Attachment 5

Environment and Climate Review

The table below outlines three climate action areas and relevant implications and considerations for applying Council's Climate Resilience Policy (C627A) in light of the findings of the comparative analysis presented in the report, as the City progresses toward implementing the climate goals of The City Plan. These areas are:

- Cost of Climate Resilient Infrastructure and Innovation
- Energy Transition
- Climate Leadership and Funding Options

Cost of Climate Resilient Infrastructure and Innovation	
Policy C627A Intent	Climate Action Implications
Policy C627A and its supporting procedure on building construction requirements incorporate considerations on capital and operational costs.	The City Plan supports climate resilient and emissions neutral buildings that meet the needs of the future climate. Not designing, developing and managing buildings with climate risk in mind will put even more strain on the City's future budgets and the local economy, as research indicates that every $1 invested proactively yields $6 in averted future losses.[1] Policy C627A requires that design processes account for future climate through carbon impact and climate risk and vulnerability assessments in order to inform investment and renewal decisions. The comparative analysis of a Full-Policy Design and Basic Civic Design facilities indicates that Policy C627A has an influence on specific capital costs and their resultant operational costs (i.e. annual energy cost, maintenance cost and system replacement costs), which affect the overall building lifecycle costs. The analysis of the design choice presented for the Full-Policy Design facility in this study shows that compliance with the Policy C627A building procedure requirements does not yield a financial benefit of minimizing operational costs over a 25 year span as intended.

[1]Insurance Bureau of Canada (IBC) and Federation of Canadian Municipalities (FCM)(2020). Investing in Canada's Future: The Cost of Climate Adaptation at the Local Level. Accessed from: https://data.fcm.ca/documents/reports/investing-in-canadas-future-the-cost-of-climate-adaptation.pdf

	Considerations: The comparative analysis reviewed one design option for a Basic Civic Design facility and one design option for a Full Policy Design facility. The lack of alternative design choices limited the exploration of the lifecycle costs of the Policy C627A building procedure requirements, which may have influenced the incremental costs identified. To support a balanced approach in spending, the Administration plans to review Policy C627A in Q2-2026. Part of this review proposes utilizing a sustainable return on investment (SROI) analysis to evaluate the benefits of the building procedure requirements and how Policy C627A could direct needed investment in the development of climate resilient infrastructure and facilities. Further, as resilient infrastructure development accelerates within Canada, through innovation in building materials and technology, along with energy code advancement,[2] project benefits may be realized. These two aspects could support beneficial policy implementation as the policy and code requirements align.
Energy Transition	
Policy C627A Intent	Climate Action Implications
Policy C627A supports reduction in greenhouse gas (GHG) emissions from the City's own buildings to become emission neutral.	The City Plan provides directives for the City to mitigate GHG emissions through various actions. Applying Policy C627A building procedure requirements to City facilities demonstrates the Administration's commitment to urgent GHG emission reduction and a sustainable future, responding to the 2019 climate emergency by pursuing emission neutrality and enhanced energy efficiency. This action supports the Community Energy Transition Strategy and Action Plan (2021), which identifies buildings as crucial for meeting both corporate (2040) and community (2050) carbon

[2]Government of Canada. (March 2025). Build Climate Smart: Codes, Standards and Guidance for Climate Resilience. Housing, Infrastructure and Communities Canada. Accessed from: https://housing-infrastructure.canada.ca/climate-resilience-climatique/codes-standards-normes-guidances-eng.html#standards

	neutrality targets. The importance of energy efficient buildings to Edmontonians was demonstrated by the results of the 2024 annual survey on Climate Change and Energy Perceptions, which indicated that 64% of respondents agreed it is important to them that the buildings in which they work, study, play, and shop are energy efficient.[3] The comparative analysis of the Full-Policy Design and Basic Civic Design facilities over 25 years shows that the Basic Civic Design facility, designed to meet Alberta's minimum energy efficiency standard for non-residential buildings (currently Tier 1 of the National Energy Code of Canada for Buildings 2020), would emit 1898 tonnes of carbon dioxide equivalent (TCO_{2e}). In contrast, the Full Policy Design facility, which is compliant with Policy C627A building procedure requirements, resulted in zero emissions due to its all-electric system supported by on-site solar PV. It also surpassed the Basic Civic Design in energy efficiency through its building envelope choices. These outcomes support the City's 2040 corporate carbon neutrality target. <u>Consideration:</u> As noted previously, the Administration plans to review Policy C627A in Q2-2026 to ensure the planned SROI analysis will support the development of infrastructure and facilities that consider climate, economic and social implications. The review will also serve as a continual improvement opportunity to ensure that Policy C627 and its supporting building procedures continue to provide clear directions on how to proactively decrease GHG emissions and achieve better energy performance when designing climate-resilient infrastructure and facilities. Further, the City does not currently have an internal price on carbon or factors in externality costs

[3] Narrative Research. (2024). Climate Change and Energy Perceptions Report. City of Edmonton. *It is however noted in the survey results that only 32% of respondents would be willing to pay a climate change tax levy to support climate actions. 40% of younger individuals (18-34 years) were willing to have a tax levy for climate actions, while older individuals (55 years and over) were less willing (24%).

	associated with GHG emissions. Implementing an internal price on carbon could support improved assessments on the feasibility and impact of sustainability projects.
Climate Leadership and Funding Options	
Policy C627A Intent	Climate Action Implications
Demonstrating commitment to climate solution leadership in all aspects of city planning, development and business decisions.	To keep pace and support the City Plan's growth priorities, such as having sustainable and resilient communities, significant capital and operating funds are essential for infrastructure development and service delivery. Demonstrable eligibility to access grants and funding programs offered to municipalities for the development of climate-resilient infrastructure varies. Developing higher energy efficiency City buildings allows the City to apply to grants for climate mitigation and adaptation projects, including the construction of new and the retrofitting of existing City-owned buildings, in accordance with several Policy C627A procedures. <u>Consideration:</u> The ability to indicate project readiness through detailed budget and understanding of climate risks decision making can unlock access to funds that support capital-intensive and large-scale projects. An example of successful funding can be seen through the Greener as We Grow project, whereby in 2023, the Government of Canada and City of Edmonton announced $ 47.8 million in federal funding from the Government of Canada's 2 Billion Trees program. This funding continues to enable the City to advance tree planting and naturalization, which support both climate mitigation and adaptation actions.[4] This project provides evidence of institutional capacity to deliver and acts as a strong business case for future funding applications.

[4] City of Edmonton. (November 2024). Climate Strategies Annual Implementation Update 2024: Report. City of Edmonton.

Attachment 5

Linkages to The City Plan:

2.4.2 Ensure public buildings and infrastructure are sustainable and resilient.

2.4.2.1 Manage the impacts of climate change on City assets in the design, maintenance and retrofit of buildings and infrastructure.

2.4.2.2 Enable green energy generation and distribution systems.

2.4.1.3 Pursue emissions-neutral and net-positive infrastructure, buildings and neighbourhoods.

6.4.1.1 Encourage innovation to reduce non-residential process energy and carbon footprint.

6.4.2.1 Align, implement and monitor climate change mitigation and adaptation planning to meet local, national, and international commitments.