



The City of Calgary
PO Box 2100, Station M
Calgary, AB T2P 2M5

June 12, 2018

Attention: Members of Standing Policy Committee on Utilities and Corporate Services

Re: **UCS2018-0688: Climate Resilience Strategy and Action Plans**

BILD Calgary Region would like to thank the Climate Team for involving BILD through various components of its Climate Mitigation work, from the Low Carbon Economy Advisory Panel through to the working sessions hosted by the City. It has been a pleasure to work with the team. Having worked supportively with the Climate Team on the Mitigation side of the strategy, BILD agrees with the Climate Resilience Strategy in principle. We would like to see this strategy succeed, and have some key concerns on implementation – in particular, that the strategy is not set up for a successful outcome.

BILD Concerns:

1. The combined Strategies and Actions Plans are extremely ambitious in size and scope, but have no structure for prioritization, engagement, governance or funding.

Approval is being requested for a Strategy which consists of **10 themes + 23 programs + 129 actions in total.**
(Mitigation Plan: 5 themes + 10 programs + 69 actions / Adaptation Plan: 5 themes + 13 programs + 51 actions)

Attachment 1 to this letter is a chart that the City Climate Team provided to its working group members on May 30, 2018 – summarizing the Mitigation Plan. **Attachment 2** to this letter highlights the adaptation actions, which BILD has summarized directly from Administration's report.

Each action is further broken down into smaller components which BILD understands correspond to funding and timeframes, however there is no prioritization provided across the actions, no emphasis on setting up a governance structure – which is critical considering the strategy is to be cross-corporate and involve external stakeholders, plus it is to include monitoring and reporting. Even if stakeholder involvement were to occur across these action items, our industry would find itself hard-pressed to respond to 100+ actions/initiatives in any meaningful way.

The funding support and requirements for the various actions are unclear.

The Adaptation Action Plan was not vetted with external industry stakeholders, and the Natural Infrastructure theme in the Mitigation plan is also new to industry - yet many of these actions have significant impact on approval and planning processes.

2. There is no direction to assess, prioritize and align existing regulation, before creating new ones.

Many of the 129 actions proposed for approval will generate new policies, programs, plans, initiatives, strategies, processes and/or specifications, or add to existing regulatory platforms. Some of these regulatory components are not currently aligned with climate resilience, some are currently struggling with implementation, general alignment and/or prioritization. There is no action item to ensure the existing regulatory content is aligned and functional, **before** adding to it. We believe that adding another layer of regulation, especially in the manner associated with our above concern, will cause significant amounts of resource and effort to be applied towards generating policy, with few (if any) positive results.

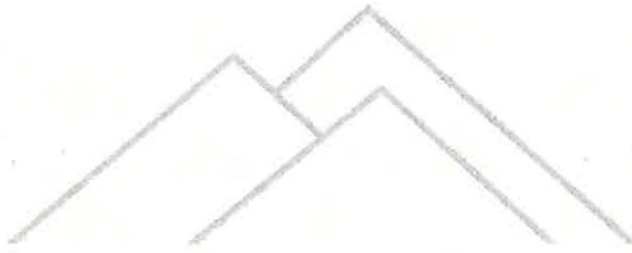


BILD Request:

BILD requests that the Strategy and Action Plans be approved through a staged approach. Approve the Resilience Strategy but not the Action Plans. Direct that action plans be determined through appropriate support and governance – which includes external stakeholders. Provide direction to determine and align funding with future actions as they come forward.

- 1. Limit approval of the Climate Resilience Strategy to only include the Themes and Programs identified within Report UCS2018-0688;**
- 2. Direct Administration to resource a City/Industry governance/work group*, which would work with the approved themes and programs of the Climate Resilience Strategy, to determine appropriate actions to achieve the intent of the overall strategy. Direct that both Mitigation and Adaptation actions be considered under this group to avoid exclusion, redundancy and silo approaches. Actions that require funding or further Council direction should come back through the appropriate committees to Council;**

**The City/Industry Work Plan, under Planning and Development, has a structure that works quite effectively. BILD would support the creation of a similar structure and Work Program to support the combined Climate Mitigation and Adaptation Plans.*

- 3. Ensure the actions identified through the City/Industry group are appropriately funded, supported and resourced through One Calgary.**

Thank you for considering our request. BILD believes that this approach will help structure the overall strategy and program in a manner that utilizes public funds prudently, promotes positive collaboration, and achieves intended results. We further believe that this approach will assist Administration and external stakeholders in delivering on the strategy, and look forward to continued collaboration with the team.

Yours truly,


Grace G. Lui

Director, Strategic Initiatives and Government Relations
BILD Calgary Region

CC: David Duckworth, General Manager Utilities & Environmental Protection
Chris Collier, Director, Environmental & Safety Management
Dick Ebersohn, Manager, Climate Change & Environment

Theme: Buildings and Energy Systems

Program 1: Energy performance standards in new and existing buildings

Why: Energy use in buildings makes up about 70% of GHG emissions generated in the community. The new provincial energy code ensures that new buildings' energy performance will improve, however, standards in Calgary must improve quicker than the energy code dictates to meet our GHG reduction targets. A significant portion of the buildings (~50-80% depending on Calgary's growth) that will exist in Calgary in 2050 have already been built today. To meet our GHG targets in the buildings sector, it is essential that we find ways to improve the energy performance of our existing building stock

