

**CALGARY EMERGENCY MANAGEMENT AGENCY**

# THE STATUS OF EMERGENCY PREPAREDNESS IN CALGARY



Prevent



Mitigate



Prepare



Respond



Recover

## WHO ARE WE?

# CALGARY EMERGENCY MANAGEMENT AGENCY

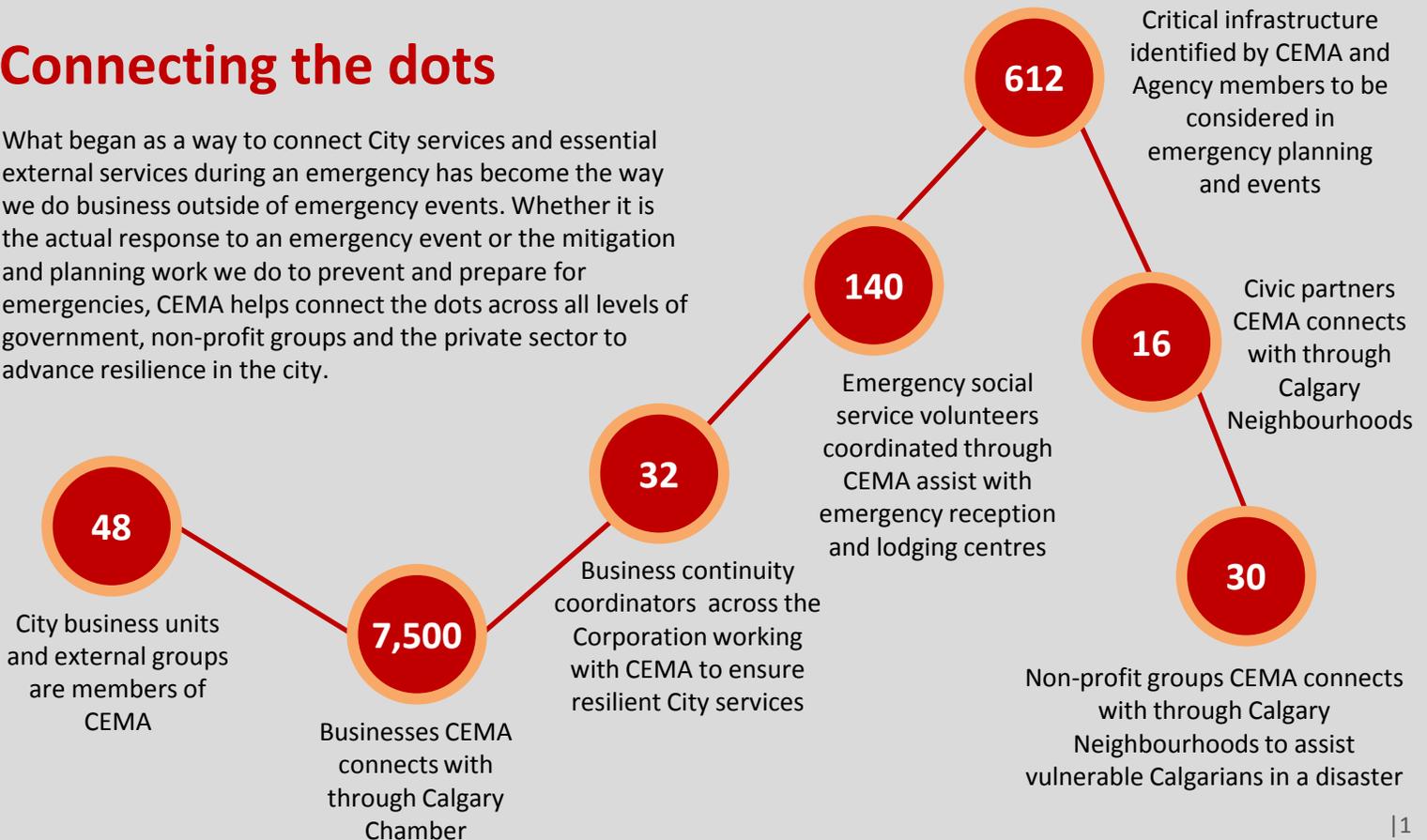
Who we are and what we do to ensure a safe, prepared and resilient city.

The Calgary Emergency Management Agency (CEMA) works with our City of Calgary colleagues, government agencies, businesses, non-profit groups, first responders and citizens to promote and strengthen emergency preparedness, resilience and the coordinated response to, and recovery from, major emergencies and disasters in Calgary.

Safe, adaptable and capable communities, families and individuals are at the heart of our city's ability to weather any emergency. We pull together the people, knowledge and resources necessary to prepare for any emergency event and lead a team of expert members and partners in a seamless response when an emergency strikes. Through any adversity, our goal is to maintain essential city services, minimize the impact on and quickly return citizens to their normal lives.

## Connecting the dots

What began as a way to connect City services and essential external services during an emergency has become the way we do business outside of emergency events. Whether it is the actual response to an emergency event or the mitigation and planning work we do to prevent and prepare for emergencies, CEMA helps connect the dots across all levels of government, non-profit groups and the private sector to advance resilience in the city.

