



Climate Resilience Strategy Update 2019

UCS2020-0308

ISC: Unrestricted

Utilities and Corporate Service (UCS)

15 April 2020



Context 2019



'Catastrophic' climate change is accelerating faster than predicted



Climate change is accelerating, with carbon dioxide levels increasing, sea levels rising and ice sheets melting faster than ever, experts have warned.

Home / News and Stories / Press release

23 SEP 2019 | PRESS RELEASE | GREEN ECONOMY

130 banks holding USD 47 trillion in assets commit to climate action and sustainability

CLIMATE EMERGENCY DECLARATION

CALL TO DECLARE A CLIMATE EMERGENCY

REACT NOW | SIGN UP NOW



What are Calgarians saying?

In 2019 Calgarians shared their perceptions on climate change:

77% “I think we need to act now to address climate change”

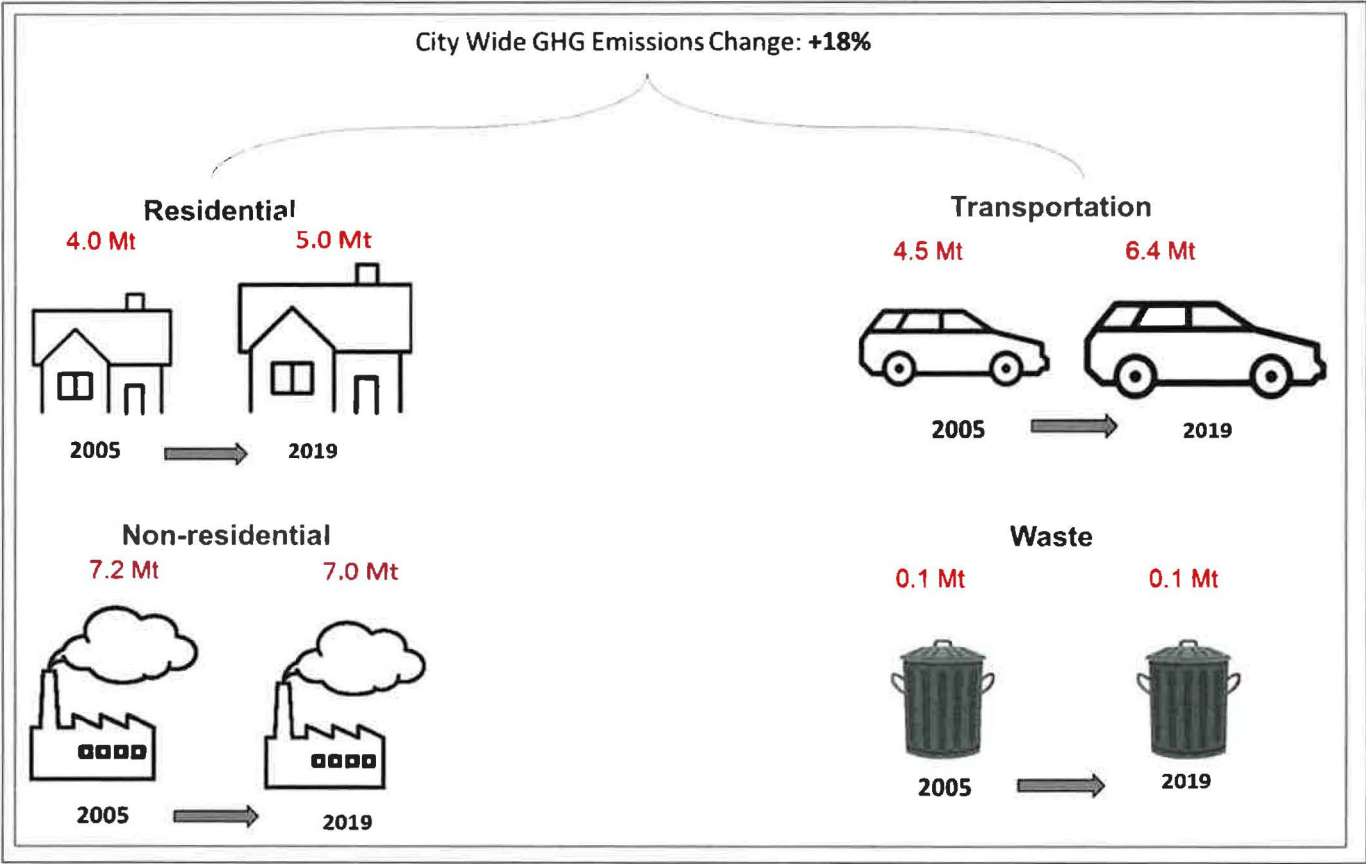
76% “I am concerned about climate change”

73% “I want to do more personally to help prevent climate change”

72% “I think Calgarians should be doing more to help prevent climate change”

