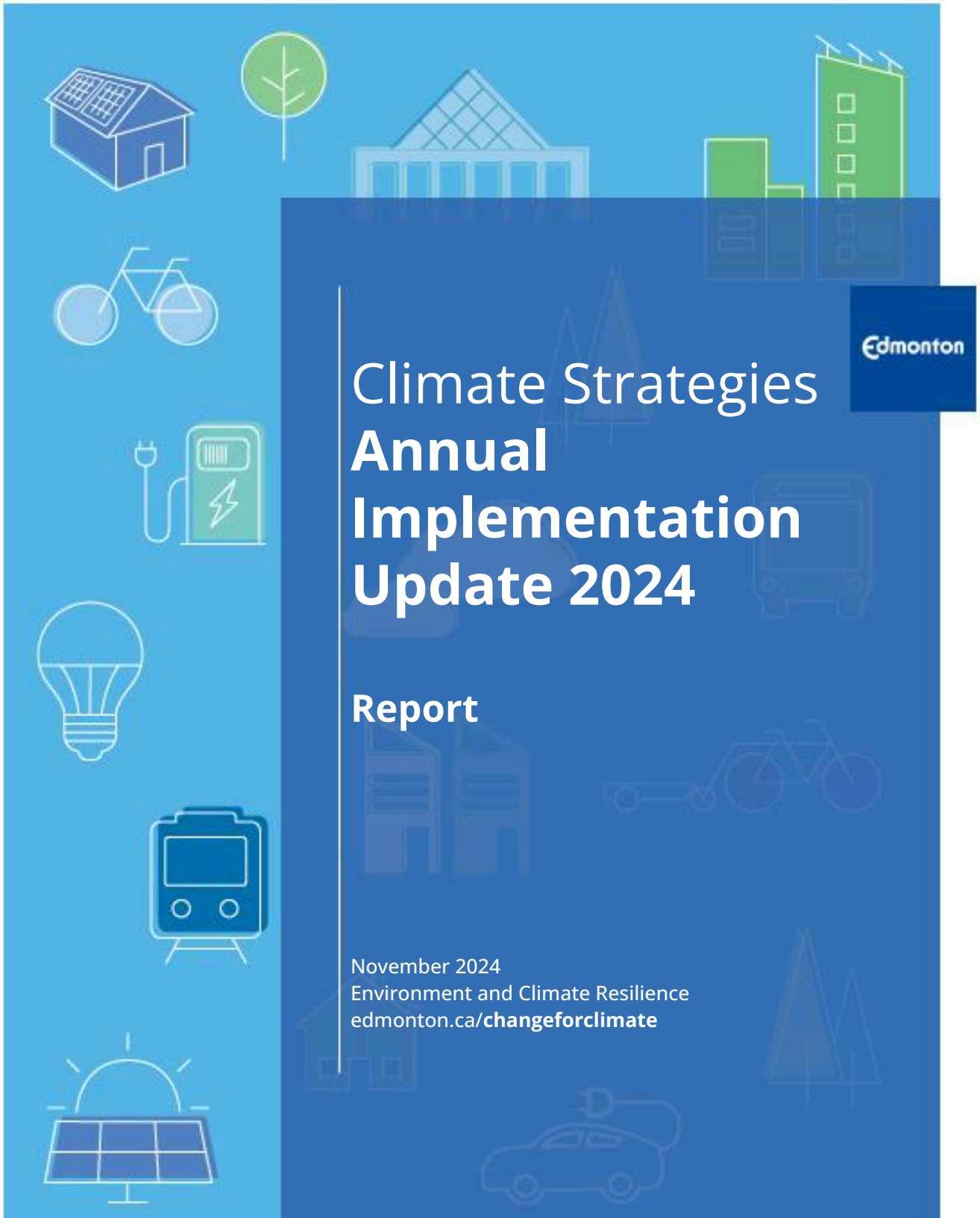

Climate Strategies **Annual Implementation Update 2024**

Report

November 2024
Environment and Climate Resilience
edmonton.ca/**changeforclimate**

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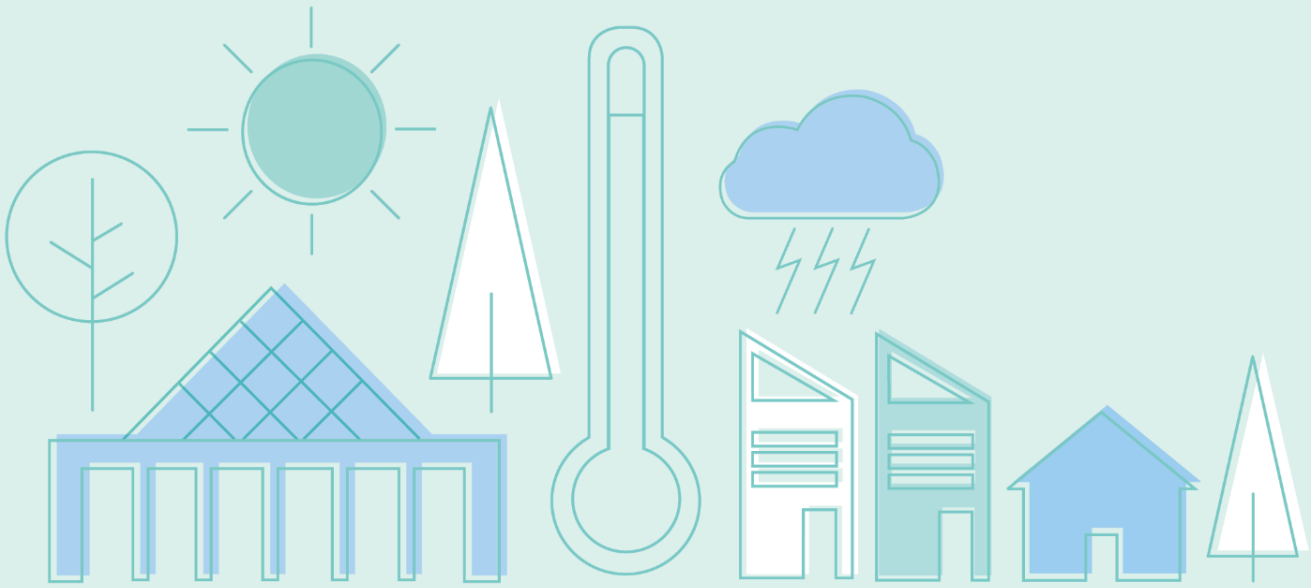


EXECUTIVE SUMMARY

This is a critical decade for deliberate climate action. The decisions made today will set the course for Edmonton's resilience in a changing climate.

Edmonton's climate is changing and The City of Edmonton (the City) is taking action. City Council declared a climate emergency in 2019, signalling the need to reduce greenhouse gas (GHG) emissions and build a more sustainable future. Since then, the City has updated Edmonton's Community Energy Transition Strategy and Action Plan and adopted the Climate Resilient Edmonton: Adaptation Strategy and Action Plan. These strategies chart Edmonton's path to reduce GHG emissions and adapt to climate change risks and impacts.