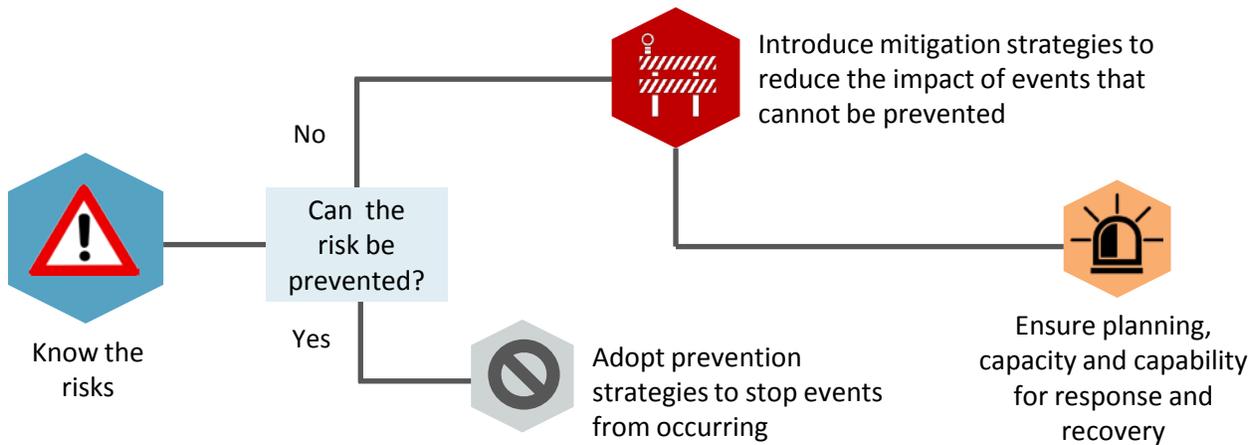


# WHAT IS PREPAREDNESS?

# THE SPECTRUM OF PREVENTION TO RECOVERY

Defining what preparedness means for CEMA, The City of Calgary and Calgarians.

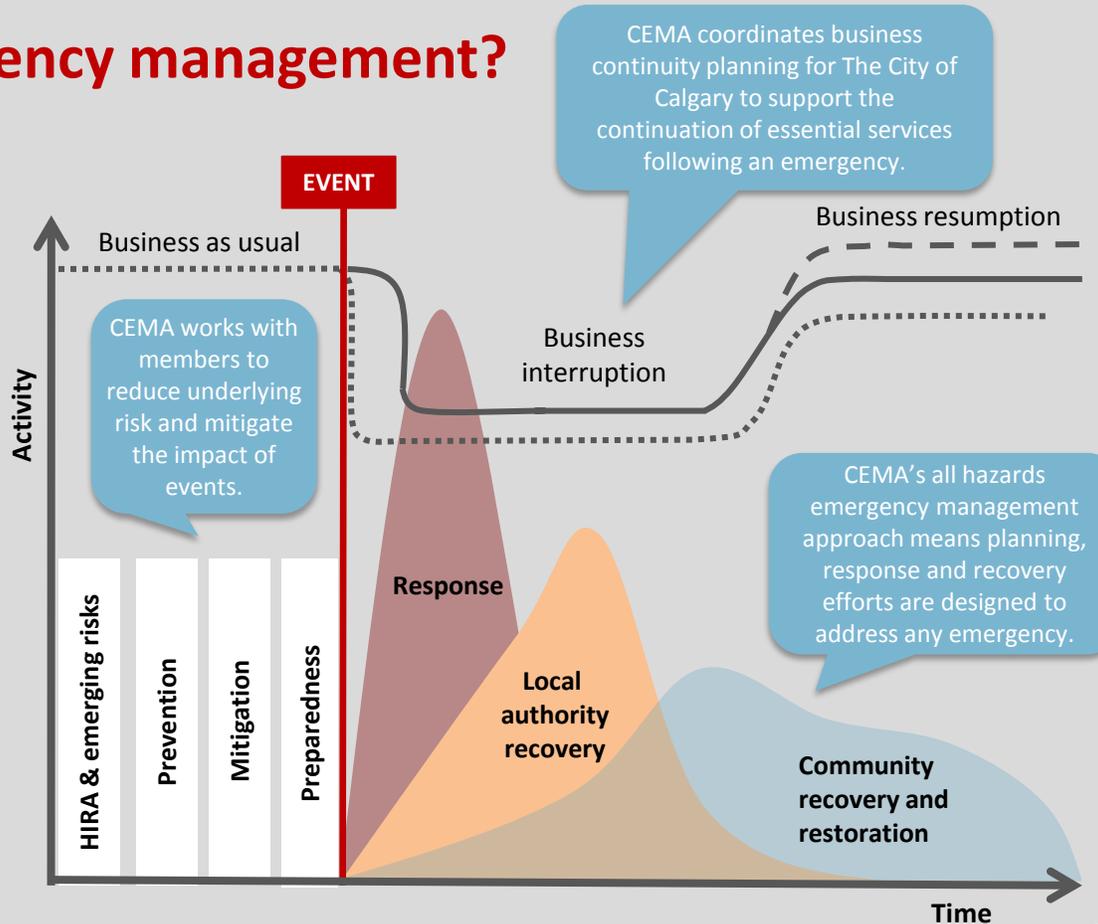
Preparedness is not the responsibility of any single organization. Instead, it is the result of the combined efforts of activities at the individual, family, business, community, city, municipal, provincial and federal level.



## What is emergency management?

An emergency is an urgent event that calls for immediate action to mitigate risk to life, property or the environment. Emergency management addresses a full spectrum of activities – prevention, mitigation, preparedness, response and recovery – that contribute to reducing risks, limiting the impact of events, ensuring timely response and supporting communities in recovering as quickly as possible after an event.

CEMA’s role is to ensure a balanced approach to all five phases to ensure programs, training and capacity are available to support each area.



