

2023-2026 CARBON BUDGET

RECOMMENDATION

That the November 14, 2022, Financial and Corporate Services report FCS01478, be received for information.

Requested Council Action	Information only		
ConnectEdmonton's Guiding Principle	ConnectEdmonton Strategic Goals		
CONNECTED This unifies our work to achieve our strategic goals.	Climate Resilience		
City Plan Values	PRESERVE		
City Plan Big City Move(s)	Greener as we grow	Relationship to Council's Strategic Priorities	Climate adaptation and energy transition
Corporate Business Plan	Managing the corporation		
Council Policy, Program or Project Relationships	<ul style="list-style-type: none"> • City Policy C567 Green Building • City Policy C594 Open Space Policy • City Policy C627 Climate Resilience and related procedures • Community Energy Transition Strategy • Climate Resilient Edmonton: Adaptation Strategy and Action Plan 		
Related Council Discussions	<ul style="list-style-type: none"> • UPE00604, Community Energy Transition Strategy - Annual Update, Executive Committee, June 15, 2022 • FCS01393, Proposed 2023-2026 Capital Budget, City Council, October 31, 2022 		

Executive Summary

- On August 27, 2019, City Council declared a climate emergency, recognizing the urgency of the climate crisis and the need to reduce Edmonton's carbon footprint.
- Edmonton is committed to climate action and protection, through the implementation of two climate strategies: The Community Energy Transition Strategy, Edmonton's greenhouse gas

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emissions (GHG) reduction plan and Climate Resilient Edmonton: Adaptation Strategy and Action Plan, a plan to prepare for changing climate impacts.

- Edmonton has set community greenhouse emission reduction targets of 35 per cent by 2025, 50 per cent by 2030, and being emissions neutral by the year 2050 as defined in the Community Energy Transition Strategy. The City of Edmonton has set a corporate target to be emissions neutral by the year 2040. Corporate emissions represent two per cent of citywide emissions.
- Edmonton's overall carbon deficit continues to grow under the current state; additional municipal funding will have a limited impact to meet emissions targets. Climate change is a collective problem that requires collective action. Climate leadership through reduction of operational emissions must therefore balance with policy, other orders of government and private investment to achieve the targets outlined in the Community Energy Transition Strategy.
- A Carbon Budgeting and Accounting Framework provides a way to measure progress towards the GHG emission targets outlined in the Community Energy Transition Strategy. This first iteration of completing a carbon budget alongside financial budgets provided valuable learnings that will be incorporated into future processes. The City of Edmonton's 2023-2026 Carbon Budget is included as Attachment 1.
- The GHG emissions impacts for each budget request within the proposed 2023-2026 operating and capital budgets (Appendix A of the 2023-2026 Carbon Budget) can be used to inform financial investment decisions. The carbon budget is presented for information to augment capital and operating budget decisions.

REPORT

On August 27, 2019, City Council declared a climate emergency, recognizing the urgency of the climate crisis and the need to reduce Edmonton's carbon footprint. Through discussions in early 2022 Council signaled a commitment to Climate Resilience identifying "Climate Action and Energy Transition" as a goal, focusing on advancing the transition to a low-carbon future and enabling residents, organizations and businesses to take action to preserve the environment.

The City's long-term goals are outlined in two documents: ConnectEdmonton sets the direction for the future and identifies where changes are required. ConnectEdmonton is based on an aspirational vision for Edmonton in 2050 and focuses on four strategic goals for 2019-2028 that require transformational change: Healthy City, Urban Places, Regional Prosperity and Climate Resilience. The City Plan combines a Municipal Development Plan and Transportation Master Plan and includes direction for environmental planning, social planning and economic development. The City Plan's five Big City Moves are bold, transformative priorities that advance ConnectEdmonton's goals and point the way as Administration and City Council deliberately build the city on the journey towards a population of two million Edmontonians. Together, these elements support the strategic direction and the choices to develop the systems and physical networks needed to support the up to two million Edmontonians envisioned for 2050. The Carbon Budget focuses on the ConnectEdmonton

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goal of Climate Resilience, to support the transition to a low-carbon future and The City Plan Big City Move of Greener as We Grow.

The City of Edmonton is committed to climate action and protection, through the implementation of Edmonton's two climate strategies: the Community Energy Transition Strategy, which is the greenhouse gas emissions (GHG) reduction plan, and the Climate Resilient Edmonton: Adaptation Strategy and Action Plan, which is the plan to prepare for changing climate impacts.

Carbon Budget and Accounting Framework

A carbon budget includes annual emission limits, annual emissions and deficits/surpluses (annual emission limit minus annual emissions). The carbon budget aligns with decision-making frameworks used by local governments for capital and operating budgets; frameworks in which investments, costs and benefits are assessed over multiple years and often involve trade-offs based on strategic priorities and available resources. When combined with effective monitoring of emissions, a carbon budget also provides a framework for reporting progress on a consistent basis from year to year.

Central to the success of carbon budgeting is a carbon accounting framework to support both the qualitative and the quantitative tracking and management of GHG emissions throughout the community. The accounting framework is a set of tools that will provide the City with the ability to:

- Estimate GHG emissions or reductions that will result from proposed projects, programs, initiatives or operating processes;
- Provide consistent formulas, factors and assumptions that are aligned with international best practices; and
- Incorporate these estimates into initial proposals and ongoing status reporting, and project completion reports for projects in the City.

The 2023-2026 carbon budget, Attachment 1, will support the transition to a low-carbon city by measuring and reporting progress towards short-term and long-term goals. This will allow Council and Administration to adjust strategies as necessary to achieve the targets outlined in the Community Energy Transition Strategy.