In 2023-24, the City launched several new initiatives to support the energy transition and build resilience to climate impacts. Highlights include:

- The Neighbouring for Climate program which encourages neighbours to act together to adapt their neighbourhoods to a changing climate while mitigating emissions.
- A permanent Clean Energy Improvement Program providing eligible property owners access to long term financing for energy efficiency and renewable energy upgrades.
- Solar rebates for multi-unit residential buildings.
- A new Zoning Bylaw that enables a more climate resilient city.
- Expansion of Edmonton's tree canopy through the Greener as We Grow Tree-Planting Program.
- Establishment of a Climate Task Force, which consists of Senior Leaders within City Administration to accelerate climate action by integrating environmental considerations into City operations and culture.
- The Valley Line Southeast LRT opening and growing transit service by 96,000 service hours in 2023 and 2024.

The City has made strides in climate action, but is seeing an upward trend in community GHG emissions. Edmonton's 2023 community emissions[1] were 16.2 million tonnes of carbon dioxide equivalent (tCO2e), exceeding the target of 13.4 million tCO2e. The community carbon budget[2] is now forecasted to be depleted in 2036. The top three sectors where emissions have been the highest include transportation, industry and residential buildings in 2023 (Figure 1). This continued trajectory will lead to missed emissions reduction targets and increased climate-related costs. There is a need for a significant shift in how the City plans, designs and builds to achieve a climate-resilient future.

The cost of inaction could be significant, with potential annual costs reaching billions of dollars by the mid-century. Adaptation work has built a solid understanding of climate risks for the community and corporation. Edmonton is warming at a faster rate than the global average and more effort is needed to proactively prepare for a changing climate.

Looking ahead, Edmonton has the opportunity to meet our 2030 and 2050 targets and build a more resilient community. Edmonton's climate goals can be achieved by working together with

[1] Community emissions are the GHG emissions that occur directly within the city's boundary and those associated with producing electricity that is consumed within the city's boundary. They include emissions from many sources such as residences, commercial buildings, vehicles, and industry.

[2] The community carbon budget is the amount of GHG emissions permitted for the municipality of Edmonton based on emission targets over a period of time in alignment with the Paris Agreement.

community members, industry leaders, Indigenous communities, post-secondary institutions, and other levels of government, to develop and implement innovative solutions that will reduce greenhouse gas emissions, enhance climate resilience, and create a more sustainable future for all Edmontonians.

THE NEED FOR LOCAL CLIMATE ACTION

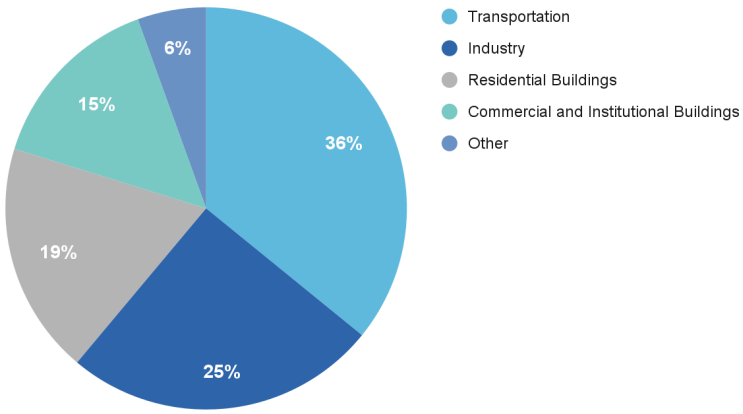
As global temperatures continue to warm, the decisions made today about how we plan, build, and operate our city will set the course for Edmonton's resilience over the coming decades. For every degree of warming, there are significant local economic and social costs. Growing climate risks have clear implications for City resources and assets, the local economy, and the safety and well being of residents. Proactive climate action not only strengthens resilience, but also promotes economic growth, improves public health, and enhances the quality of life for Edmontonians.

While climate action requires a response across all levels of government, municipal governments play a pivotal role in driving effective and localized climate solutions. Cities are major contributors to GHG emissions, being responsible for more than 70 per cent of energy-related carbon dioxide emissions.[3] Dense populations, extensive infrastructure, and social and economic inequalities also combine to increase the sensitivity of cities to climate disruptions; therefore, cities represent the single greatest opportunity for tackling climate change. Municipalities are uniquely positioned to be at the forefront of climate action as they directly influence and implement initiatives that have immediate and tangible impacts on their communities. Municipal governments can implement procedural, policy, and regulatory changes as well as incentives and education, rooted in the local social, economic, and environmental context to build resilience to climate impacts while aligning with federal and global emissions reduction targets.

The *Municipal Government Act,* RSA 2000, c M-26 (MGA) delegates authority to municipalities to govern and direct key areas such as land use planning, public transportation, infrastructure, and emergency management, all of which play a vital role in supporting climate resilience and the energy transition. Through low carbon and resilient land use planning, natural area preservation and nature based solutions, waste reduction programs, and green transportation networks, municipalities have the power to create meaningful and effective change.

Edmonton's City Plan, adopted by Council in 2020, outlines Big City Moves that point the way to deliberately change the city to welcome one million more on the journey towards a population of two million. The City Plan identifies the need for a shift in how Edmonton grows to sustain a healthy, urban, and climate resilient city, and to achieve the target of net zero per-person GHG emissions by 2050. Edmonton's Community Energy Transition Strategy and Action Plan (2021) further defines the City's emission reduction targets with a reduction of community-based net GHG emissions by 35 per cent by 2025 and 50 per cent by 2030, relative to 2005 levels. This Strategy identifies urban development of land, transportation networks, and buildings as major reduction areas, together accounting for up to 47 per cent of the needed emissions reductions. Figure 1 outlines Edmonton's 2023 GHG emissions by sector.

Figure 2.1: Edmonton's 2023 Community GHG Emissions by Sector



[3] Luqman, M., Rayner, P.J. & Gurney, K.R. On the impact of urbanisation on CO2 emissions. *npj Urban Sustain* 3, 6 (2023). https://doi.org/10.1038/s42949-023-00084-2

EDMONTON'S RESPONSE TO THE CLIMATE EMERGENCY

Historical climate records indicate that Edmonton is warming at a faster rate than the global average. Scientists predict that Edmonton will be exposed to higher temperatures, drier summers, more extreme precipitation events, more variable extreme weather events, and an overall warmer and drier climate. Without action, these impacts can exacerbate existing climate pressures on Edmonton's economic, social, infrastructure, and environmental systems.

City Council declared a climate emergency in 2019, signalling the need to take urgent action to reduce GHG emissions and build a more sustainable future. Edmonton's revised Community Energy Transition Strategy and Action Plan (Energy Transition Strategy) approved by City Council in April 2021 and Climate Resilient Edmonton: Adaptation Strategy and Action Plan (Adaptation Strategy) approved by Council in 2020, chart the path forward for Edmonton to both reduce GHG emissions and adapt to climate change risks and impacts.