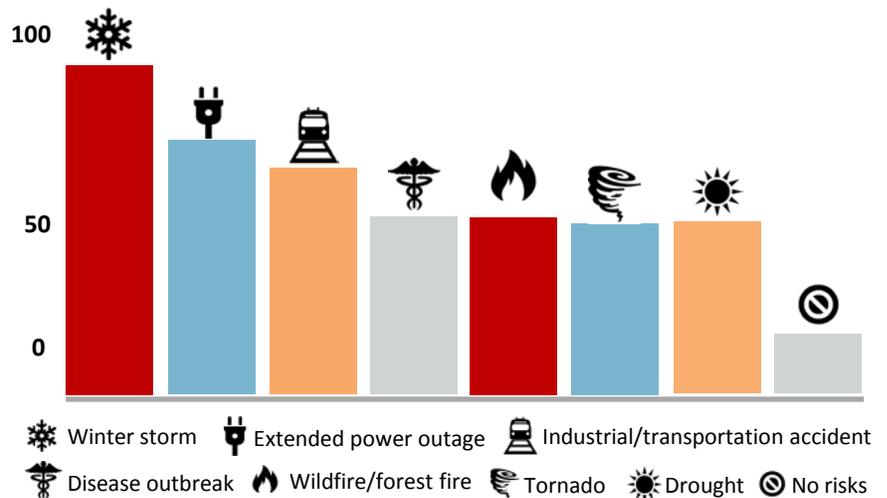
# HOW DO WE KNOW IF WE ARE SUCCESSFUL? A PREPAREDNESS SNAPSHOT OF CALGARY

Highlights of understanding of risk in the city and our readiness for emergencies.

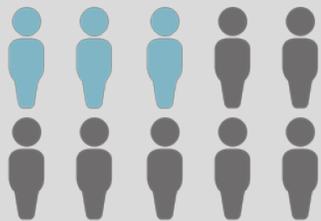
## Do citizens know the risks?

Albertans are more likely than most Canadians to believe they will face a natural or human-induced risk. Research indicates individuals are more likely to prepare for risks they believe will occur.

Albertans believe they are most likely to be impacted by a winter storm, extended power outage or industrial or transportation accident, all three of which are among the top 10 hazards and risks identified by CEMA for Calgary in 2015.

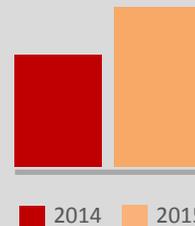


Survey of Emergency Preparedness and Resilience in Canada, 2014, Statistics Canada



### Only 3 in 10

Calgarians have a 72-hour emergency kit to support themselves and their families in the days following an emergency.



### 9% increase

in Calgarians with a 72-hour emergency kit between 2014 and 2015.



Percentage of Albertans with three or more precautionary measures\* in place to support emergency preparedness.



Percentage of Calgarians who feel the city is safer because of the service provided by CEMA.

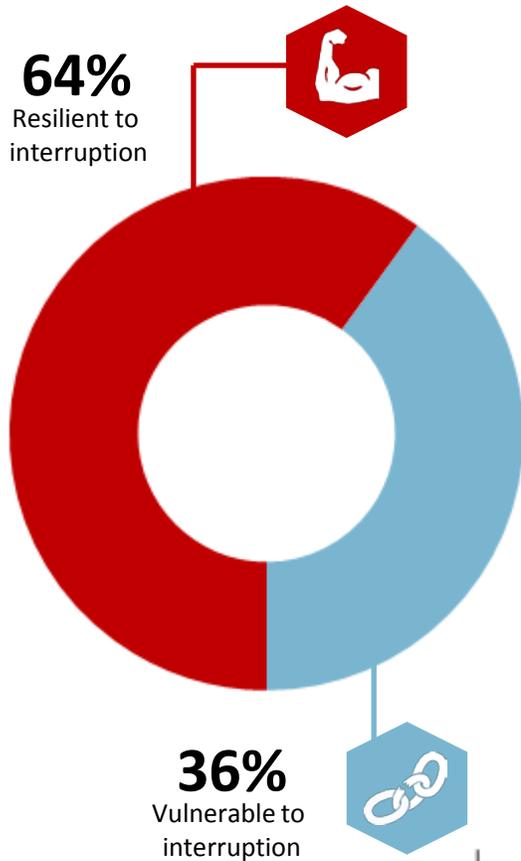


Percentage of Calgarians who have home or tenant insurance to protect personal property from loss.

\*Includes battery-operated/wind-up radio, alternative heat source, back-up generator, alternative water source

# Is The City of Calgary prepared?

## Business continuity: The resiliency of resources required to deliver Corporate essential services



CEMA is the Corporate leader in business continuity. Through our network of business continuity coordinators, we work with City business units to identify essential services that must be maintained by City staff under any circumstance to ensure health, safety and security of citizens and employees or minimize catastrophic costs associated with the loss of a service.

We proactively work with all business units to identify vulnerabilities in City services and establish a framework for identifying solutions to the most common vulnerabilities and create continuity strategies.

CEMA identified 719 dependencies for The City's essential services. By determining which of these dependencies had strong, acceptable and weak workarounds, CEMA was able to determine that 64% of the dependencies were resilient to interruption while 36% were vulnerable. The data on these vulnerable dependencies is currently being used to develop stronger workarounds.



## Are Calgary businesses prepared?

A key element of preparedness is ensuring our city businesses are able to continue operations following an emergency to support economic well being in the city.



Percentage of Calgary businesses that feel confident they are prepared to deal with future emergencies.



Percentage of Calgary businesses with a business continuity plan to support maintaining operations after an emergency.



Percentage of Calgary businesses interrupted by an emergency or planned event in the past two years.

# WHAT DO WE NEED TO BE PREPARED FOR ? GLOBAL AND LOCAL RISKS TO CALGARIANS

The risks CEMA is watching and those expected to impact Calgary in the year ahead.