All of the budget requests in the proposed 2023-2026 capital, operating and utility budgets received a qualitative assessment for GHG emissions impacts. Where possible, a detailed quantification of GHG emissions related to each budget request was completed through various methodologies. The GHG emissions impacts for each budget request are included in Appendix A of the Carbon Budget and can be used to help inform financial investment decisions throughout the budget deliberation process.

Not all proposed budget requests were quantified. Some projects are still in the initial planning and strategy stages and there is insufficient project and scope detail to be able to provide a reasonable GHG impact assessment. In other cases, projects were not quantified due to data and quantification limitations. In these instances, data is either unavailable, or the means to quantify is not available at this time. This relates to the maturity of the City and the industry in developing processes to align

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with the carbon budgeting and accounting framework. As projects in initial planning and strategy phases advance, and as the City's processes mature to be able to quantify a wider range of projects, the emissions impacts from financial investment decisions will likely increase.

Carbon budgeting is a new field of work. The City of Edmonton is one of the first municipalities in Canada that is incorporating the Carbon Budget into its financial budgeting process. Through the development and implementation of this new process, Administration gained a better understanding of the work involved to effectively integrate carbon accounting and budgeting into the City's existing processes. This is the first iteration, and the carbon budget will continue to evolve as Administration applies its learnings and as the corporation and process matures.

Carbon Budget and Emissions Reduction Targets

Community

As outlined in the Community Energy Transition Strategy, the City of Edmonton's community emission reduction targets are 35 per cent by 2025, 50 per cent by 2030 (both from 2005 baseline levels) and becoming an emissions neutral community by 2050.

- The community carbon budget, which is the maximum total emissions allowed from 2022 until 2050 for the community to be carbon neutral by 2050, is 176 million tonnes of carbon dioxide equivalents (CO₂e). The community is forecasted to deplete that budget by 2037.
- The 2023-2026 proposed operating and capital budgets include recommendations for funding that will reduce annual GHG emissions by 80,000 tonnes CO₂e by 2050, resulting in total forecasted emissions in 2050 of 12.95 million tonnes CO₂e. In order to be carbon neutral by 2050 the community should have net zero GHG emissions in 2050.

Corporate

The City of Edmonton (the corporation) has set a corporate target to be emissions neutral by the year 2040.

- The corporate carbon budget, which is the maximum emissions allowed from 2022 until 2040 in order for the corporation to be carbon neutral by 2040, is 2.25 million tonnes CO₂e. Based on the current state emissions forecast, the corporate carbon budget would be depleted by 2032.
- The 2023-2026 proposed operating and capital budgets include recommendation for funding that will reduce annual GHG emissions by 12,000 tonnes CO₂e by 2040, resulting in total forecasted emission in 2040 of 169,000 tonnes CO₂e. In order to be carbon neutral the City should have net zero GHG emissions by 2040. This is a high-level estimate and will certainly be impacted by future investment decisions, federal and provincial policies impacting GHG emissions, and growth of the corporation.

Achieving Emission Reduction Targets

Current investments are not enough to achieve reduction targets and action is needed as the carbon deficit continues to grow under the current state. While the City has direct control over corporate

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emissions, it represents only two per cent of citywide emissions, so City investment alone will not make a significant impact.

Climate change is a collective problem that requires collective action and municipal investment will have a limited impact towards meeting the City's emissions targets. Climate solution leadership through the reduction of operational emissions must therefore be balanced with applicable policies, collaboration with other orders of government and private investment to achieve the targets outlined in the Community Energy Transition Strategy.

COMMUNITY INSIGHT

The 2021 Climate Change and Energy Perception Report¹ found that 75 per cent of respondents agree climate change is a concern, and 77 per cent of respondents agreed that immediate action is needed.

Perspectives from Edmontonians regarding the 2023-2026 budget are outlined in the October 31, 2022, Communications and Engagement report CE01489 - Budget 2023-2026 Community Insights. One key theme that emerged from this engagement is that participants are concerned about the future and want the City to set long-term plans that take action to improve environmental sustainability and address impacts of climate change.

Additionally, through engagement on The City Plan and to update the Community Energy Transition Strategy, Edmontonians shared their excitement and desires for a low carbon future. However, there is no clear consensus on actions, approaches and timing.

Administration gathered feedback and input in the development of the Carbon Budget and Accounting Framework through discussions with the Energy Transition Climate Resilience Committee. Overall the committee supported the City's direction with the development of the framework and provided valuable insight into further developing the process.

GBA+

Finding statements from GBA+ research for the City's Energy Transition Strategy include:

- Low-income people and families are disproportionately impacted by climate change because they lack the financial capacity to implement mitigation and adaptation measures in their homes and communities.
- Women, Indigenous, Black and other marginalized people and groups will experience the impacts of climate change more than non-marginalized people and groups.

The University of Alberta completed research² to explore community vulnerability and resilience in Edmonton in 2021. Finding statements from this research include:

- Older adults are at higher risk from weather and air pollution events.

¹ change4climate.ca/story/survey2021

² CitiesIPCC. "Climate Change, Older Adults And Immigrants: Exploring Community Vulnerability And Resilience. Final report," August 31, 2021

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- Social deprivation (limited interaction with society) and material deprivation (limited ability to afford goods and services) affect sensitivity to weather events and air pollution.

Actions to address these findings are outlined in the Community Energy Transition Strategy.

ATTACHMENTS

1. 2023-2026 Carbon Budget