Edmontonians recognize the urgency of climate action. The 2024 Climate Change and Energy Perception survey revealed that 74% believe we need to act now to address climate change, and 73% are concerned about its impacts. These findings underscore the strong public support for the City's climate initiatives. The survey also revealed that Edmontonians have divided opinions about whether they are willing to pay a tax levy to address climate change. The survey revealed that 32% would agree to pay a tax levy and just under one half (46%) would be unwilling to pay the tax. The survey also revealed that 61% of Edmontonians believe the City should either maintain or increase its efforts to address climate change, and 13% think Edmonton should decrease its efforts.

As part of the work to advance the climate strategies, Council approved $344 million of capital and operating budget that have co-benefits for Energy Transition Strategy and $5.5 million related to Adaptation Strategy over the 2023-2026 budget cycle. This funding has enabled the following climate actions:

- City facility upgrades to become climate resilient and save on energy costs.
- Initial transition of City fleet and equipment to zero emissions.
- Initial implementation of the District Energy Strategy.
- Additional tree planting associated with the Urban Forest Asset Management Plan.
- Increased transit service to grow transit ridership.
- Accelerated Active Transportation infrastructure implementation.
- Funding to support operational changes, policies, programs, and procedures to partially implement the climate strategies.

Since their implementation, Edmonton's Adaptation Strategy and Energy Transition Strategy have successfully initiated or implemented many initiatives working towards reaching the City's climate goals. Some of the key highlights in 2023 and 2024 include:

- Launching the Neighbouring for Climate program to encourage neighbours to act together to adapt their neighbourhoods to a changing climate while mitigating emissions.
- Launching a permanent Clean Energy Improvement Program to provide eligible property owners access to long term financing for energy efficiency and renewable energy upgrades.
- Empowering underserved communities to benefit from the energy transition through a Solar Rebate Program tailored for multi-unit residential properties.

More information on the initiated or completed work on the climate strategies can be found in **Attachment 1**. While we are seeing early progress toward our goals, climate action is a long term effort that requires ongoing commitment. Edmonton's vision for a climate resilient city is achievable, but the continued climate solutions approach will need to be bold and creative.

GHG EMISSIONS AND CLIMATE TRENDS

GHG Emissions Trends for 2023

The Community Energy Transition Strategy outlines targets for a carbon neutral community by 2050 and a carbon neutral corporation by 2040.

The City **reports on two categories of GHG emissions: community emissions and corporate emissions**. Community emissions are broad and include all emissions produced within the city by the community at large: Edmontonians, businesses, organizations, and the City. Corporate emissions are those produced only by City operations and infrastructure. A 2005 baseline is used to measure progress on community and corporate emissions to align with the baseline year adopted by Canada when signing the Paris Agreement.

While progress associated with our initial actions is evident, Edmonton is not on track to achieve its emission reduction targets. Continued and rapid scaling up of low carbon solutions, across a broad range of sectors, will be required. Additionally, if deliberate action is not taken across the corporation, the City will not be on track to meet the goal of a net zero corporation by 2040. Significant advancements need to be made to reduce building and fleet vehicle emissions to achieve this goal. **Attachment 2** provides a detailed breakdown of the community and corporate GHG emissions trends including detailed sector breakdowns and changes over time.

EDMONTON'S 2023 COMMUNITY GHG EMISSIONS

Community Wide GHG Emissions	Community Wide GHG Emissions per Capita
16.2 $MtCO_2e$	14.2 tCO_2e
Change In GHG Emissions from 2005 Baseline	
⇩ 11%	⇩ 44%
Change In GHG Emissions from 2022	
⇧ 3%	⇩ 2%

$MtCO_2e$: million tonnes of carbon dioxide equivalent emissions
tCO2e: tonnes of carbon dioxide equivalent emissions

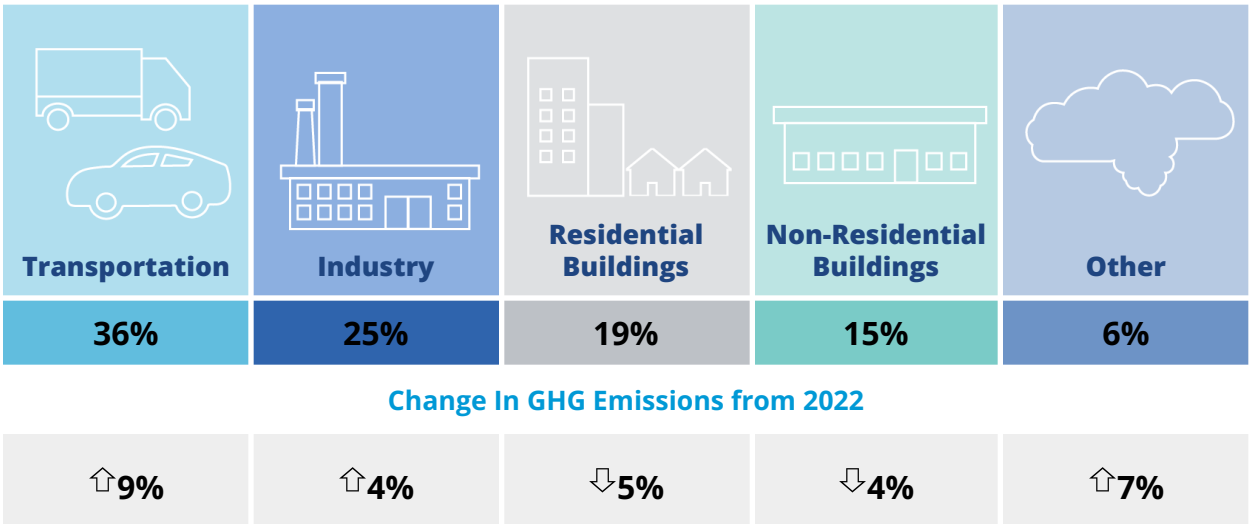
Community GHG Emissions

Edmonton's 2023 Community GHG Inventory shows that total community wide GHG emissions have decreased by 11 per cent from the 2005 baseline. **Our 2023 emissions increased three per cent compared to 2022 levels, continuing an upward trend over the last two years** that requires attention despite overall reductions since the 2005 baseline**.** Based on our current trajectory, Edmonton is not on track to meet the 2025, 2030, and 2050 emissions targets.

Since 2005, Edmonton's population has increased approximately 60 per cent, but our **per capita** GHG emissions have **decreased by 44 per cent since 2005**. Initial indications over the same period show that energy use per capita in Edmonton has decreased by 40 per cent. Additional analysis is underway to better understand this data, and identify any data limitations or uncertainties.