## Scanning the risk horizon

Geopolitical

CEMA monitors events around the world to forecast potential issues requiring a coordinated planning effort with our members.

Economic

Technological

Environmental

Social



## Key trends in emergency management

The current trends expected to impact Calgary and emergency management preparation and planning.



Extreme weather events



Aging population



Cyber attacks and hyper-connectivity



Aging and vulnerable critical infrastructure



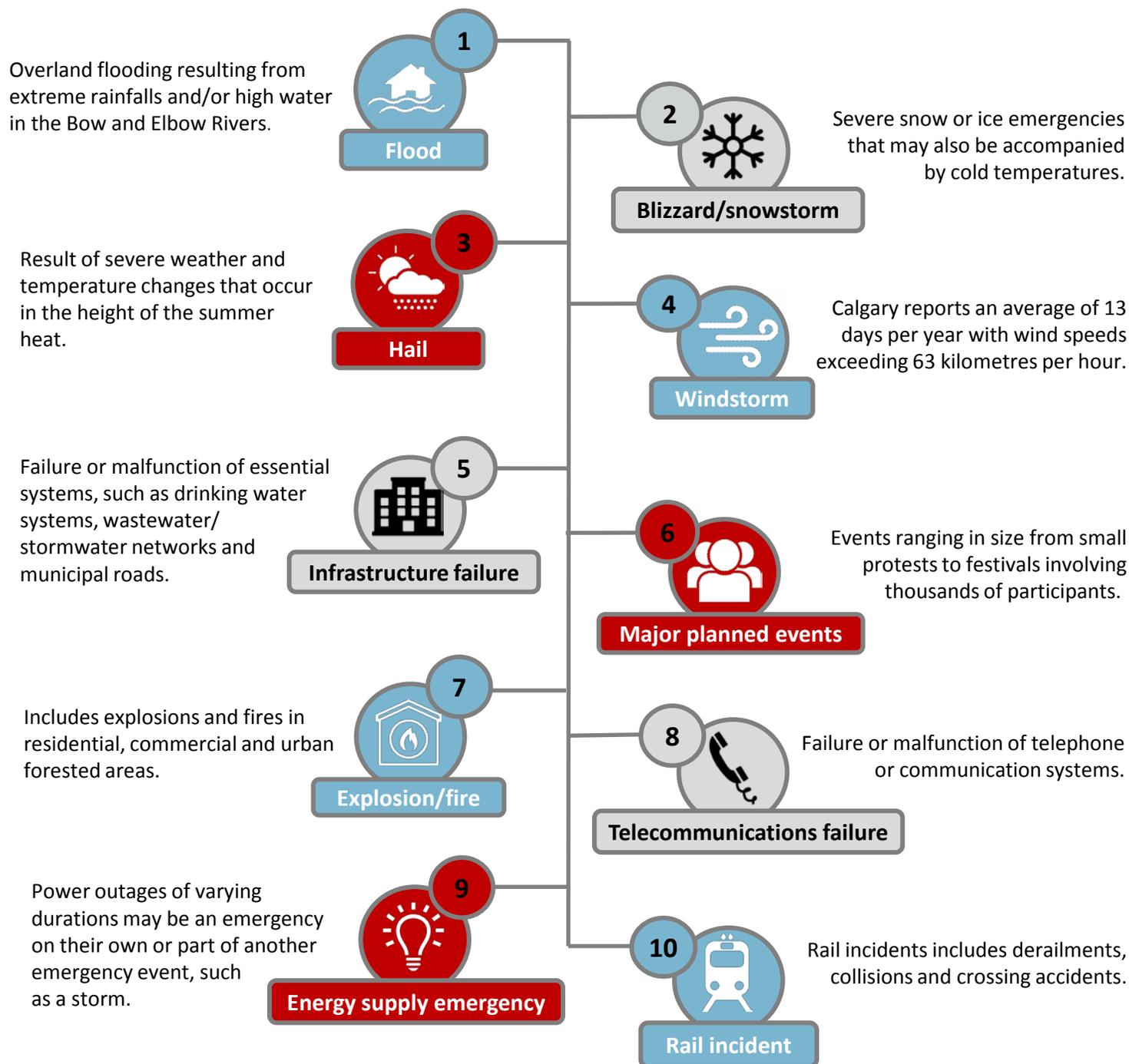
Evolving terrorist threats



Urban density and planning

# Top ten hazards and risks in Calgary

Each year, CEMA compiles the ten most likely natural, technological and human-induced events to occur in Calgary with the greatest potential impact. We analyze events that have impacted our Agency members in the past year, engage subject matter experts to identify and evaluate local risks and assess the impact, changing risk and probability of each potential event.



**Top ten hazards and risks for 2014:** 1. Flood 2. Tornado  
3. Rail incident 4. Hazardous materials/air contamination incident  
5. Explosion/fire 6. Pandemic 7. Hail 8. Energy supply emergency  
9. Windstorm 10. Lightning

# What CEMA is monitoring for Calgary in 2016

In addition to the top ten most likely risks and hazards for Calgary, CEMA also regularly monitors and coordinates planning among its Agency members to prepare for other emerging issues with the potential to impact the city.

## SOCIAL TRENDS



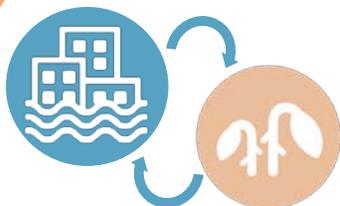
### Infectious diseases

In early 2016, we saw a surge in the number of cases of Zika virus throughout South America. Similar to our approach to Ebola and MERS, we are continuing to monitor its spread and research into transmission methods.

