

**Utilities & Environmental Protection Report to
SPC on Utilities and Corporate Services
2018 June 13**

**ISC: UNRESTRICTED
UCS2018-0688
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Climate Resilience Strategy and Action Plans

EXECUTIVE SUMMARY

The purpose of this report is to seek Council support of the Climate Resilience Strategy and Action Plans (Attachment 1).

In partnership with service owners and business units, Environmental & Safety Management (ESM) developed a renewed, corporate-wide commitment and approach to carbon and energy management and climate risk through the development of a Climate Resilience Strategy (the Strategy). The Strategy provides the overview and main direction for Climate Resiliency in Calgary. It defines The City's role in reducing greenhouse gas (GHG) emissions and adapting to the impacts of climate change. It will also set policy to guide climate resilience plans to achieve immediate to long-term resilience objectives. These action plans include the following:

- **Climate Mitigation Action Plan** – this plan identifies the role and actions of The City to ensure services, enabling activities, regulations and operations are provided to reduce GHG emissions and enable the low carbon economy. This plan is built around five themes (buildings and energy systems; transportation and land use; consumption and waste; natural infrastructure; and leadership).
- **Climate Adaptation Action Plan** – this plan identifies the risks and vulnerabilities from severe weather events and involves an iterative process of risk assessment. This plan is also built around five themes (people; infrastructure; natural infrastructure; water management; and governance).

These plans contain defined actions over the next 10 years, which will begin during the 2019 – 2022 business cycle. Alignment and integration with existing business planning processes was started in 2017 through the development of these two plans.

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ADMINISTRATION RECOMMENDATION:

That the Standing Policy Committee on Utilities and Environmental Services recommend that Council:

1. Approve the Climate Resilience Strategy and Action Plans.

RECOMMENDATION OF THE SPC ON UTILITIES AND CORPORATE SERVICES, DATED 2018 JUNE 13:

That Council:

1. Approve the Climate Resilience Strategy, **Climate Mitigation** and **Adaptation** Action Plans in Report UCS2018-0688.
2. **Direct Administration to work with industry and community representatives to establish a Climate Resilience Working Group to provide input into the prioritization and continued development of climate resilience actions.**
3. **In developing the implementation plans with timelines and outcome measures, direct Administration to incorporate best practices from the other 100 Resilient Cities.**

PREVIOUS COUNCIL DIRECTION / POLICY

The 2011 Calgary Community GHG Emissions Reduction Plan was developed in support and consideration of the 2020 Sustainability Direction.

Action Plan 2015 – 2018 includes key actions of community engagement on greenhouse gas reduction, partnerships, adaptation, the development of climate plans, and ongoing education efforts. The City's current and future actions on climate change mitigation and adaptation support Council's priorities. Key actions led by ESM on behalf of the Corporation include:

- H2.1 - Design and deliver programs to engage the community to advance the goal of reducing community greenhouse gases.
- H2.2 - Identify partnership and funding opportunities for energy efficiency and air quality-related initiatives throughout the community.
- H3.2 - Develop a comprehensive climate adaptation plan and implementation tools to reduce future impacts.
- H6.1 - Assume leadership role in educating and engaging the public to create awareness of links between energy consumption and GHGs, air quality, and climate change.
- H10.1 - Minimize the environmental impacts from City operations and capital projects, showcasing innovative and practical solutions to show leadership.
- H10.3 - Reduce GHG emissions from corporate sources to be an example for other corporations and municipalities.

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On 2017 February 22 (UCS2017-0064 – A Climate Program for The City of Calgary) Administration provided an update on activities taken to date including the development of the Climate Program and the approach to be utilized.

On 2018 March 21 (C2018-0340 – Guiding Principles for Climate Resilience) Council approved a set of guiding principles to enable climate change and carbon and energy management to be considered in decisions.

BACKGROUND

As a member of the 100 Resilient Cities network, The City of Calgary and its partners are striving to increase the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt and grow, no matter what kinds of chronic stresses and acute shocks they experience. The changing climate poses a challenging risk to The City's ability to deliver its services to Calgarians. The increasing frequency and magnitude of extreme weather events is a risk multiplier, and requires an integrated, corporate-wide approach to climate resilience.