Improve building performance requirements beyond current building code				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
1.1 Support the implementation of energy step codes for new buildings				
a) Participate in the development of energy step codes at the provincial and federal levels.	Calgary Building Services		Existing	2018 – 2026
b) Collaborate with industry to prepare for adoption of energy step codes as they are developed.	Calgary Building Services		New	2018 – 2026
c) Enable Passive House PHP software and systems for code compliance	Calgary Building Services		New	2019 – 2020
1.2 Prepare Calgary for the implementation of a retrofit buildings code				
a) Participate in the development of a retrofit building code at the provincial and federal levels	Calgary Building Services		New	2018 – 2026
b) Evaluate current permitting and inspection services to identify how energy performance standards can be incorporated under a new code as it is developed.	Calgary Building Services		New	2018 – 2026
Investigate monetary and non-monetary incentives to improve building performance				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
1.3 Investigate policy approaches to incentivize improved energy performance and GHG reductions in all sectors (including monetary and non-monetary incentives)				
a) Investigate relaxation of development requirements for minimum separation requirements of buildings	Calgary Building Services		Existing	2018 – 2019
b) Develop an approach and mechanism to connect owners of secondary suites requiring upgrade with provincial energy efficiency funding programs to deliver safe and energy efficient secondary suites in existing buildings.	Calgary Building Services		Existing	2018 – 2020
c) Partner with provincial and federal agencies to optimize deployment of investments in energy efficiency in Calgary	Environmental & Safety Management		New	Ongoing
d) Collaborate with industry to research and design incentive programs to enable improve energy performance in new and existing buildings	Environmental & Safety Management		New	2018 – 2022
e) Facilitate wastewater heat recovery systems in the private sector	Water Utility		New	2022 – 2026
Enabling innovative financing mechanisms to fund improved energy performance				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
1.4 Enable innovative financing mechanisms to fund improved energy performance				
a) Continue to collaborate with the province to implement a Property Assessed Clean Energy (PACE) loan program in Calgary	Environmental & Safety Management		New	2019 – 2022

Program 2: Energy consumption information

Why: Credible and current energy use information enables consumers to make more informed choices about reducing energy use and GHG emissions. Energy use information also enables governments, utilities, and agencies to make more informed decisions about designing energy efficiency programs for citizens and businesses.

Implement building labelling and benchmarking for new and existing buildings				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
2.1 Develop a residential building labelling program for Calgary				
a) Provide input on the development of federal and provincial building labelling direction and advocate for funding to be included in provincial energy efficiency incentive programs	Environmental & Safety Management		New	Ongoing
b) Establish a working group to collaborate with the City of Edmonton, the provincial government and industry to develop and implement a program for mandatory building labelling program for new and existing residential buildings.	Environmental & Safety Management		New	2018 – 2022
c) Develop a system to publicly report the energy performance of residential buildings	Environmental & Safety Management		New	2019 – 2022
d) Partner with the province and provincial real estate boards to work directly with realtors to provide information and education on how to understand and communicate the energy performance of buildings.	Environmental & Safety Management		New	2019 – 2022
2.2 Develop a commercial building benchmarking program for Calgary				
a) Pilot a commercial benchmarking and disclosure program for City-owned buildings to inform the development of a city-wide program and share the results.	Corporate Analytics & Innovation		Existing	2018 – 2019
b) Establish a working group to collaborate with the City of Edmonton, the provincial government and industry to develop and implement a program for mandatory benchmarking and disclosure program for new and existing commercial buildings	Environmental & Safety Management		New	2018 – 2022

Improve energy literacy and capacity building				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
2.3 Develop and publish energy consumption information for all stakeholder groups to improve energy knowledge and stakeholder capacity to capitalize on energy efficiency opportunities, and to improve The City of Calgary GHG reduction program design				
a) Develop, publish, and promote maps regarding energy consumption for Calgary.	Calgary Building Services		Existing	2018 – 2026
b) Update The City of Calgary energy map to identify developments or districts that could incorporate new district energy systems or expand on existing DE infrastructure.	Calgary Building Services		Existing	2018 – 2019
c) Investigate innovative tools to communicate and understand energy use in Calgary	Environmental & Safety Management		New	2019 – 2022
2.4 Partner with ENMAX and other energy retailers to expand the pilot of providing enhanced billing information to residential customers.	Environmental & Safety Management		New	2019 – 2022

Program 3: On-site and neighbourhood scale renewable and low-carbon energy systems

Why: Local and distributed renewable energy helps to reduce GHG pollution from energy used in buildings and neighbourhoods, and improves local resilience.

Enable the implementation of onsite renewable and low-carbon energy systems on residential, commercial and industrial facilities and land				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
3.1 Develop an approach to ensure large scale developments consider the feasibility of low-carbon energy systems as part of the approvals process including: solar photovoltaic (PV), combined heat and power and district energy (and other technologies where appropriate)	Community Planning and		New	2019 – 2026

	Corporate Analytics & Innovation			
3.2 Support implementation of solar PV				
a) Continue to advocate for changes to provincial and federal policies to support on-site solar PV installations	Environmental & Safety Management		New	ongoing
b) Adjust Land-use Bylaw rules to further enable deployment of solar PV systems and advances in solar technology	Calgary Growth Strategies		Existing	2018 – 2019
c) Develop and implement policy approaches in collaboration with provincial and federal governments and industry to increase solar PV implementation including, for example, solar-ready requirements and planning approaches to optimize solar orientation.	Environmental & Safety Management		Existing	2019 – 2026
3.3 Support implementation of district energy systems				
a) Implement tools and approaches to support connection to new and existing district energy systems that deliver GHG savings	Community Planning and Environmental & Safety Management and		Existing	2019 – 2026
b) Develop a long-term District Energy Strategy for both downtown and high-density developments	Environmental & Safety Management and Community Planning		New	2019 – 2020
3.4 Support implementation of combined heat and power (CHP)				
a) Clarify federal and provincial CHP rules, regulations and policies to enable the development of municipal policy leading to more rapid integration of CHP into both The City and private facilities	Environmental & Safety Management		New	
Support alternate ownership models for renewable and low carbon energy systems				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
3.5 Support community ownership of renewable energy generation				
a) Develop models for supporting community ownership and initiate a pilot project to test application	Environmental & Safety Management		New	2022 – 2026