Our monitoring will continue throughout the year as we approach the 2016-2017 flu season to evaluate the potential impact of emergent strains on our citizens .



## ENVIRONMENTAL TRENDS



### Flood to drought

Within the span of a few months, Calgary can shift from a city concerned about flooding to one managing the effects of drought-like conditions.



### Sudden storms

As we begin to uncover the impacts of climate change on Calgary, we are continuing to prepare to manage severe, sudden weather events throughout the year.

## ECONOMIC AND POLITICAL TRENDS



### Alberta economic downturn

Less disposable income results in less expenditures on preparedness and emergency supplies. We are examining how to bolster self-sufficiency in tough economic times.



### Terrorist events

The rise of international terrorist and active assailant events signals a need for us to ensure our city is prepared for these types of emergencies.



### Critical infrastructure

We are identifying the infrastructure essential to citizens' lives and working with our members to develop strategies to protect and strengthen these assets.

# WHAT HAVE WE DONE TO PREPARE? 2015 PROGRAM AND SERVICE HIGHLIGHTS

How CEMA programs and initiatives shaped preparedness in Calgary last year.

## ENGAGED COMMUNITIES

The pilot of READYCALGARY brought participants from communities across Calgary together to learn how to build individual and community preparedness.



## VULNERABLE POPULATIONS

The Persons with Disability Guide and Calgary Police Service Vulnerable Person Self-Registry assist disabled citizens with preparing for, and receiving help during, emergencies.



## TRAINED AND EXERCISED MEMBERS

Over 125 City staff tested processes and procedures for setting up evacuee reception and lodging centres in two emergency social services exercises.



## ACCOMMODATED CALGARIANS

Over 170 citizens displaced from their homes due to an emergency were given temporary accommodation.



## PREPARED BUSINESSES

In partnership with the Calgary Chamber, CEMA visited 320 businesses in flood-prone districts to understand their needs and support continuity planning.



## TESTED BUSINESS CONTINUITY

Over 75 staff from every business unit participated in the first City of Calgary business continuity exercise, practicing their plans for a major event impacting the Corporation's operations.



## EDUCATED CITIZENS

More than 8,000 Calgarians attended CEMA's Disaster Alley where 35 exhibitors shared information on emergency prevention and preparedness.



# WHAT IS HAPPENING TODAY TO PREPARE?

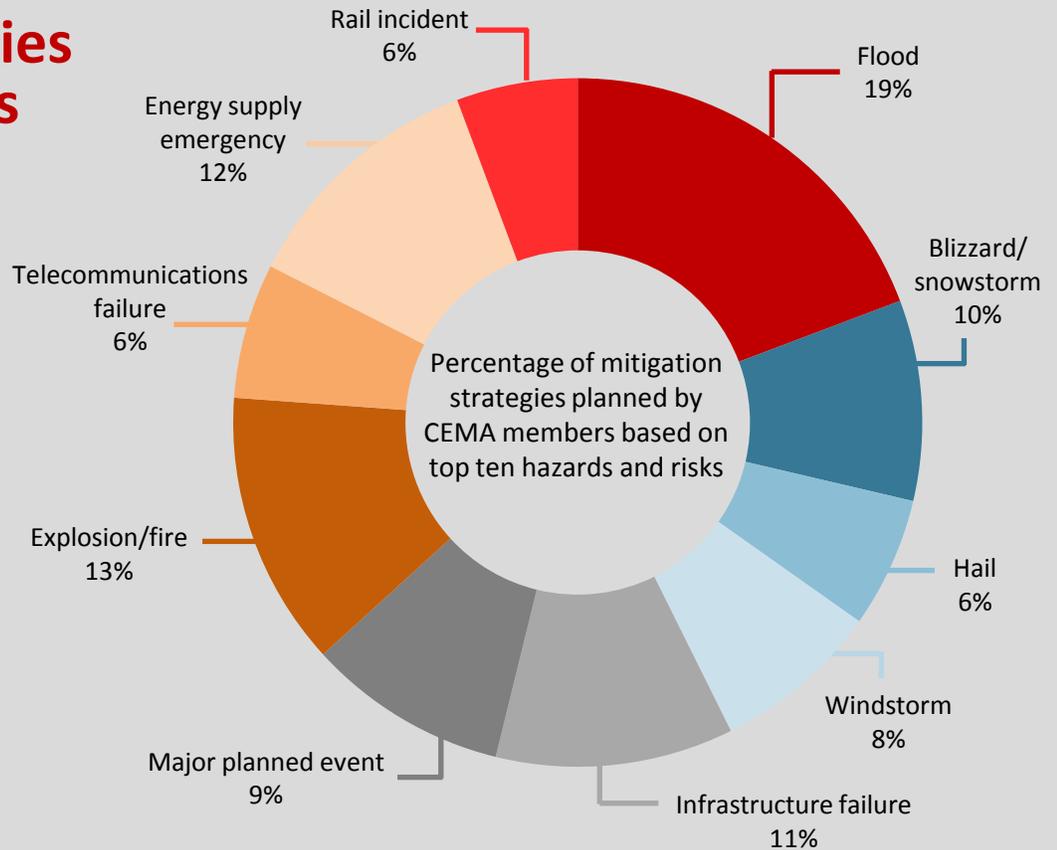
# MITIGATING CALGARY'S RISK

The initiatives currently underway by CEMA and our members to reduce the impact of emergencies on Calgarians.