To achieve our goal of net-zero emissions by 2050, there must be a significant downward trend in total community-wide GHG emissions. Transportation emissions comprise the largest proportion (36 per cent) of the total community emissions with industry (25 per cent) and residential buildings (19 per cent) being the next largest sources of emissions for 2023. While the industrial sector has made progress, the transportation sector has increased emissions since the 2005 baseline, and is not trending downward. To help address this challenge, the City is actively investing in and promoting transit and active transportation options, such as cycling and walking infrastructure, recognizing that a shift towards more sustainable modes of transportation is essential to curbing emissions.

EDMONTON'S 2023 COMMUNITY GHG EMISSIONS BY SECTOR



Corporate GHG Emissions

Edmonton's Corporate GHG emissions are generated from the services provided and infrastructure maintained by the City. These emissions account for approximately two per cent of Edmonton's overall emissions. In 2023, net corporate GHG emissions dropped 10 per cent from the previous year, and were 49 per cent below 2005 levels. These reductions have come from various areas. Over the previous five years, emissions from City buildings, transit fleet, and streetlights have decreased, while emissions from the light duty fleet have remained relatively unchanged.

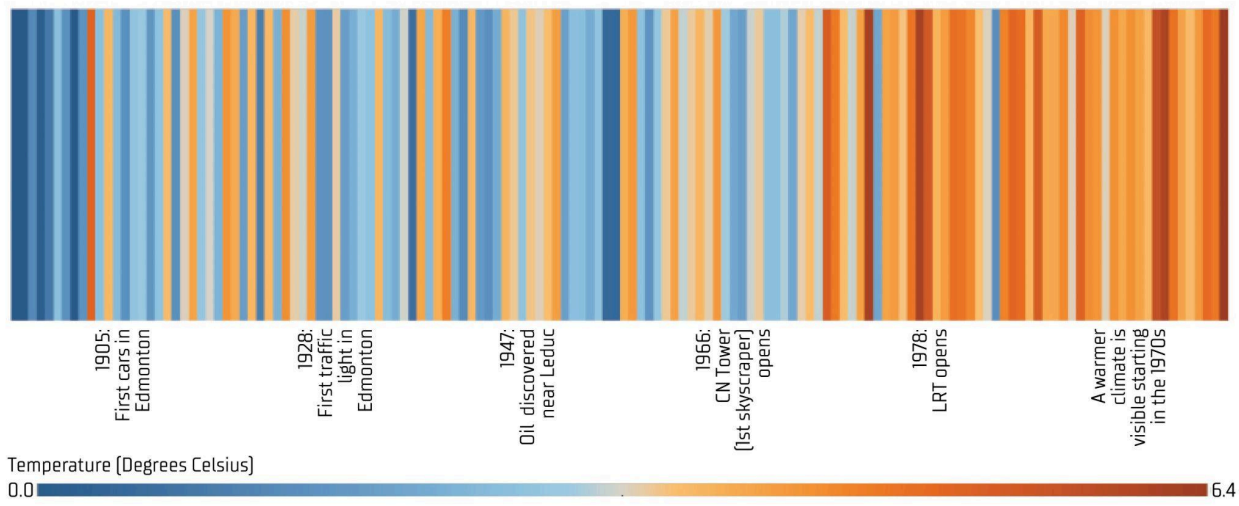
Additionally, corporate emissions have been offset by the purchase of renewable energy certificates, resulting in the offset of all corporate electricity use emissions in 2023 and equating to a reduction of 41 per cent of the 2023 emissions. Further emissions offsetting from corporate trees reduced another one per cent of 2023 emissions. To reach the 2040 target for carbon neutral corporate operations requires another 215,000 tonnes of annual emissions reductions, which equates to 51 per cent of the 2005 emissions baseline.

Climate Impacts

Edmonton's climate is changing and is warming at a faster rate than the global average. The average annual temperature is increasing and 2023 was one of the warmest years in Edmonton's record.

Scientists predict that Edmonton will see higher temperatures, more drought and flooding events, more extreme weather events and an eventual transformation of the local ecosystems. Climate change has caused Edmonton to warm for the past century. Over the last 50 years, Edmonton has been warming at one of the fastest rates in the world. Growing climate risks have implications for City resources and assets, the local economy and the safety and well being of residents.

Figure 2 Edmonton's Average Annual Temperature (Warming Stripes) 1880 to 2023 - Environment and Climate Change Canada



Wildfires and Air Quality

As the climate warms, Edmonton and Alberta are more susceptible to grass and forest fires. Drier temperatures and lightning storms can increase the chances of fires, especially in the surrounding forests. As wildfires burn through forests and grasslands, they produce smoke which can be a major source of air pollution for people. Wildfire smoke may be carried thousands of kilometres from the fire zone meaning smoke can impact air quality in areas close to and far from the wildfire. Smoky air can drift into Edmonton and linger for days, impacting our air quality. This is expected to continue as Canada's changing climate provides ideal conditions for more frequent wildfires and longer wildfire seasons which typically run from early April to late October.[4]

The **2023 wildfire season** (March 1 to October 31) in Alberta saw **1,088 wildfires**, which resulted in approximately **2.2 million hectares burned**. To date **in 2024, 1,137 wildfires have resulted in approximately 707,038 hectares burned**. Edmonton is directly impacted by these wildfires, in deteriorations to local air quality and in providing emergency response and evacuation shelters to those neighbouring Provinces and Territories affected by wildfires.

[4] Alberta Wildfire Status Dashboard, Government of Alberta. https://www.arcgis.com/apps/dashboards/8d86d267dcf44ad085a11939186f3d3a

Between July 23 and August 30 2024, the City provided support to the Jasper residents affected by the wildfire through the activation of the Rapid Emergency Support Terminal (REST). The City mobilized to support the Jasper community with the REST, access to community facilities, and the deployment of Edmonton Fire Rescue Services equipment and personnel.

The REST provided the following support:

- 2,856 Jasper wildfire evacuees registered at the REST
- 1,628 households received accommodation and/or financial supports
- 55 pets were provided temporary pet care
- More than 300 employees worked more than 1,200 shifts at the REST

The Air Quality Health Index (AQHI) is a public health tool that uses a scale from 1 to 10+ to help people understand what the air quality around them means to their health.[5] The higher the number, the greater the health risk associated with the air quality. During extreme pollution events, such as a wildfire smoke event, AQHI levels may reach 7 to 10, indicating High Health Risk, or 10+, indicating Very High Health Risk associated with local air quality. These ratings signify that air quality has deteriorated to levels where immediate health effects are likely, particularly for vulnerable groups such as children, seniors, and individuals with pre-existing respiratory or cardiovascular conditions.[6] The health risk becomes higher as the number increases.