Theme: Land-use and Transportation

Program 4: Electric and low emissions vehicles

Why: Transportation emissions account for one third of Calgary's transportation emissions. Fuel switching for vehicles for both privately-owned and commercial fleets is the most significant opportunity to reduce emissions in the transportation sector. Electric vehicles (EV) seem to be the leading technology for privately-owned vehicles, whereas commercial fleets may shift to renewable diesel, renewable CNG or electric.

Support and enable the uptake of electric vehicles				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
4.1 Partner with the private sector and other government agencies to implement local and regional EV charging infrastructure				
a) Participate in the planning and development of a privately owned-and-operated southern Alberta EV Fast Charging Network	Environmental & Safety Management		Existing	2018 – 2020
b) Partner with private sector companies to expand Level 2 and fast charging public charging stations at City or civic partner facilities	Environmental & Safety Management		Existing	2018 – 2020
c) Evaluate the need for publicly accessible charging infrastructure that is inclusive of all mobility choices such as electric bikes, and if appropriate, incorporate such charging infrastructure with other charging locations at The City's facilities	Environmental & Safety Management		Existing	2019 – 2022

4.2 Work with the private sector and non-profit organizations to develop an electric vehicle education program for the general public and businesses				
a) Develop web-based and in-person educational programs and materials about electric vehicles and charging options for the general public and businesses	Environmental & Safety Management		New	2018 – 2020
b) Explore the creation of an Electric Vehicle Showcase Centre, in partnership with the private sector, to provide the public and businesses with a hands-on opportunity to learn about and test drive electric vehicles	Environmental & Safety Management		New	2023 – 2026
4.3 Collaborate with the City of Edmonton, Province, local development industry and utility companies to identify and analyze options to improve access to home charging for electric vehicles				
a) Create an EV Readiness best practices website/program for new residential buildings and retrofits	Environmental & Safety Management		New	2018 – 2019
b) Analyze and implement potential cost-effective EV Ready requirements (e.g. empty conduit, spare electrical capacity) for new single-family homes, multi-family residential and commercial buildings, building on best practices from other jurisdictions	Environmental & Safety Management		New	Analyze 2018 – 2020 Implement 2020 – 2022
c) Design and pilot potential options for publicly accessible community charging hubs in locations where home charging is not an option	Environmental & Safety Management		New	Analyze 2018 – 2020 Pilot 2020 – 2022
4.4 Monitor and provide input to new electric vehicle policies and regulations developed by other orders of government				
a) Participate in Federal and Provincial electric vehicle working groups to guide policy direction	Environmental & Safety Management		Existing	Ongoing
b) The City should also continue discussions around the likely decline in gas taxes with the Provincial and Federal governments to ensure stable or alternate funding for high priority transportation network investments in the future.	Transportation Planning		New	2023 – 2026
c) Explore and, if appropriate, advocate for the development of a vehicle scrappage program that encourages decommissioning of older, higher emission vehicles	Environmental & Safety Management		New	2023 – 2026
4.5 Streamline municipal and utility processes to support public and private electric vehicle projects, and reduce barriers				
a) Amend policies and bylaws to better enable businesses to install and operate Level 2 and fast charging stations, and associated facilities	Environmental & Safety Management		Existing	2019 – 2020
b) Streamline information sharing between The City and ENMAX on electrical permit approvals for new EV chargers to enable ENMAX to proactively plan infrastructure upgrades	Environmental & Safety Management		Existing	2018 – 2019
c) In collaboration with ENMAX and other stakeholders, advocate to the Province for development of new electricity rate codes designed to support fast charging for passenger and fleet vehicles	Environmental & Safety Management		Existing	2018 – 2020
d) Partner with taxi, car-sharing and ride-sharing companies to increase the percentage of electric vehicles in their fleets	Environmental & Safety Management		New	2019 – 2026
4.6 Partner with post-secondary institutions and the private sector to advance research and field testing of low emission technologies, supporting infrastructure and policy direction				
a) Engage in research to understand short and medium-term public charging infrastructure requirements, in response to growing electric vehicle adoption and technology advancements	Environmental & Safety Management		New	Ongoing
b) Continue to monitor developments in hydrogen fuel cell vehicles and fueling infrastructure to determine if it could become an affordable and verified low-carbon transportation option in the future	Environmental & Safety Management		Existing	Ongoing

Support and enable the uptake of low emissions vehicles in commercial fleets				
Actions	Action Lead Business Unit	Funding	Status	Timeframe

4.7 Monitor and provide input to new medium and heavy-duty low emission vehicle policies and regulations developed by other orders of government				
a) Participate and/or play a coordinating role in Federal, Provincial and Calgary Growth Management Board goods movement working groups to guide policy direction	Environmental & Safety Management		Existing	Ongoing
b) Participate in pilot projects with other orders of government and/or the private sector to test energy efficiency and alternative fuel technologies and/or share data from completed studies	Environmental & Safety Management		New	2023 – 2026
4.8 Develop a program to support the assessment alternative fuel technologies (e.g. renewable natural gas, electric hybrids, etc.) for commercial vehicle fleets, and provide educational information about emerging regulations from other orders of government	Environmental & Safety Management		New	2023 – 2026
4.9 Partner with post-secondary institutions to advance Calgary-specific research into goods movement GHG reduction and energy efficiency actions and supportive policies				
a) Support studies to identify and prioritize actions municipalities and/or the private sector can take to reduce fuel use and GHG emissions from the trucking sector	Transportation Planning		Existing	Ongoing
b) Monitor developments in hydrogen fuel-cell technology and fueling infrastructure to determine if it could become a viable and affordable alternative low-carbon fuel source for medium and heavy-duty fleets in the future	Environmental & Safety Management		Existing	Ongoing