## Mitigation strategies to address hazards

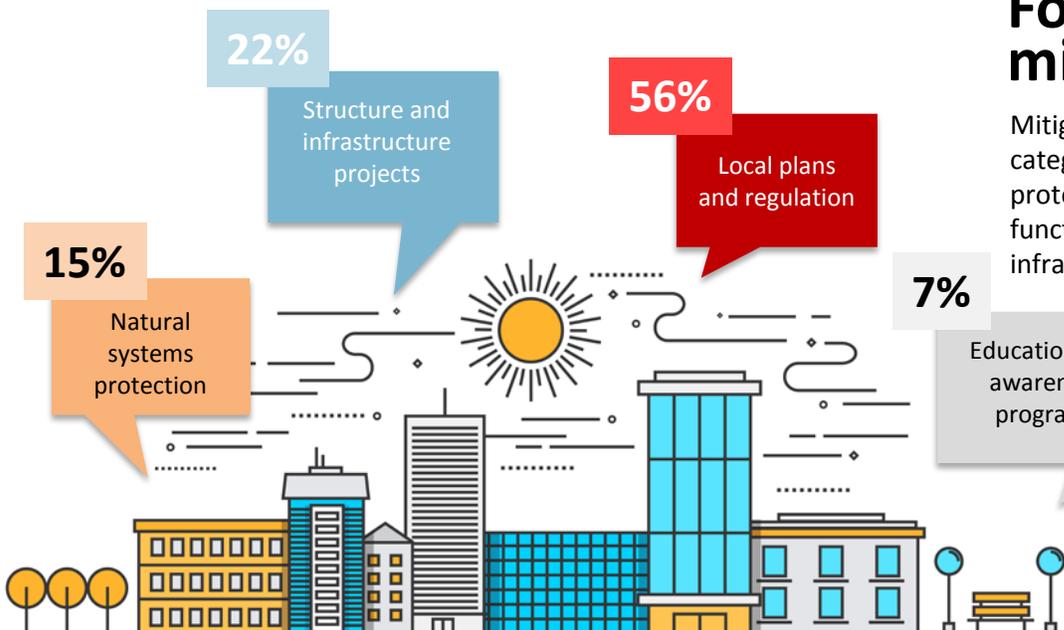
CEMA and its members have a number of mitigation strategies in place designed to reduce risks or mitigate impacts associated with the top ten hazards and risks in Calgary.

CEMA members were engaged to identify the projects that were completed or underway that would have a direct influence on either preventing certain emergencies from occurring or reducing the severity of certain emergency events if they occur. Not surprisingly, a large number of strategies are focused on reducing risks associated with flood, but initiatives to address failures of critical infrastructure, such as telecommunications and energy, are very close behind.



## Forms of mitigation

Mitigation activities fall within one of four categories. Natural systems protection protects, preserves or restores the functions of natural systems. Structure and infrastructure projects protect or remove infrastructure exposed to a hazard. Local plans and regulations are policies or codes that influence land and building development. Education programs inform and educate groups about hazards and potential mitigation actions.



# Mitigation activities

## The City of Calgary projects

Strategies undertaken within The City of Calgary to ensure business continuity and resiliency of operations.



Alternate workspaces and work hubs will allow City employees displaced due to an emergency to continue to work.



A Corporate skills inventory will support the movement of City staff into areas of essential service during emergencies or labour action.



Alternate public service counters at LRT stations will provide access to essential City services during emergency.



Additional capacity for remote network connectivity will allow employees access to the City network during an emergency.



Enhanced procurement processes to be employed during emergencies support effective cost management.



Mobile information technology stations for citizens will facilitate access to City services.

## The city of Calgary projects

Strategies undertaken throughout Calgary to ensure prevent, manage or minimize the impact of emergencies.



Stream bank restoration projects are restoring and stabilizing river bank sites to better withstand future events.



Wind tracking systems installed throughout the city monitor wind conditions and alert of dangerous conditions.



Substation flood protection measures support uninterrupted power supply in an emergency.



A business continuity guide for non-profits provides assistance developing plans for operating following an emergency.



Installation of additional natural gas feeds into areas provide back up lines to reduce the risk of service interruptions.

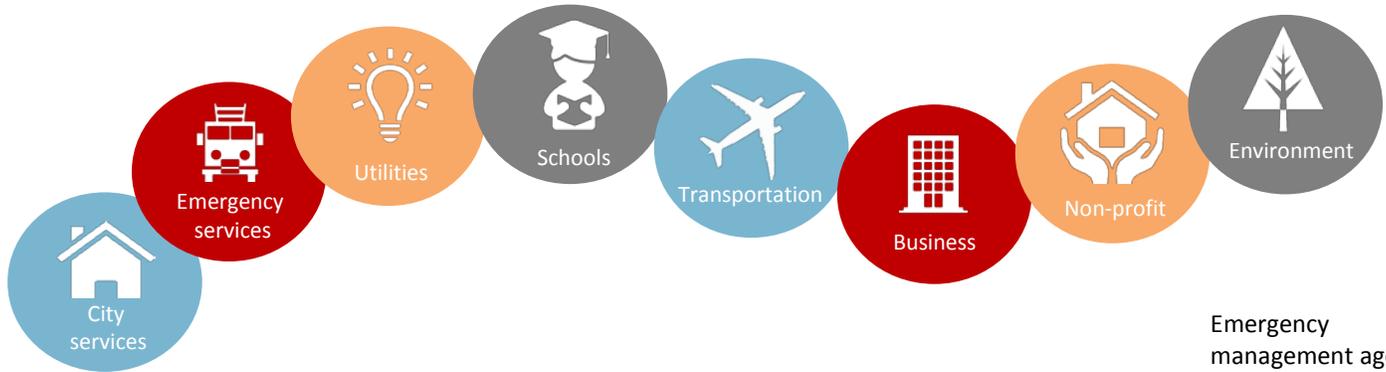


Removal of dangerous trees on school properties reduces the risk of tree emergencies and enhances safety.