The City's current and future actions on climate change mitigation and adaptation support Council's priorities. Action Plan 2015 – 2018 includes key actions of community engagement on greenhouse gas reduction, partnerships, adaptation, the development of climate plans, and ongoing education efforts.

On 2018 May 15 (ALT2018-0537 – Climate Resilience Strategy and Action Plans) the Administrative Leadership Team provided direction to Administration to support the Climate Resilience Strategy and Action Plans, and to consider them in One Calgary service plans and budgets.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

The Climate Program evolved in several key areas over the past year including outreach and education, alignment with federal and provincial policy, risk integration into operations and services, and the development of strategies and actions. During 2017, in-depth research and targeted stakeholder engagement also occurred to establish baselines and analyse the risk and vulnerability of infrastructure, people and the natural environment and to identify carbon and energy opportunities.

Recent research has found that the shift towards a lower carbon development path for Calgary is economically and technologically viable and poses opportunities. Energy efficiency upgrades in buildings improve comfort and lower costs. These investments create jobs, especially for local businesses, while making the city more resilient to future shocks. The transition to a low carbon economy will occur through strong collaborative efforts with industry and partners.

The report includes The Strategy, the Climate Mitigation Action Plan and the Climate Adaptation Action Plan. The Strategy provides the strategic overview and main direction for Climate Resilience in Calgary. It focuses on defining The City's role in reducing GHG emissions and adapting to the impacts of climate change. It will also set policy to guide climate resilience plans and actions to achieve immediate to long-term resilience objectives and highlight the need for collaborative governance, informed and prioritized investment, innovative funding, appropriate timing and annual monitoring and reporting.

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The Climate Mitigation Action Plan presents five themes: buildings and energy systems; transportation and land use; consumption and waste; natural infrastructure; and leadership. These themes cover the largest areas of impact for emissions and energy in Calgary. Ten programs focus on the specific outcomes to be pursued with 69 actions identified as the first steps in the process.

The Climate Adaptation Action Plan presents five themes: people; infrastructure; natural infrastructure; water management; and governance and identifies two to three programs within each theme. Actions within this plan were developed to reduce the risk and potential effects of actual and projected climate impacts.

Alignment and integration with existing business planning processes started in 2017 through the development of the mitigation and adaptation plans. New funded and unfunded actions were proposed by business units through the stakeholder engagement process defined below. These were included and will be delivered as part of the business unit's One Calgary service plans and budgets process.

Administration will continue to formulate and implement the other pillars of the Climate Program, including leadership, capacity building, integration and alignment and education.

Stakeholder Engagement, Research and Communication

Climate resilience in Calgary requires a combined and collaborative initiative by The City of Calgary alongside a diverse cross section of industry, academics, environmental organizations and citizens. Over 200 City staff participated and contributed to the development of the actions contained in the Climate Resilience Strategy and Actions, which also received approval from Directors.

The development of the Climate Mitigation Action Plan followed a process of scenario development for a low carbon future and the analysis of possible initiatives. Three external working groups with representatives from industry, technical experts, academia, and the environmental sector were asked to focus on the top three areas to reduce greenhouse gas emissions in the community:

- Buildings and Energy Systems
- Land-use and Transportation
- Waste and Consumption

Five workshops were held from June 2017 to May 2018 and contributed to all aspects of the Mitigation Action Plan, including shaping the technical analysis, offering feedback about current challenges when working with The City to implement climate innovations, and developing the strategies, programs and actions contained within the Plan. This opened a dialogue between industry and City staff to identify mutually supportive actions where The City could fulfill its municipal role in supporting a low carbon future.

The Climate Adaptation Project Team was comprised of Climate Program staff and City staff from Corporate Analytics & Innovation (CAI), Transportation, Water Resources, Environmental & Safety Management (ESM), and Planning & Development (P&D).