Program 5: Low or zero-emissions transportation modes (for information)

Why: Shifting Calgarians out of single-occupancy vehicles to lower or no emissions transportation modes is a key opportunity to reduce emissions. This strategy could encompass actions to directly shift Calgarians out of vehicles, or could more indirectly achieve this strategy through the development of higher-density complete communities. This program area is about implementing the already Council approved direction within the Step Forward, Cycling Strategy, Complete Streets and RouteAhead strategy.

Enable increased walking and cycling			
Actions	Action Lead Business Unit	Funding and Status	Timeframe
5.1 Continue to implement Step Forward, the Cycling Strategy and Complete Streets	Transportation Planning	Funding and status consistent with previous council direction	Ongoing
5.2 Enhance the safety and accessibility of walking and cycling for all citizens			
a) Improve accessibility and accommodation of walking and cycling to LRT and BRT stations	Transportation Planning		Ongoing
b) Expand pedestrian infrastructure along Primary Transit Network, and complete missing links in TODs, Main Streets and high intensity industrial areas	Transportation Planning		Ongoing
c) Enhance safety and accessibility for walking and cycling through infrastructure and service improvements (e.g., improved lighting)	Roads, Transportation Planning		Ongoing
d) Implement safe routes to school programs (infrastructure upgrades, education, collection of baseline data) to reduce congestion/emissions and increase safety	Transportation Planning		Ongoing
e) Enable multi-modal travel by installing bike racks on all new transit vehicles	Calgary Transit		Ongoing
f) Improve wayfinding, starting in Centre City (including Plus 15s), Business Improvement Areas and local communities	Transportation Planning, Urban Strategies		Ongoing
g) Twin pathway system in priority areas to support all modes safely	Parks, Transportation Planning, Urban Strategies		Ongoing
5.3 Support the utilization of new and innovative bicycle technologies and programs			
a) Evaluate and address the legislative implications for e-bikes and other active modes options to allow legal and safe use on city streets and pathways	Transportation Planning	Funding and status consistent with previous council direction	Ongoing
b) Support third party implementation of bike-sharing systems in Calgary	Transportation Planning		Ongoing

Enable increased use of Calgary Transit			
Actions	Action Lead Business Unit	Funding and Status	Timeframe
5.4 Continue to implement the RouteAhead 30-year strategic plan for Calgary Transit			
a) Achieve the operating targets from RouteAhead, subject to Council approvals	Calgary Transit	Funding and status consistent with previous council direction	Ongoing
b) Implement and support rapid transit corridors (e.g. BRT / LRT) as defined in RouteAhead	Calgary Transit & Green Line		Ongoing
c) Improve Transit customer amenities (e.g. shelters, mobile ticketing, etc.) to enhance customer experience	Calgary Transit		Ongoing
5.5 Coordinate with regional transit partners to make transit service a more viable choice for regional travel	Calgary Transit		Ongoing
5.6 Enable transit oriented development (TOD) along the Green, Red and Blue LRT lines	Planning & Development, Real Estate & Development Services		Ongoing
5.7 Increase implementation of transit priority and yield-to-bus measures	Calgary Transit		Ongoing

Enable increased use of ride-sharing, car-pooling, or working from home			
Actions	Action Lead Business Unit	Funding and Status	Timeframe
5.8 Support businesses and the development industry to implement transportation demand management (TDM) plans in new and existing communities or buildings	Transportation Planning	Funding and status consistent with previous council direction	2019 – 2026
5.9 Monitor demand for loading or special parking zones for commercial vehicles as well as demand for special parking zones for rideshare services	Transportation Planning, Calgary Parking Authority		Ongoing
5.10 Pilot partnerships with alternative mobility providers to provide mobility services	Calgary Transit		2018 – 2022
5.11 Develop a high occupancy vehicle (HOV) Strategy to support high-occupancy vehicles and buses, as well as consideration of electric vehicles	Transportation Planning		2019 – 2022

Program 6: Land-use and Transportation Planning

Integrate climate change mitigation considerations into land-use and transportation strategies, plans, processes and decisions				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
6.1 Incorporate policies regarding greenhouse gas reductions and climate risks that may impact land use development and transportation infrastructure or services into the update of the Municipal Development Plan and Calgary Transportation Plan	Calgary Growth Strategies Transportation Planning		Existing	2018 – 2021
6.2 Develop methodologies to integrate GHG reduction potential into growth management decisions and transportation assessments	Calgary Growth Strategies and Transportation Planning		New	2018 – 2020
6.3 Investigate the impact of disruptive transportation technologies on Calgary's transportation GHG emissions	Transportation Planning		Existing	2018 – 2020

Theme: Waste and Consumption

Program 7: Overall consumption and waste reduction

Why: Consumption-based emissions (scope 3) have not been quantified or included in previous climate mitigation plans. However, this is a growing area of focus in leading municipalities, and based on initial research has the potential to represent a significant portion (up to 1/3) of Calgary's overall emissions.