From **May to September 2023, a total of 36 days were recorded with an AQHI higher than 7**, of which **19 days exceeded an AQHI of 10**, indicating extremely poor air quality in Edmonton on those days. From **May to September 2024, a total of 15 days were recorded with an AQHI higher than 7**, of which **13 incidents exceeded an AQHI of 10**. Increased frequencies of poor air quality align with broader climate change impacts, such as rising temperatures and more frequent wildfires, necessitating further analysis to understand and mitigate these growing risks.[7]

Heat Warnings and Waves

Extreme heat poses growing risks to the health of Canadians and is an environmental and occupational hazard. Prolonged exposure to extreme heat can lead to health impacts or even heat related illnesses.[8] Vulnerable populations, including children, the elderly and those with pre-existing health conditions, are at greater risk from extreme heat impacts. Heat impacts on health are worse if high temperatures persist over several days and throughout the night. Elevated nighttime temperatures prevent relief from daytime heat and contribute to additional heat stress.[9]

Heat warnings are issued when two or more consecutive days of daytime maximum temperatures and nighttime minimum temperatures are forecasted to reach 29°C and 14°C, respectively. A heat wave is when actual temperatures on two or more consecutive days of daytime maximum temperatures and nighttime minimum temperatures reach 29°C and 14°C respectively.

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[5] About the Air Quality Health Index. Government of Alberta. Web. https://www.alberta.ca/about-the-air-quality-health-index

[6] Is the Air Quality Affecting Your Health? Fact Sheet. Government of Alberta, https://open.alberta.ca/dataset/304aa0f8-0504-41e7-bfee-bd0bd508d869/resource/22aa7f8f-f212-4a72-8d2d-a83e97e672dd/download/aqhi-airqualityhealth-factsheet-apr2016.pdf

[7] Government of Canada. (2022). Health of Canadians in a Changing Climate: Advancing Our Knowledge for Action. Ottawa, ON: Public Health Agency of Canada. Retrieved from https://publications.gc.ca/collections/collection_2023/sc-hc/H129-128-2022-eng.pdf

[8] Heat Alert and Response Systems to Protect Health: Best Practices Guidebook. Government of Canada

[9] Heat Alert and Response Systems to Protect Health: Best Practices Guidebook. Government of Canada

Records for Edmonton demonstrate that heat waves in recent years are lasting longer than before and are occurring on a higher frequency. Both 2021 and 2024 have observed the longest heat waves on record: 8 days.

When Heat and Smoke Come Together

Wildfire season can coincide with periods of extreme heat which typically occur in the same season as wildfires. When these extreme heat and smoke events coincide, there are increased challenges and risks for people. Vulnerable populations such as children, the elderly and those with pre-existing health conditions, are at greater risk from extreme heat and smoke impacts. During extreme heat events, people are likely to spend more time outside or leave their windows open if they don't have adequate access to cooling, resulting in higher exposure to wildfire smoke.

In addition to heat, increasing wildfire activity across the region contributed to poor air quality on high-temperature days, as smoke from wildfires is a major factor driving AQHI levels above 7 during the summer months. The relationship between extreme heat and poor air quality is most evident in years with prolonged heat waves. During these periods, elevated temperatures can contribute to the formation of ground-level ozone, further reducing air quality and amplifying health risks for vulnerable populations.

For example, in 2024, between July 9th and 25th:

- For **16 days**, the **maximum daily temperature exceeded 25°C**, with 10 days reaching above 30°C.
- Nighttime temperatures during this period remained high, with the **highest minimum temperature of 21.6°C recorded** on July 22nd. The lack of overnight cooling added to the cumulative heat stress on the city.
- Air quality during this period deteriorated significantly, with maximum AQHI values consistently reaching 10+ indicating "very high" or "extreme" health risk levels, for multiple consecutive days. **Between July 19th and July 25th, every single day recorded a maximum AQHI value of 10+**.
- The **back-to-back occurrences** of high temperatures and extreme AQHI values over multiple days were not isolated events, but part of a continuous stretch of poor conditions. This **overlap of heat and poor air quality** would have compounded the environmental stress on the city, making it one of the most severe periods in recent years in terms of both temperature and air quality.

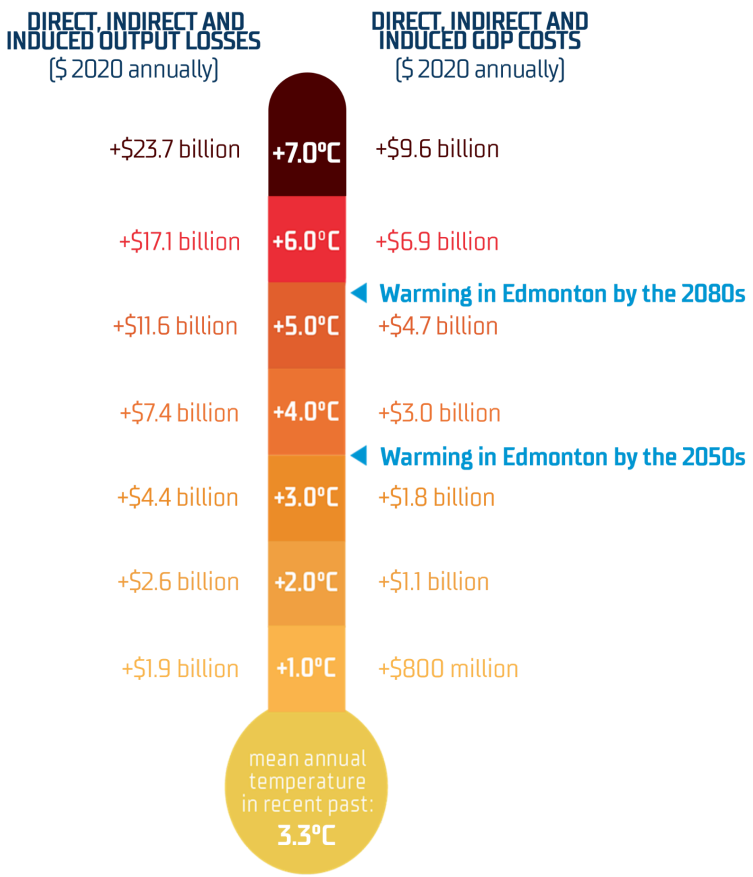
Climate change is expected to have direct physical and mental health impacts, with an additional 22,000 health incidents a year by the 2050s [10]. For the City, climate change will pose increased demands on its buildings for heating and cooling, resulting in potential infrastructure degradation and compromised ability to function and provide a location to escape hazardous conditions during extreme weather events. This could strain City resources, including assets and personnel, and necessitate extended activations of emergency response.

[10] http://edmonton.ca/city_government/city_vision_and_strategic_plan/climate-change-adaptation-strategy

Cost of Inaction

Investing in climate action is a fiscally responsible decision for Edmonton. Not taking deliberate climate action can lead to escalating expenses in the future, including increased costs for emergency response, infrastructure repair and public health crises putting strain on public sector budgets and the local economy. Conversely, research by the Federation of Canadian Municipalities (FCM) shows that proactive investments in resilient infrastructure have a return on investment of $6 in future averted losses for every $1 spent.[11] Investments in resilient infrastructure as well as empowering and preparing local communities to adapt to the changing climate and to reduce risks associated with extreme weather is critical.