Two special advisory groups were also created to provide technical input to the research:

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- The Climate Change Risk Management Group (RMG) was comprised of City of Calgary managers and subject matter experts from across 27 business units, and focused on providing input and review to the risk assessment and adaptation actions research.
- The Climate Change Risk Advisory Group (RAG) was also comprised of City staff, in this case with substantive expertise and responsibilities in risk management across seven business units. They provided overall guidance to the risk matrix development and scoring process.

Strategic Alignment

The Guiding Principles for Climate Change are aligned in achieving the outcomes of 100 Resilient Cities (100RC), One Calgary and Council Directives.

The goals of Calgary Economic Development (CED) and of the Climate Mitigation Action Plan overlap in that both support development of a low carbon economy. Actions in the Climate Resilience Strategy will look to align with that of the new CED Economic Strategy for Calgary.

The recently approved Council Directives for One Calgary include “A Healthy and Green City: Calgary is a leader in caring about the health of the environment and promotes resilient neighborhoods where residents connect with one another and can live active, healthy lifestyles”. The need for climate resiliency is further emphasized:

“Calgary needs to address climate change in a way that engages Calgarians, resonates with the majority, and doesn’t alienate people. We need to lever incentives that focus on the economic benefits of addressing climate change (such as business diversification, job creation, opportunities for small businesses and all Calgarians) and align The City’s climate change strategies with other orders of government and industry initiatives. Calgary and The City should become nationally and internationally competitive by embracing a low carbon economy, fostering alternative energies and developing strategies to reduce adverse impacts and vulnerabilities resulting from climate change.”

The development of The Strategy and plans has been intentionally aligned with the development of service plans and budgets for One Calgary (2019-2022).

Social, Environmental, Economic (External)

It is often the most vulnerable in society who are most affected by climate impacts and who will, therefore, most benefit from municipal action to develop climate resilience. Developing greater resilience to climate impacts can help to avoid costs to municipalities and lead to savings in the costs of service provision which in return could see households and businesses have significant decrease in energy spending.

The natural environment can play a key role in developing resilience, for example through tree canopy expansion or flood and/or drought alleviation. Research and practice has shown a wide range of potential benefits for water sensitive urban design and integrated catchment management, including combating of extreme heat and improving air quality.

Climate-related risks to sites and infrastructure can hinder economic growth, but a focus on climate resilience can generate economic opportunities. The cost of managing impacts is typically greater than the cost of climate-compatible development. Capitalizing on growing the

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clean technology market, creating high quality local jobs, and the attraction and retention of businesses are all areas that benefit from a low carbon economy.

Financial Capacity

Current and Future Operating Budget:

Climate related programs and projects will be included as part of One Calgary submissions. Any specific operating budget changes will be reported to ALT and Council, as required.

Current and Future Capital Budget:

Climate Resilience is being considered as one of the criteria for the 2019 – 2022 Corporate Prioritization/Coordination Criteria for capital projects. Climate related programs/projects will be included as part of One Calgary submissions. Any capital budget adjustments resulting from provincial, federal or other grants/funds will be reported to ALT and Council, as required.

Risk Assessment

Doing nothing in the face of climate change would expose an organization's assets, services, customers and employees to the full force of extreme weather events and climate change, while increasing carbon emissions and energy costs. It would impede the ability to meet organizational objectives and the expectations of other levels of government, investors, taxpayers, customers and employees.

Calgarians who depend on municipal services have a growing expectation that decision-makers will take climate change into account when planning, building and operating infrastructure.

While significant risks will arise from climate change, adaptation and mitigation measures could also create new opportunities for job growth and prosperity, such as innovative engineering solutions.

REASON(S) FOR RECOMMENDATION(S):

The City has a role in carbon and energy management and in reducing climate risks for Calgary. The Climate Resilience Strategy and Actions Plans are presented to Council to provide direction for Climate Resiliency in Calgary. They will guide The City's plans to achieve immediate to long-term climate resilience objectives.

ATTACHMENT(S)

1. Attachment 1 – Climate Resilience Strategy and Action Plans – UCS2018-0688