Reduce total waste generation in the residential and commercial sectors				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
7.1 Quantify the composition, scale and impact of consumption and waste on GHG emissions in Calgary				
a) Develop a recommended methodology to categorize and quantify consumption-based emissions, and integrate results into annual GHG emissions reporting	Environmental & Safety Management		Existing	2019 – 2020
b) Conduct a waste composition study between 2018 and 2020 to identify specific waste types or sectors to target for reductions	Waste & Recycling Services		Existing	2018 – 2020
7.2 Implement a “pay-as-you-throw” black cart program for residential waste collection to encourage residents to reduce their garbage and divert appropriate material to recycling and food and yard waste programs	Waste & Recycling Services		Existing	2019 – 2022
7.3 Investigate options and develop a strategy for significantly reducing avoidable plastic waste and single-use items	Waste & Recycling Services		New	2019 – 2022
7.4 Work with the province to move forward extended producer responsibility regulations	Waste & Recycling Services		Existing	2019 – 2022
7.5 Focus on waste reduction in education programs for waste management.	Waste & Recycling Services		New	2019 – 2022

Improve access to local food				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
7.1 Review CalgaryEATS! Food Action Plan with enhanced climate resilience lens and develop a Food Resilience Plan	Calgary Growth Strategies		Existing	2018 – 2022
7.2 Conduct systems level research on climate impacts across range of food system activities and identify critical linkages among system components and processes	Calgary Growth Strategies		Existing	2018 – 2022
7.3 Work with Provincial and Federal Governments and private sector on a multi-level approach to climate programs and policies as it relates to food systems	Calgary Growth Strategies		Existing	ongoing
7.4 Raise awareness of and address food loss and waste to reduce wasted food (i.e. reduce pre-consumer food waste)	Calgary Growth Strategies		Existing	ongoing
7.5 Promote urban and regional food production and support farmers through programs and policy (including land use planning policy)	Calgary Growth Strategies		Existing	ongoing
7.6 Review and update The City and institutional food procurement policies	Calgary Growth Strategies		Existing	2018 – 2022
7.7 Support the regionalization and diversification of food supply chains	Calgary Growth Strategies		Existing	ongoing

Program 8: Waste management to minimize greenhouse gas emissions

Why: Methane is an extremely potent greenhouse gas generated by Calgary’s waste management and wastewater facilities that is reported annually in Calgary’s GHG Inventory. In addition to existing mitigation efforts to reduce the environmental risk of these emissions, further reduction of organic waste disposed of in the landfills can minimize methane generation

Divert organics from landfills				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
8.1 Continue to educate and support Calgarians to divert organic waste away from landfills through the residential Green Cart Program, the disposal surcharge rates at The City landfills, and as required for all industrial, commercial, and industrial organizations under The City’s bylaws.	Waste & Recycling Services		Existing	2019 - 2022

Theme: Natural Infrastructure

Program 9: Green spaces and natural areas to support mitigation

Why: The greenhouse gas impact of the disruption of our natural system has not been previously included in Calgary's GHG mitigation plans. It is increasingly becoming an important area for consideration, as the conservation of natural areas, the restoration of disrupted systems, and the types of develop we permit in our city will directly impact the potential of these systems to act as a carbon sink, and to provide other environmental benefits.

Green spaces and natural areas to support mitigation				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
9.1 Develop a methodology to quantify the value of natural systems (i.e., parks, riparian areas, natural areas, urban forest, etc.) as a greenhouse gas sink, and incorporate into our annual GHG inventory reporting.	Environmental & Safety Management		New	2019 – 2022
9.2 Develop a formal working group to increase understanding of The City's natural assets for City staff and external stakeholders, including the integration of climate change mitigation considerations.	Environmental & Safety Management		New	2019 – 2022
9.3 Incorporate the value of natural systems as a greenhouse gas sink into triple bottom line analysis and other business processes where necessary.	Water Utility		New	2019 – 2026
9.4 Incorporate climate change mitigation considerations into existing strategies				
a) Include the use of natural systems for climate change mitigation as part of the Stormwater Management Strategy	Water utility		New	2019 – 2022
b) Include the use of natural systems for climate change mitigation as part of the implementation of the Biodiversity Strategy	Parks		New	Ongoing
c) Include the use of natural systems for climate change mitigation as part of the Urban Forestry Strategy	Parks		New	Ongoing
9.5 Remove regulatory policy barriers that prevent the effective conservation of wetlands in the city	Parks		Existing	Ongoing
9.6 Continue to promote the restoration of native habitat and naturalization of existing open space to augment the ability of Parks and Open Spaces to sequester carbon	Parks		Existing	Ongoing
9.7 Collaborate with the Province to develop a carbon offset program for natural systems	Environmental & Safety Management		New	2019 – 2022

Theme: Cross-cutting Programs

Program 10: The City of Calgary as a leader in climate change mitigation

Why: The City has a responsibility to “walk the talk” on climate change mitigation. We cannot expect citizens, business or other stakeholders to take action without demonstrating our commitment to action. Leadership actions are imbedded in the preceding strategy and program areas. This leadership strategy is focused on improving The City's communication and engagement on climate change mitigation, as well as increasing the knowledge and capacity of citizens to take action. The City is not able to achieve our climate change mitigation targets on our own. This strategy is designed to improve collaboration opportunities between The City and the private sector. This could include implementing and raising the profile of pilot projects, and creating structures to invite industry collaboration.