A study specific to Edmonton found that climate change could cause direct annual costs of approximately $1 billion as early as the 2040s, and up to $4 billion yearly by the 2070s.[12] These costs are a result of the physical damage and economic disruption caused by a changing climate, such as infrastructure impacts and service disruption. This same study identified that incorporating the annual gross domestic product (GDP) losses due to climate-related impacts on Edmonton could result in a $2 billion annual cost as early as the 2040s and $6 billion annual cost by the 2070s. This economic analysis illustrates that impacts from climate change will have realized economic consequences for Edmonton, and there is a cost that will be incurred on future Edmontonians if global climate action is not taken.



Infrastructure and building losses stand as a clear example of the cost of climate change. As trends in extreme weather events have increased, so too have the trends in insured and uninsured losses.[13] Municipalities and homeowners are increasingly exposed to these losses and the costs associated can result in direct impacts to the affordability of homeownership.

According to the Insurance Bureau of Canada, in 2023, and for the second year in a row, Canada exceeded $3 billion in insured damage from natural catastrophes and severe weather events. Summer storms caused the most damage in Alberta, including damage from hail, tornados, flooding as well as wildfires. In Alberta specifically, between 2020 to 2023, extreme weather resulted in $3.2 billion in insured losses[14] and in 2023 alone, severe weather caused $330 million in property damage in Alberta[15].

[11] IBC and FCM (2020). Investing in Canada's Future: The Cost of Climate Adaptation at the Local Level.
[12] Boyd, R. 2022. Costs of inaction: Economic impacts of climate change on Edmonton.
[13] IBC and FCM (2020). Investing in Canada's Future: The Cost of Climate Adaptation at the Local Level.
[14] CatIQ, 2024
[15] IBC (2024). Severe weather took a toll on homes, businesses and vehicles in Alberta in 2023.

The impacts of a changing climate affects the City as a corporation financially; City infrastructure has to be repaired after extreme weather events and additional support is necessary for at-risk members of the community during these events. In 2023 the City spent $17 million on the Emergency Operations Centre's response to wildfires alone. In the long term, actions to reduce greenhouse gas emissions and create resilience result in financial savings. At the same time, investing in climate action today opens doors to new economic opportunities in the green economy, such as job creation in renewable energy sectors and sustainable urban development. By continuing to invest in climate action today, Edmonton can secure a thriving future with lower costs, a stronger economy, and a fairer community for all.

CLIMATE TASK FORCE

While Edmonton has taken significant steps, climate change cannot be solved quickly or with a single solution. This is a long-term challenge, requiring transformational change on a system wide scale. In 2023, City Administration identified implementation gaps and actions that required scaling up in order to achieve climate goals. This includes gaps related to effective governance to deliver on the climate strategies, such as the need for assigning and communicating roles and responsibilities for accountability, the need to develop climate training and education for staff, the need to develop and implement a formal monitoring and evaluation framework, and the need for improved sharing of climate information with decision makers. In response, the Climate Task Force was established to take a new corporate-wide, integrated approach to enable City Administration to more rapidly and effectively implement the City's climate emergency response, including the actions of the two climate strategies. The Climate Task Force will continue its work until its mandate is complete.

In late 2023, the Office of the City Auditor conducted a review to determine whether the City has an effective governance structure to deliver the actions of the two climate strategies. The findings and recommendations were presented in April 2024 in a Council Report and aligned with the gaps identified by Administration. The Auditors' findings and recommendations corresponded directly with existing Climate Task Force deliverables.

The Task Force is made up of senior leaders within the City of Edmonton that have an expertise in governance, organizational management and relevant subject matter expertise to lead and coordinate the focus area work. The Task Force includes a number of specialists to challenge the group's perspectives, including an Environment Advocate, Equity Advocates, an Indigenous Advocate, and a City Plan Integrator.

The Task Force mandate is focused on incorporating environment and climate change into City work, operations and culture. Deliverables have been actioned in each of these seven focus areas as outlined in the figure below.

LEGAL UPDATE

The City's actions and authority to perform specific climate work are governed by the authority delegated to municipalities by statute and regulation. Over the last year, federal and provincial legislative changes contributed to a changing legal landscape for the City's climate work. At the provincial level, significant changes to the *Municipal Government Act,* the *City of Edmonton Charter, 2018 Regulation*, and the *Safety Codes Act* altered the City's legal authority. At the federal level, changes to the *Competition Act* and forthcoming regulations affecting methane emissions from municipal landfills may also affect the City's future work. Examples of these legislative changes are below:

Provincial Level

Within 2024, the Legislative Assembly of Alberta approved changes to statutes and responsible Ministers modified regulations relevant to the City's climate change work:

- On May 1, 2024, the *Building Code Regulation*, Alta Reg 5/2024 came into force. Section 3 of this regulation prohibits an accredited municipality under the *Safety Codes Act*, RSA 2000, c S-1 from introducing any requirement to exceed the Applicable Energy Performance Tier 1 under the National Building Code - 2023 Alberta Edition and the National Energy Code of Canada for Buildings 2020.

- On May 23, 2024, the Government of Alberta issued an Order in Council[16] amending the *City of Edmonton Charter, 2018 Regulation* and removing specific municipal powers related to the Safety Codes Act, RSA 2000, c S-1 for environmental matters, including bylaws related to energy consumption and heat retention:

  > Subsection 7(2)
  >
  > (2) In the Safety Codes Act, in section 66, the following is added after subsection (3):
  >
  > (3) the City may make bylaws relating to environmental matters, including, without limitation, matters relating to energy consumption and heat retention, but only to the extent those bylaws are consistent with all regulations made under this section and section 65.01 and all codes declared in force by those regulations.

- Bill 20, the *Municipal Affairs Statutes Amendment Act, 2024*[17] authorizes the Lieutenant Governor, on the advice of the Executive Council, to direct a municipality to amend or repeal a bylaw. Bill 20, given its broad application, presents an additional risk to the City in passing bylaws related to climate change and environmental matters, particularly where those bylaws do not align with the priorities of the Government of Alberta.

Federal Level

Within 2024, Parliament of Canada approved changes to statutes and federal Ministries authorized new regulations. These changes may affect the City's climate work.