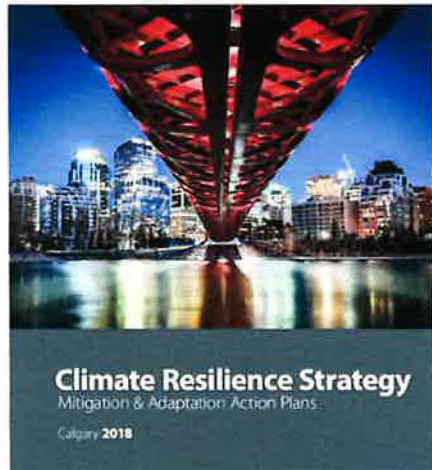
A *Citizen Perspectives Survey* was conducted from 16-23 September 2019, asking 504 Calgarians by phone about their opinions on extreme weather events, measures taken to mitigate impacts of these events, and climate change. Questions in the climate change section were new in the 2019 survey and as such, do not have corresponding 2018 data.

Status of GHG Emissions





Progress



244 Total Actions

36
Actions completed

166
Actions in progress

42
Actions not started

Progress Areas

1. Buildings, Infrastructure and Energy
2. Transportation and Land Use
3. Consumption and Waste
4. Natural Infrastructure
5. Integrated Watershed Management
6. Community Outreach and Education
7. Leadership and Governance



Climate Actions in 2019

Climate Resilience Strategy Deputy City Manager & Chief Resilience Officer

Program Highlight
Resilient Calgary Strategy: Natural Infrastructure

The natural infrastructure strategy multi-year initiative involving cross-departmental collaboration. Over 30 municipal, not-for-profit, academic, industry representatives from across Alberta and British Columbia were in September 2019 to discuss this including natural infrastructure to municipal asset management and framework.

Desired Outcomes of the Natural Infrastructure Program:

- To avoid an unforced liability;
- To enhance natural functions in urban systems;
- To adapt to a changing climate;
- To reduce life cycle costs for infrastructure;
- To realize the multiple social, economic and environmental benefits of nature infrastructure.

Natural Asset Management
Resilience & Infrastructure Calgary continuing to collaborate with the City of Edmonton to integrate natural infrastructure into the City's Corporate Asset Management Plan Framework to determine where assets, asset performance, life understanding lifecycle management.

Program Highlight
Improving Calgary's Ecological Resilience and Natural Carbon Sequestration

Through implementing *Our Biodiverse City* (2015) plan by integrating biodiversity principles into the protection, development and management of Calgary's natural and built environments our urban ecosystems are becoming more resilient to climate change stresses.

Guidelines and practices that have been recently developed are being implemented to support a more resilient landscape including soil and planting recommendations, plant lists, seed mix recommendations, and community biodiversity programs. Work continues to support natural area protection in new community development, improved invasive species management and restoration of natural environments.

Building our urban canopy through regional appropriate tree planting, tree care and education programs provides both mitigation and adaptation benefits. Trees, as well as other vegetation, sequester carbon, reduce air pollutants, provide temperature regulation and intercept stormwater, in addition to their ecological and aesthetic benefits to the community.



What are the climate risks impacting Community Services?

Risks
The evidence-based vulnerability and risk assessment for Calgary, completed in 2017, indicated the following climate risks are likely to have a direct impact on Community Services:

- extreme weather (short duration high intensity storms)
- heavy snow, ice & hazards
- flooding (river & stormwater)
- drought (prolonged low precipitation and low water levels)
- heat waves & temperature fluctuations (freeze & thaw)

Impacts
These high-risk scenarios can lead to:

- damage to infrastructure
- limited water supply
- strain in services availability and landscape function
- compromised safety & staff safety
- critical infrastructure failure
- service disruption
- increased capital, operating & maintenance costs

Climate Mitigation Initiatives (Examples)
Implementing Energy Efficiency in Affordable Housing

137 multifamily units in a mixed-use development are under construction with a target of 25% improved energy efficiency compared to the 2015 National Energy Code for buildings.

Program 1: Energy performance standards in buildings

Village Square Leisure Centre Power Project

A power factor correction project contributed to an improvement from 74% to 95% ratio of real power to apparent power flow to the Village Square Leisure Centre.

Program 1: Energy performance standards in buildings

Rosedale Affordable Housing Development

Calgary Housing is developing 16 affordable modular housing units within the community of Rosedale. These homes will be substantially constructed off-site and delivered on-site to provide secure, energy efficient, affordable housing in the area.

Program 1: Energy performance standards in buildings

Climate Adaptation Initiatives (Examples)
Improving Calgary's Ecological Awareness

Calgary Parks is engaging and inspiring residents on the value of biodiversity communities, native plants, trees, pollinators, sustainable landscape design and maintenance through various interactive programs.

Program 7: Natural asset adaptation

Improving Protection for Vulnerable Populations

The Calgary Neighbourhoods Non-Profit Organization (NPO) enhances communication and coordination between non-profit organizations and CEMA for preparedness planning and emergency response.