Lead by example in our own operations				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
10.1 Demonstrate leadership in the construction, operations, and maintenance of City-owned buildings, facilities, infrastructure and fleet to minimize GHG emissions (i.e., CO ₂ and methane)				
a) Continue to implement the recommendations of the Corporate Energy Plan (2016 – 2026)	Corporate Analytics & Innovation		Existing	ongoing
b) Continue to implement the recommendations of the Transportation Energy Management Plan	Transportation and Corporate Analytics & Innovation		Existing	ongoing
c) Implement the recommendations of the Water Energy Management Strategy	Water Utility		Existing	ongoing
d) Develop and implement Utilities and Environmental Protection Resource Recovery Strategy	Water Utility		Existing	2018 – 2022
10.2 Demonstrate leadership by installing low-carbon and renewable energy systems at The City facilities and land				

a) Install photovoltaic panels at City facilities that can make use of electricity on site. 34 City facilities have been identified in the Corporate Energy Plan as having potential for hosting 25 MW+ of installed capacity.	Corporate Analytics & Innovation		Existing	2018 – 2026
b) Expand renewable energy generation on industrial brownfields and other suitable sites (including City-owned land)	Corporate Analytics & Innovation		Existing	2018 – 2026
c) Pursue district energy heating in partnership with ENMAX as service provider at locations that support a distributed network. The best potential sites include occupational work centres, high density transit nodes, and campus areas.	Corporate Analytics & Innovation		Existing	2018 – 2026
d) Install heat and power generation at City facilities that can make use of both thermal energy and electricity on site. 11 Recreation facilities have been identified with good potential for hosting 1 Mega-watt (MW) of installed capacity. Recreation and Calgary Transit have already installed 1 MW of on-site generation.	Corporate Analytics & Innovation		Existing	2018 – 2026
e) Maximize the potential of biogas produced at wastewater treatment plants to generate electricity and thermal energy on site. Additional generation capacity should be pursued where possible. A net zero energy facility is an ambitious but achievable long-term goal. Water Services is currently developing this resource.	Corporate Analytics & Innovation and Water Resources		Existing	2018 – 2026
f) Explore opportunities to convert landfill gas to usable energy	Waste & Recycling Services		New	2019 – 2022
10.3 Update the Corporate Energy Plan to fully integrate corporate GHG management, and establish a Corporate Energy and Emissions Plan.	Environmental & Safety Management and Corporate Analytics & Innovation		Existing	2018 – 2022
10.4 Evaluate and incorporate fully-electric, electric hybrid, and other low carbon vehicle technologies into City fleets and facilities				
a) Evaluate the value of incorporating low carbon vehicles and buses into The City's fleets through study and a possible technology pilots and identification of supportive grant funding	Corporate Analytics & Innovation Support: Calgary Transit, Fleet Services, Waste & Recycling Services		Existing	2018 – 2022
b) Incorporate EV-ready design standards, such as empty conduit and electrical system expansion capacity, into the Sustainable Building Policy for City facilities	Corporate Analytics & Innovation		Existing	2018 – 2020
c) Develop EV-ready specifications for the development of Green Line park & ride facilities, and any existing park & ride facilities that undergo transit-oriented development	Calgary Transit & Green Line		New	2018 – 2022

Become a trusted source for Calgarians to access leading climate change mitigation information and education				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
10.5 Develop and implement a comprehensive climate change education program				
a) Develop and implement a comprehensive climate change education plan	Environmental & Safety Management		Existing	2018 – 2019
b) Update and enhance the Calgary.ca climate change website to include key information for citizens, links to resources, and Calgary-specific citizen stories of climate change impacts and actions.	Environmental & Safety Management		Existing	2018 – 2019
c) Establish a neighbourhood-scale climate change program to increase the education and awareness of Calgary neighbourhoods of the local impacts of climate change, and the possible actions individuals and communities can take to mitigation and adapt to climate change.	Environmental & Safety Management		New	2019 – 2022
d) Install public energy consumption displays at City facilities. Priority should be placed on facilities with renewable energy systems.	Corporate Analytics & Innovation		New	2019 – 2022
10.6 Integrate climate change messages into existing City of Calgary public education programs.				
a) Elevate climate change to be a primary theme in the EcoLeaders program and in the Mayor's Environment Expo, and make the link between the student's programs and the City's climate change targets.	Environmental & Safety Management		Existing	2019 – 2022

10.7 Establish targeted and relevant communications materials for key stakeholder groups.	Environmental & Safety Management		Existing	2018 – 2019
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Establish support and resources to enable innovation and collaboration by citizens, businesses, and other stakeholders				
Actions	Action Lead Business Unit	Funding	Status	Timeframe
10.8 Develop and implement a public engagement plan to support the implementation of the Climate Resilience Strategy, the Climate Mitigation Plan and the Climate Adaptation Plan	Environmental & Safety Management		New	2018 – 2019
10.9 Establish resources to enable citizens to take action				
a) Develop a climate change toolkit for neighbourhoods. This toolkit should be adapted for various audiences including low-income, affordable housing, new immigrant communities, students and First Nations.	Environmental & Safety Management		New	2018 – 2019
b) In partnership with stakeholders develop energy conservation, efficiency and renewable energy workshops.	Environmental & Safety Management		New	2019 – 2022
c) Establish a community climate change micro-grant program to support neighbourhood-scale climate change actions.	Environmental & Safety Management		New	2019 – 2022
10.10 Develop a program to support large industrial energy users				
a) Identify largest commercial, industrial and institutional users of energy in Calgary	Calgary Building Services		Existing	Ongoing
b) Develop a program for support and assistance with efficiency and GHG reduction projects	Environmental & Safety Management		New	2019 – 2022
c) Implement program	Corporate Analytics & Innovation and Environmental & Safety Management		New	2019 – 2022
10.11 Establish a structure and resources to enable innovation between The City and the private sector				
a) Collaborate with the private sector to establish a mechanism to pilot innovative GHG reduction projects, particularly those that do not fit within the existing City policy framework.	Calgary Approvals Coordination and Environmental & Safety Management		New	2018 – 2022
b) Provide process support to development projects that aim to achieve the highest levels of energy innovation, performance and GHG reduction.	Planning and Development (all business units) Lead - Calgary Approvals Coordination		Existing	2018 – 2026

Buildings and Energy Systems

Program 1: Energy Performance Standards

Improve building performance requirements beyond current building code

Action 1.1

Support the implementation of energy step codes for new buildings

Calgary Building Services

Action 1.2

Prepare Calgary for the implementation of a retrofit building code

Calgary Building Services

Investigate incentives

Action 1.3

Investigate policy approaches to provide monetary and nonmonetary incentives to improve building performance.

