establish collaborative networks necessary to respond to complex

**CONNECTING AGENCY MEMBERS.** Supporting our Agency members in managing their services through the challenges and changes brought by COVID-19 has been a key component of CEMA's work. Throughout the various waves, we have provided opportunities for members to learn what others are doing and find help in resolving issues through our regular check-ins. We offered specialized support in getting questions answered through our Situational Awareness Officer. Using dashboards and advisory reports, we have kept our members informed regularly of the status of City operations and changes they need to be aware of for their operations.

disasters . This work contributed to the resiliency of our critical services during the pandemic and will continue to do so moving forward.

CEMA hosted an exercise for the Corporation to stress test workforce business continuity strategies, identify common concerns, and pursue common mitigation strategies. This contributed to the new rapid testing program along with the reintroduction of the Agency dashboard to keep a pulse on critical services.



## IN OUR COMMUNITIES

**BOOSTING VACCINE UPTAKE.** The City funded a mobile vaccine outreach initiative that began in September 2021. Through 311, communities were able to request a mobile unit for their neighbourhood or event. Units were also stationed at high-traffic areas and events to help boost vaccine uptake and improve accessibility to vaccinations.

**MEETING COMMUNITY NEEDS.** CEMA participated in a number of community tables, including the Calgary East Zone Newcomers Collaborative, to better understand specific needs and support information sharing. Through these ongoing conversations, CEMA was able to connect communities with the resources they needed, including temporary vaccination sites, hand sanitizer, and masks.

## COVID-19 RESPONSE IN 2022

1

### VACCINATIONS

Maintain support for vaccine initiatives, especially for children and youth

2

### COLLABORATION

Continued collaboration with health partners

3

### MONITORING

Monitor and plan for potential impacts of an evolving pandemic

4

### TRANSITION

Support transition into new normal and shift to other emergency management priorities

# 2021 HIGHLIGHTS



**67%**

Agency members with three or more staff trained in Emergency Operations Centre operations

## PREPAREDNESS

Percentage of citizens completing individual, family and community courses through Ready Calgary who feel more prepared for emergencies

**92%**



CEMA designated as risk reduction expert on the Municipal Development Plan and the Calgary Transportation Plan Core Indicator Review



**97%**

Percentage of City business units compliant with Corporate Business Continuity Program



Developed spring and summer severe storm, tornado and extreme heat plans to guide efficient, consistent responses to these events

## MITIGATION

Worked with Insurance Bureau of Canada to develop online multilingual hailstorm awareness materials and media campaign



Advanced the ability of City business units to maintain essential service delivery after emergencies through new courses, materials and exercises



Canada Task Force 2 assisted the Yukon with its severe flood response

## RESPONSE

Coordinated City services from Emergency Operations Centre to monitor the municipal election



Conducted two full-scale exercises testing The City's river flooding and rail incident response

**11,000**

Gratitude cards made by over 300 students for front line workers supporting Calgary communities through COVID-19

## RECOVERY

Achieved target of building capacity to provide 0.5% of the population with basic needs immediately following an emergency



# THE YEAR AHEAD



## **RISK REVIEW AND UPDATE**

In 2022, we will complete a full review of the Disaster Risk Assessment and release a Disaster Risk Report with updated risks for Calgary. We will continue to share with City Council a more in-depth understanding of Calgary hazards through risk panels focused on flooding and extreme cold.



## **ENHANCE RESPONSE CAPABILITY**

We will update our operating processes for the Emergency Operations Centre to improve clarity of roles, responsibilities and information flow during an emergency. We will continue to prepare for Calgary's risks through new incident response plans that integrate the actions of all our Agency members.



## **COVID-19 RECOVERY**

We will continue to monitor and respond to the changing pandemic. Over time, we will transition our COVID-19 response to supporting community partners to help citizens and businesses recover from pandemic impacts. Internally, we will update the Infectious Disease Management Plan and complete an after-action report on CEMA's response to support continuous improvement to pandemic responses.



## **STRENGTHEN CITY AND CORPORATION**

To ensure continuity of essential services during emergencies, we will update the Corporate Business Continuity Program and Calgary Critical Infrastructure Network. Our training programs will move to an online environment. We will also refresh our ReadySquad e-course, which educates youth on disaster risks and preparedness, to add home-based and teacher resources.



## **CORPORATE REORGANIZATION**

We will revise our concept of operations to align with the corporate reorganization. This includes updating our Agency membership, plans, policies, and procedures to reflect the changes. It will also require onboarding and training new members for their roles in the Municipal Emergency Plan and Emergency Operations Centre.