Program 3: Staff & citizen outreach

Improving Citizen Awareness of Risks

The Disaster Risk Explorer developed by CEMA shares information on hazards and risk mitigation measures that Calgarians can take to prepare and respond to natural hazards and infrastructure failure.

Program 11: Severe weather response and recovery management

Climate Resilience Strategy - Transportation

Program Highlight
What are the climate risks impacting Transportation?

The evidence-based vulnerability and risk assessment for Calgary, completed in 2017, indicated the following climate risks that are most likely to have direct impact on Transportation:

- extreme weather (short duration high intensity storms)
- heavy snow, ice & hazards
- flooding (river & stormwater)
- heat waves & temperature fluctuations (freeze & thaw)

Impacts
These high-risk scenarios can lead to:

- damage to Calgary Transit & Road Infrastructure
- limited availability of public transit
- compromised safety & staff safety
- critical infrastructure failure
- service disruption
- increased capital, operating & maintenance costs

Climate Adaptation Initiatives (Examples)
Calgary Transit's Resilient Transit Plan

The Resilient Transit Plan is a multi-year strategy to ensure Calgary Transit's services are resilient to climate change impacts.

Program 1: Resilient Transit Plan

Climate Resilience Strategy - Utilities & Environmental Protection

What are the climate risks impacting Utilities & Environmental Protection?

The evidence-based vulnerability and risk assessment for Calgary, completed in 2017, indicated the following climate risks that are most likely to have direct impact on Utilities & Environmental Protection:

- extreme weather (short duration high intensity storms)
- heavy snow, ice & hazards
- flooding (river & stormwater)
- heat waves & temperature fluctuations (freeze & thaw)

Impacts
These high-risk scenarios can lead to:

- damage to water treatment plants
- limited water supply
- compromised safety & staff safety
- critical infrastructure failure
- service disruption
- increased capital, operating & maintenance costs

Climate Resilience Strategy - Planning & Development

What are the climate risks impacting Planning & Development?

The evidence-based vulnerability and risk assessment for Calgary, completed in 2017, indicated the following climate risks that are most likely to have direct impact on Planning & Development:

- extreme weather (short duration high intensity storms)
- heavy snow, ice & hazards
- flooding (river & stormwater)
- heat waves & temperature fluctuations (freeze & thaw)

Impacts
These high-risk scenarios can lead to:

- damage to public & private buildings & infrastructure
- compromised safety & staff safety
- loss of service availability in public spaces & major civic facilities
- increased capital, operating & maintenance costs

Climate Adaptation Initiatives (Examples)
Calgary's Energy Efficiency Program

Calgary's Energy Efficiency Program provides financial incentives to encourage energy efficiency improvements in residential and commercial buildings.

Program 1: Energy performance standards

Climate Change Planning & Policy Implementation

Calgary's Climate Change Planning & Policy Implementation Program ensures that climate change considerations are integrated into all City planning and policy processes.

Program 12: City planning & policy

Climate Adaptation Initiatives (Examples)
Municipal Development Plan (MDP) Update

The MDP Update includes provisions for climate change adaptation, such as requiring new developments to include climate change considerations in their design and construction.

Program 12: City planning & policy

Enhanced Project Support

Calgary's Project Support Program provides technical assistance and funding to support climate change adaptation projects in the private sector.

Program 12: City planning & policy

Calgary Climate Panel Recommendations

Challenges

Implementation
and Credibility

Resources and
Funding

Alignment –
Policy and
Initiatives

Opportunities

Leadership &
Effective
Governance

Resource
Capacity and
Funding
Opportunities

Project
prioritization
and
Partnerships



Climate Actions for 2020 (Examples)

A Well-Managed Program

- Low Carbon Cities Canada (LC3)
- Internal Corporate Governance
- Climate Investment Criteria
- Measurement and Reporting

Reduced Corporate and Community Risk and Vulnerability

- Review engineering design guidelines
- Training and technical assistance
- Collaborative actions with development industry

Reduced Corporate and Community Emissions

- Residential Energy Labelling
- Utilities and development opportunities
- Corporate Emissions and Energy Plan
- Climate in Planning and Development

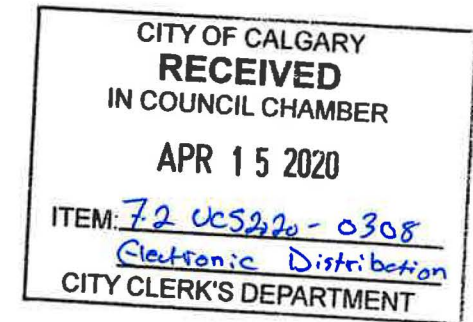
Awareness and Education

- Climate 101 – Internal awareness
- Climate campaign – community awareness
- Citizen Action
- Climate data sharing
- Working with other cities

*continue with existing programs



Recommendation



That the Standing Policy Committee on Utilities and Corporate Services recommend that Council direct administration to:

1. Direct Administration to return to Standing Policy Committee on Utilities and Corporate services, as required, between annual reports with a briefing report update.