Environmental & Safety Management
Calgary Building Services

Enable innovative financing mechanisms

Action 1.4

Enable innovative financing mechanisms to fund improved energy performance.

Environmental & Safety Management

Program 2: Energy Consumption Information

Action 2.1

Develop a residential building labelling program for Calgary

Environmental & Safety Management

Action 2.2

Develop a commercial building benchmarking program for Calgary

Environmental & Safety Management
Corporate Analytics & Innovation

Improve energy literacy and capacity building

Action 2.3

Develop and publish energy consumption information for all stakeholder groups to improve energy knowledge and stakeholder capacity to capitalize on energy efficiency opportunities, and to improve The City GHG reduction program design.

Environmental & Safety Management
Calgary Building Services

Action 2.4

Partner with ENMAX and other energy retailers to expand the pilot of providing enhanced billing information to residential customers

Environmental & Safety Management

Program 3: Renewable and Low-carbon Energy Systems	
Enable the implementation of onsite renewable and low-carbon energy systems	
Action 3.1	
Develop an approach to ensure large scale developments consider the feasibility of lowcarbon energy systems as part of the approvals process including: solar photovoltaics, combined heat and power, and district energy (and other technologies where appropriate)	Community Planning Corporate Analytics & Innovation
Action 3.2	
Support the implementation of solar photovoltaics	Environmental & Safety Management Calgary Growth Strategies
Action 3.3	
Support the implementation of district energy systems	Community Planning Environmental & Safety Management
Action 3.4	
Support the implementation of combined heat and power	Environmental & Safety Management
Support alternative ownership models for renewable and low carbon energy systems	
Action 3.5	
Support community ownership of renewable energy generation	Environmental & Safety Management

Program 4: Electric and Low-Emissions Vehicles	
Support and enable the uptake of electric vehicles	
Action 4.1	
Partner with the private sector and other government agencies to implement local and regional electric vehicle charging infrastructure	Environmental & Safety Management
Action 4.2	
Work with the private sector and non-profit organizations to develop an electric vehicle education program for the general public and businesses	Environmental & Safety Management
Action 4.3	
Collaborate with the City of Edmonton, the Province, local development industry and utility companies to identify and analyze options to improve access to home charging for electric vehicles	Environmental & Safety Management

Action 4.4	
Monitor and provide input to new electric vehicle policies and regulations developed by other orders of government	Environmental & Safety Management
Action 4.5	
Streamline municipal and utility processes to support public and private electric vehicle projects and reduce barriers	Environmental & Safety Management
Action 4.6	
Partner with post-secondary institutions and the private sector to advance research and field testing of low emission technologies, supporting infrastructure and policy direction	Environmental & Safety Management
Support and enable the uptake of low emissions vehicles in commercial fleets	
Action 4.7	
Monitor and provide input to new medium- and heavyduty low emission vehicle policies and regulations developed by other orders of government	Transportation Planning
Action 4.8	
Develop a program to support the assessment of alternative fuel technologies for commercial vehicle fleets, and provide education information and emerging regulations from other orders of government	Environmental & Safety Management
Action 4.9	
Partner with post-secondary institutions to advance Calgary-specific research into goods movement GHG reduction and energy efficiency actions and supportive policies	Environmental & Safety Management

Program 5: Low or Zero-emissions Transportation Modes	
Enable increased walking and cycling	
Action 5.1	
Continue to implement Step Forward, the Cycling Strategy and Complete Streets	Transportation Planning
Action 5.2	
Enhance the safety and accessibility of walking and cycling for all citizens	Transportation Planning Calgary Transit Parks Roads Urban Strategies

Action 5.3	
Support the utilization of new and innovative bicycle technologies and programs	Transportation Planning
Enable increased use of Calgary Transit	
Action 5.4	
Continue to implement the RouteAhead 30-year strategic plan for Calgary Transit	Calgary Transit
Action 5.5	
Coordinate with regional transit partners to make transit service a more viable choice for regional travel	Calgary Transit
Action 5.6	
Enable transit oriented development along the Green, Red and Blue LRT lines	Planning & Development
Action 5.7	
Increase implementation of transit priorities and yield-to-bus measures	Calgary Transit
Enable increased use of ride-sharing, car-pooling, and working from home	
Action 5.8	
Support businesses and the development industry to implement transportation demand	Transportation Planning
Action 5.9	
Monitor demand for loading or special parking zones for commercial vehicles as well as demand for special parking zones for rideshare services	Transportation Planning Calgary Parking Authority
Action 5.10	
Pilot partner ships with alternative mobility providers to provide mobility services	Calgary Transit
Action 5.11	
Develop a high occupancy vehicle strategy to support high-occupancy vehicles and buses, as well as consideration of electric vehicles	Transportation Planning