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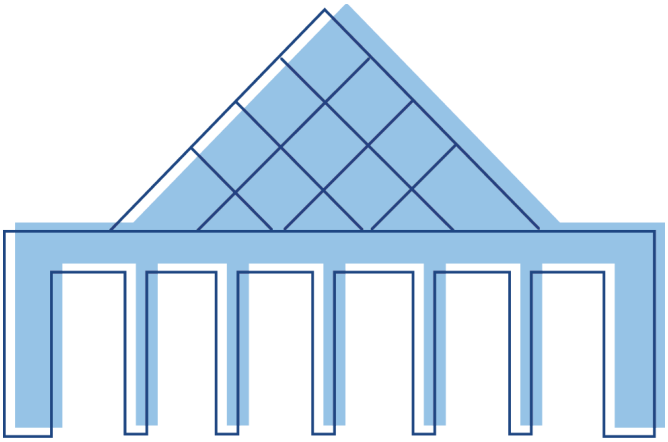
[16] https://kings-printer.alberta.ca/Documents/Orders/Orders_in_Council/2024/2024_136.pdf

[17] Bill 20: Municipal Affairs Statutes Amendment Act, 2024: https://docs.assembly.ab.ca/LADDAR_files/docs/bills/bill/legislature_31/session_1/20230530_bill-020.pdf Section 603.01 is provided in amendment A1 dated May 28, 2024: https://docs.assembly.ab.ca/LADDAR_files/docs/bills/bill/legislature_31/session_1/20230530_am-020-A1.pdf

- On June 20, 2024, Parliament of Canada amended the Competition Act, RSC 1985, c. C-34 through the passing of Bill C-59. The amendment contains new provisions related to statements, warranties or guarantees of a product or service's environmental benefits to prevent "greenwashing". The regulations require that any environmental protection or climate change action claims made to promote a business interest must be supported by adequate and proper tests and substantiation. The new regulations are not clear in their applicability to municipalities and the City, along with The City of Calgary, has sought a response from the Competition Bureau of Canada. Municipalities and their subsidiaries make public disclosures relating to their environmental performance, or the environmental, social, or ecological benefits of their activities, such disclosures are not made for the purpose of advancing business interests, but are rather made for transparency and accountability to the public, and to continuously support policies having environmental, social, and ecological benefits. At this time, the City is updating our procurement contracts to include these requirements when hiring relevant services, but until we receive a response from the Competition Bureau of Canada, Legal Services is uncertain whether the greenwashing restrictions apply to the public disclosures made by the City in relation to our Climate Strategies and climate related work.

- On June 29, 2024, the federal departments of Environment and Health, introduced proposed "Regulations Respecting the Reduction in the Release of Methane (Waste Sector)" Canada Gazette, Part I, Volume 158, Number 26[18] with the objectives of reducing methane emissions from municipal solid waste landfills and prescribing methane testing requirements. On August 28, 2024, the City provided feedback to the Government of Canada on the proposed regulations. The regulations, if published, would impose requirements on the City 's emissions from municipal solid waste and affect the City's landfill work for the Clover Bar Class II Landfill. Although the City is already working toward initiatives to capture landfill gas from the Clover Bar Class II Landfill, the proposed federal regulations, if published, would prescribe requirements affecting the City's future work.



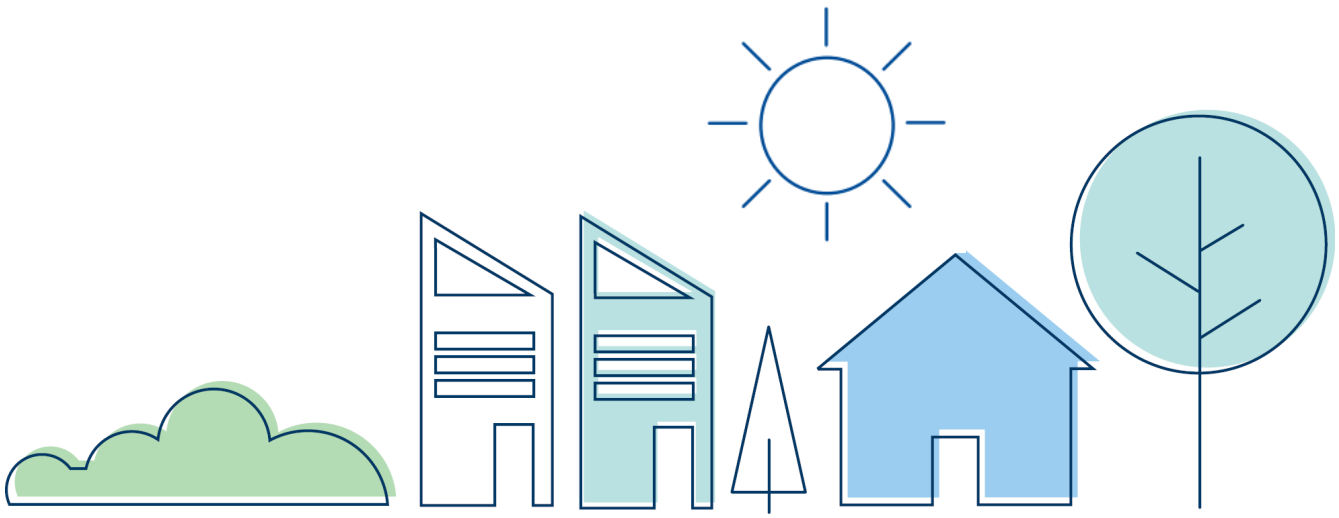
[18] https://gazette.gc.ca/rp-pr/p1/2024/2024-06-29/html/reg5-eng.html

LOOKING FORWARD

Edmonton is making progress towards climate resilience, but more action is needed to fully realize the goals outlined in its Climate Strategies. This decade is crucial for climate action, and the decisions we make today will shape Edmonton's future resilience.

While transformative change may present challenges, it offers significant long-term benefits. Diverse strategies, including policy adjustments, optimized infrastructure design, and reinforcement of existing structures, yield benefit-cost ratios ranging from 3:1 to 10:1, indicating significant long-term economic advantages.[19]

Progressing towards a climate-resilient future is a long-term endeavor requiring sustained investment and action. Significant steps have been taken, but implementation gaps and scaling opportunities remain. The City's Climate Task Force is providing valuable guidance for corporate-wide climate strategy implementation. A bold and creative approach is needed, including innovative partnerships and community engagement. As we look ahead, Edmonton commits to advancing climate action and delivering meaningful, transformative change.