## HOW DO WE PREPARE?

# BUILDING CONNECTIONS TO ADVANCE PREPAREDNESS

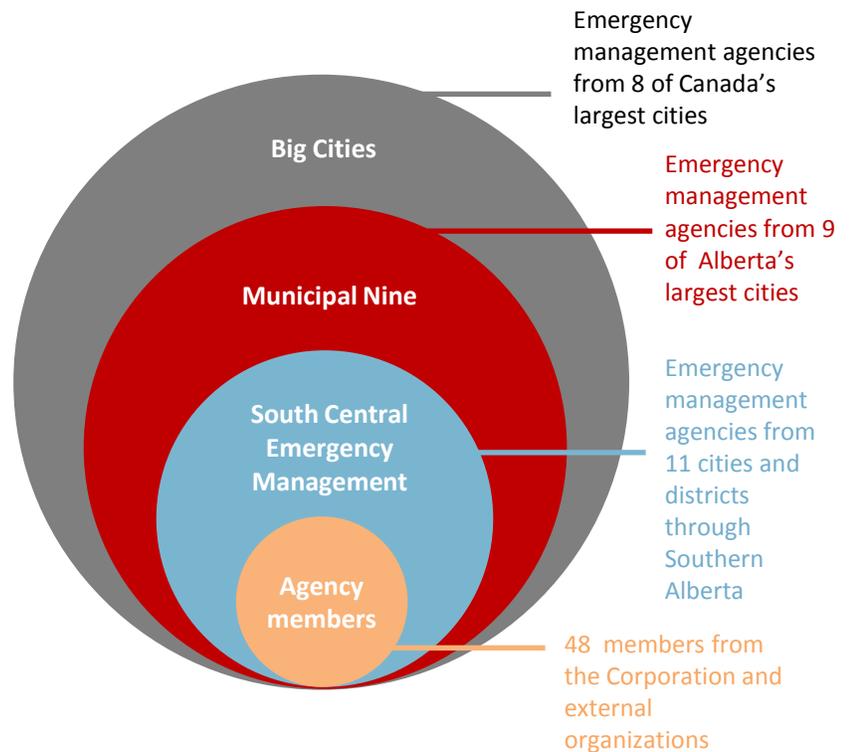
The relationships CEMA facilitates for a coordinated, collaborative and integrated approach to risk, resilience and preparedness.



## The power of many

Preparedness is a shared responsibility. It is the cumulative result of work occurring at all levels of government and within every community. CEMA drives preparedness education at the individual, family, community and business level. Our efforts are expanded exponentially through the reach and work of our Agency members who are responsible for critical infrastructure, essential services and public safety.

CEMA also advocates for funding and programs that increase resilience of communities and strengthen the systems, networks and facilities key to the safety, security and economic well being of Calgarians.



CN Rail and CP Rail joined CEMA as Agency members to support enhanced emergency planning and response to potential rail incidents.

## Connecting for resilience

A utilities sector member identified a vulnerability in one of its locations. The organization engaged CEMA to connect with other members that could assist with mitigating the vulnerability and devised some new collaborative strategies. As a result, the risk of a service interruption resulting from an emergency was significantly reduced.



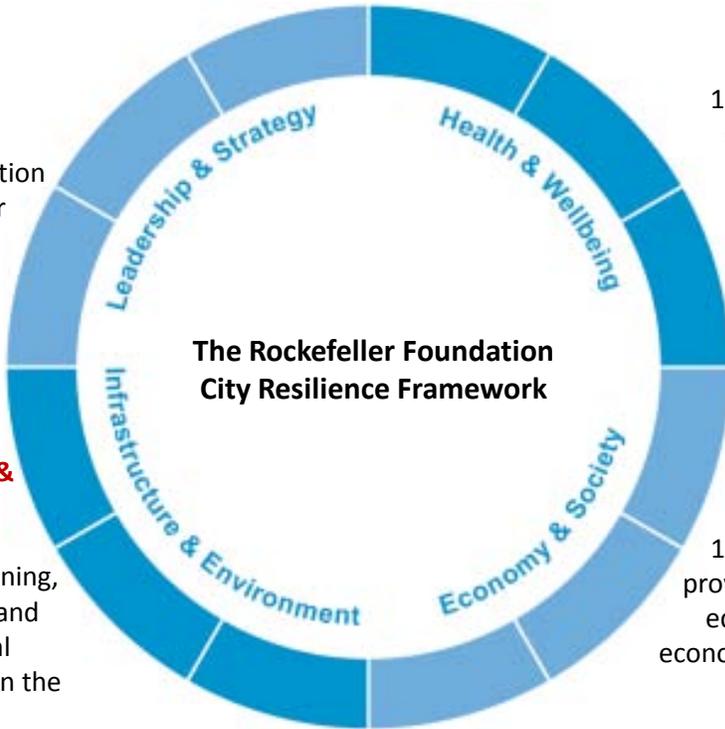
# Contributing to a City of Calgary approach to risk and resilience

## Leadership & Strategy

9+ members providing planning, direction and funding for business continuity, recovery and disaster resilience

## Infrastructure & Environment

24+ members building, sustaining, strengthening and planning critical infrastructure in the city



## Health & Wellbeing

15+ members dedicated to the physical, mental and financial wellness of citizens

## Economy & Society

14+ members providing social, education and economic services to citizens

## A resilient city

CEMA is a vital contributor to The City of Calgary's resilience discussion and approach. Our members are among the essential service providers in each of the four segments of the Rockefeller Foundation City Resilience Framework.