Program 6: Land-use and Transportation Planning	
What The City will do	
Action 6.1	
Incorporate policies regarding climate risks and greenhouse gas reductions that may impact land use development and transportation infrastructure or services into the update of the Municipal Development Plan and Calgary Transportation Plan	Calgary Growth Strategies Transportation Planning
Action 6.2	
Develop methodologies to integrate GHG reduction potential into growth management decisions and transportation assessments	Calgary Growth Strategies Transportation Planning
Action 6.3	
Investigate the impact of disruptive transportation technologies on Calgary's transportation GHG emissions	Transportation Planning

Program 7: Consumption and Waste Reduction	
Reduce total waste generation in the residential and commercial sectors	
Action 7.1	
Quantify the composition, scale and impact of consumption and waste on GHG emissions in Calgary	Environmental & Safety Management Waste & Recycling Services
Action 7.2	
Implement a “pay-as-you-throw” black cart program for residential waste	Waste & Recycling Services
Action 7.3	
Investigate options and develop a strategy for significantly reducing avoidable plastic waste and single-use items	Waste & Recycling Services
Action 7.4	
Work with the province to move forward extended producer responsibility regulations	Waste & Recycling Services
Action 7.5	
Focus on waste reduction in education programs for waste management	Waste & Recycling Services
Action 7.6	
Review CalgaryEATS! Food Action Plan with enhanced climate resilience lens and develop a Food Resilience Plan	Calgary Growth Strategies
Action 7.7	
Conduct systems-level research on climate impacts across range of food systems activities and identify critical linkages among systems components and processes	Calgary Growth Strategies
Action 7.8	
Work with Provincial and Federal Governments and the private sector on a multi-level approach to climate programs and policies as it relates to food systems	Calgary Growth Strategies
Action 7.9	
Raise awareness of, and address, food loss and disposal to reduce wasted food	Calgary Growth Strategies
Action 7.10	
Promote urban and regional food production and support farmers through programs and policy	Calgary Growth Strategies
Action 7.11	
Review and update City and institutional food procurement policies	Calgary Growth Strategies
Action 7.12	
Support the regionalization and diversification of food supply chains	Calgary Growth Strategies

Program 8: Waste Management to Minimize Greenhouse Gas Emissions

What The City will do

Action 8.1

Continue to educate and support Calgarians to divert organic waste away from landfills through the Residential Green Cart Program, the disposal surcharge rates at City landfills, and as required for all industrial, commercial, and industrial organizations under The City's bylaws.

Waste & Recycling Services

Program 9: Green Spaces and Natural Areas to Support Mitigation

What The City will do

Action 9.1

Develop a methodology to quantify the value of natural systems (i.e., parks, riparian areas, natural areas, urban forest, etc.) as a greenhouse gas sink, and incorporate into our annual GHG inventory reporting

Environmental & Safety Management

Action 9.2

Develop a formal working group to increase understanding of The City's natural assets for City staff and external stakeholders, including the integration of climate change mitigation considerations

Environmental & Safety Management

Action 9.3

Incorporate the value of natural systems as a greenhouse gas sink into triple bottom line analysis and other business processes where necessary

Water Utility

Action 9.4

Incorporate climate change mitigation considerations into existing strategies

Parks
Water Utility

Action 9.5

Remove regulatory policy barriers that prevent the effective conservation of wetlands in the city

Parks

Action 9.6

Continue to promote the restoration of native habitat and naturalization of existing open space to augment the ability of Parks and Open Spaces to sequester carbon

Parks

Action 9.7

Collaborate with the Province to develop a carbon offset program for natural systems

Environmental & Safety Management

Program 10: The City of Calgary as a Leader in Climate Change Mitigation	
Action 10.1	
Demonstrate leadership in the construction, operations, and maintenance of City-owned buildings, facilities, infrastructure and fleet to minimize GHG emissions by continuing the implementation of the Corporate Energy Plan 2016-2026	Corporate Analytics & Innovation Transportation Department Water Utility
Action 10.2	
Demonstrate leadership by installing low-carbon and renewable energy systems at City facilities and land	Corporate Analytics & Innovation Water Utility
Action 10.3	
Update the Corporate Energy Plan to fully integrate corporate GHG management, and establish a Corporate Energy and Emissions Plan	Corporate Analytics & Innovation Environmental & Safety Management
Action 10.4	
Evaluate and incorporate fully-electric, electric hybrid, and other low carbon vehicle technologies into City fleets and facilities	Environmental & Safety Management Corporate Analytics & Innovation Calgary Transit Fleet Services Waste & Recycling
Become a trusted source for Calgarians to access leading climate change mitigation information and education	
Action 10.5	
Develop and implement a comprehensive climate change education program	Environmental & Safety Management
Action 10.6	
Integrate climate messages into existing City of Calgary public education programs	Environmental & Safety Management
Action 10.7	
Establish targeted and relevant communications material for key stakeholder groups	Environmental & Safety Management
Establish support and resources to enable innovation and collaboration by citizens, businesses, and other stakeholders	
Action 10.8	
Develop and implement a public engagement plan to support the implementation of the Climate Resilience Strategy, the Mitigation Action Plan and the Adaptation Action Plan	Environmental & Safety Management
Action 10.9	
Establish resources to enable citizens to take action	Environmental & Safety Management

Action 10.10	
Develop a program to support large industrial energy users	Environmental & Safety Management Calgary Building Services Corporate Analytics & Innovation
Action 10.11	
Establish a structure and resources to enable innovation between The City and the private sector	Calgary Approvals Environmental & Safety Management
Action 10.12	
Establish a structure to ensure ongoing collaboration between The City, the private sector and academia	Environmental & Safety Management
Action 10.13	
Identify additional funding opportunities to support implementation of actions in the Mitigation Action Plan	Environmental & Safety Management