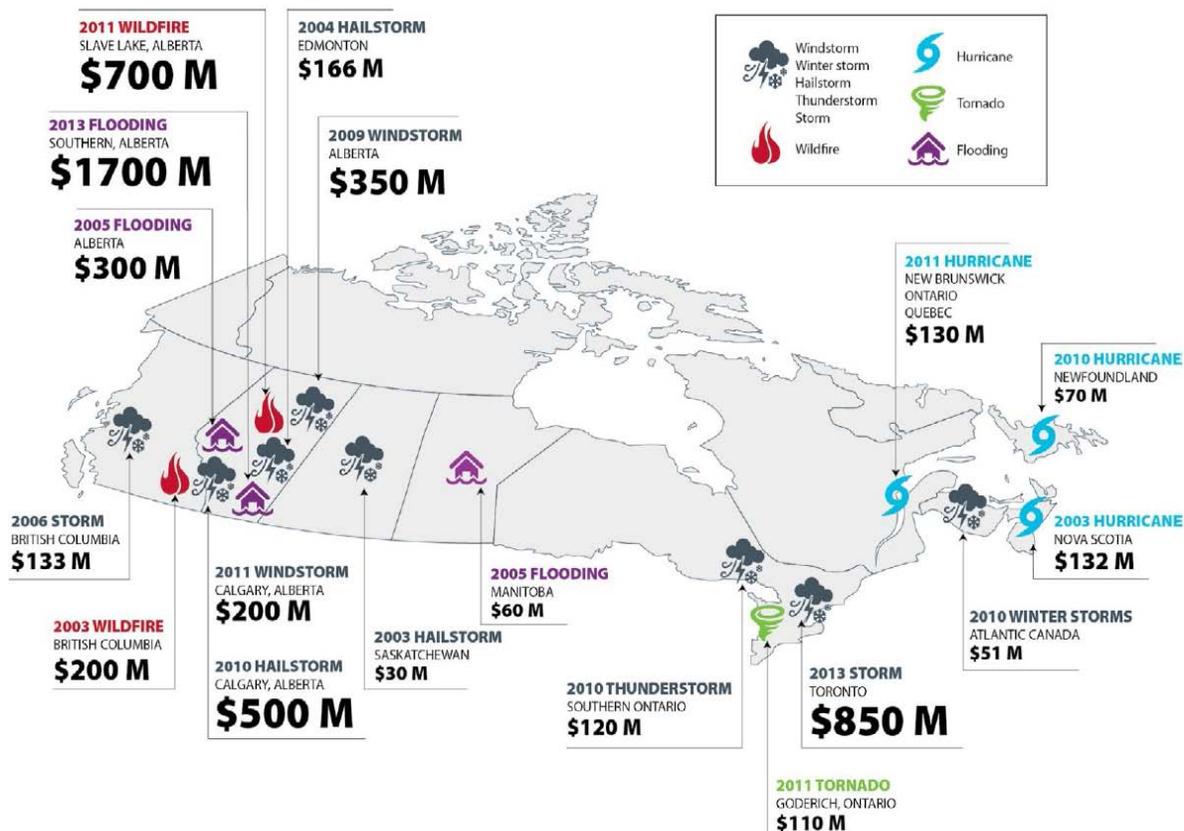
In addition to advancing resiliency through this initiative, CEMA also coordinates the planning for internal resilience through our network of business continuity representatives situated within every City business unit. Aside from developing continuity planning, this network is working together to identify common vulnerabilities and strategies for mitigating them.

## A risk aware city

CEMA is an important partner in helping identify and mitigate risk within the city. Our work and that of our members is helping reduce risks and potentially millions of dollars in losses to our communities.

We are a key member of The City of Calgary's evolving approach to risk and active participant in the current discussions taking place related to risk. We incorporate issues and concerns identified in this group into our planning and monitoring activities. We also advance understanding of the risks we have identified related to emerging natural, technological and human-induced risks and hazards.

## Losses from natural disasters



# WHAT ELSE DO WE NEED TO DO? THE PATH TO ADVANCING PREPAREDNESS

The work CEMA is planning over the next four years to advance safety and preparedness in Calgary.



## CEMA Action Plan

Our four-year Action Plan supports Council's Priority to provide *A city of inspiring neighbourhoods* and is a vital contributor to ensuring every Calgarian lives in a safe community.

Through our five strategic priorities, we are working with Agency members to build resiliency to flooding and enhance The City's capacity and resiliency to prepare for and respond to pandemics, natural disasters and emergency situations.

1

### ASSESSING RISK, VULNERABILITY AND CAPABILITY TO MANAGE EMERGENCY EVENTS

*Identifying and communicating life, property and environmental risks to Agency members, citizens and those with a role in helping reduce the likelihood and impact of emergencies.*

2

### CONTINUALLY STRENGTHENING THE AGENCY AND ITS STAFF

*Developing both CEMA staff and our Agency members to create a team capable of planning for and managing the most complex emergencies.*

3

### ADVANCING CORPORATE RESILIENCY AND BUSINESS CONTINUITY

*Creating programs and processes to help City Business Units, Agency members and businesses throughout Calgary to continue to operate following an emergency.*

4

### EMPOWERING AND FOSTERING A STRONG CITY AND COMMUNITIES CAPABLE OF BOUNCING BACK FROM ADVERSITY

*Advocating for disaster risk reduction activities and advancing preparedness initiatives at an individual, family and community level to create a resilient city.*

5

### COORDINATING EMERGENCY EVENT RESPONSE AND RECOVERY

*Refining and adopting processes and planning to create seamless emergency event monitoring, response and recovery.*

# Our focus for 2016

The key initiatives to be led by CEMA over the next year to advance preparedness and resiliency.