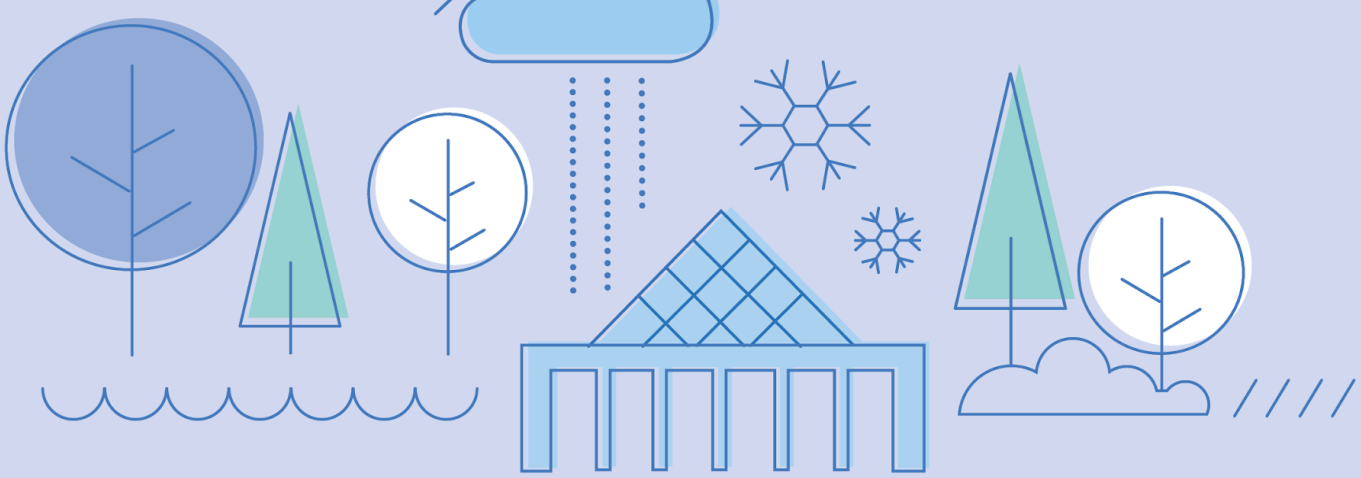


[19] Boyd, R. and Markandya, A. (2021): Costs and Benefits of Climate Change Impacts and Adaptation; Chapter 6 in Canada in a Changing Climate: National Issues Report, (Eds.) F.J. Warren and N. Lulham; Government of Canada, Ottawa, Ontario

ATTACHMENTS

To provide further information on the topics discussed in the report, please see the following attachments:

1. Climate Action Highlights 2023 and 2024
2. 2023 Greenhouse Gas Emissions Update
3. 2023 Climate Resilience Policy C627 Annual Report



ATTACHMENT 1
Climate Action Highlights 2023 and 2024

CLIMATE ACTION SNAPSHOT

The City of Edmonton has been taking climate action as a corporation, and helping community members to take climate action as well. This work contributes to achieving **Climate Resilience**, a key goal of Edmonton's Strategic Plan, ConnectEdmonton and includes both climate **adaptation** and **energy transition**.

The following examples demonstrate how the City of Edmonton and community climate actions connect to the four strategic goals of Edmonton's Strategic Plan.

1. Clean Energy Improvement Program				
2. District Energy				
3. Greener as We Grow Tree-Boulevard and Open Space Tree Planting and Naturalization				
4. Home Upgrades Program				
5. Transit Service				
6. Neighbouring for Climate				
7. Renewable Electricity for City of Edmonton Operations				
8. City of Edmonton Solar Installations				
9. Solar Rebate Program for Multi-unit Residential Properties				
10. Zoning Bylaw and District Planning				

CLIMATE ACTION HIGHLIGHTS

The following are some examples of the way that the City of Edmonton and the community are taking climate action in 2023 and 2024.

Clean Energy Improvement Program (CEIP)

The CEIP provides eligible property owners access to long term financing for energy efficiency and renewable energy upgrades to their privately owned building(s). The financing is repaid over a period of up to 20 years through a CEIP tax placed on the property tax account. If ownership changes during the repayment period, the payments are transferred to the new property owner. The pilot program has 63 residential and three commercial active or completed projects with the corresponding carbon emission reductions helping the City meet climate change goals. A permanent CEIP program launched October 17, 2024 with the initial allocation of $20 million in financing to support building owners from 2024 to 2028.

District Energy

The City continues to advance the implementation of Edmonton's District Energy Strategy supporting the Renewable and Resilient pathway of the Community Energy Transition Strategy. The immediate strategy work is focused on developing tools to activate district energy readiness and/or connection, completing techno-economic feasibility studies in priority district energy opportunity areas such as River Crossing and Exhibition Lands, as well as exploring private partnership opportunities. In both opportunity areas the focus is on ensuring that development activities are aligned with district energy implementation, with the goal of adhering to the City's climate targets in these specific developments.

The City also continues to advance the development of the first two established opportunity areas identified in the District Energy Strategy:

Blatchford Renewable Energy, the City-owned and operated utility supporting the Blatchford community has been reliably providing renewable heating and cooling energy services to the homes since 2019. In addition to ongoing operational work, the utility is also planning the expansion of the district energy infrastructure needed to support the growing development. In 2024, the City received a $23.7 million dollar grant from the Government of Canada to support the further development of the system.

The **Downtown District Energy Initiative** is currently underway with ongoing construction planned throughout 2024/2025. The first phase of the project includes construction of a central energy plant and connection to the Winspear Centre, Century Place and Chancery Hall. This first phase, in partnership with EPCOR, is expected to be operational in the third quarter of 2025. Planning and design activities are starting for the expansion of the Downtown system, also including other development opportunities which have been explored, such as Station Lands and the Village@ICE developments.

Greener as We Grow Tree-Boulevard and Open Space Tree Planting and Naturalization

Forests and trees are a nature-based climate solution that contributes to biodiversity, protects and conserves water resources, and lowers emissions by capturing and storing excess carbon. The City plans to increase its urban forest canopy by planting around 300 hectares in naturalized areas, boulevards, parks and open spaces with a target of planting two million trees and shrubs by 2031, a part of the City's Urban Forest Asset Management goal of achieving 20 per cent canopy cover by 2071.

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 over an eight year period. This funding will support the planting of 1.5 million trees in Edmonton and is matched by $66 million in municipal funding over the same time period as part of the new Greener As We Grow capital profile.

Over 2023-2024, the City has increased the urban canopy by planting a total of 905 new boulevard and open space trees and replacing 3,000 boulevard and open space trees, naturalizing 26 hectares —planting 264,623 seedlings (187,185 tree seedlings and 77,438 shrub seedlings) through the 2 Billion Trees program. Additionally, 3,177 additional boulevard and open space replacement plantings were planted through the Soft Landscaping Capital Profile, 312 trees were planted through recoverable replacement planting programs and 88 boulevard and open space trees were planted through Community Forestry citizen driven planting programs. In addition, the City has partnered with Wild+Pine to begin restoring a 26 hectare natural area.

The City continues to advance tree planting and naturalization through the capital planning for the Greener as We Grow project. At this time, the carbon budget estimates new tree plantings proposed in recommended profiles will result in a net reduction of 500 tonnes of CO2e/year by 2026.

The City will also work with Indigenous leaders, Elders and Knowledge Keepers to ensure the planting of local species is both reflective and supportive of the traditions and cultural practices of local Indigenous peoples and those with historic and cultural connections to the territory.

Home Upgrades Program (HUP)

In 2023, the City funded the Home Upgrades Program that supports hard-working Edmonton residents who live in energy-inefficient homes but don't have the financial ability to install upgrades that will reduce their energy bills. The program offers free multilingual energy efficiency education and home upgrades to Edmonton families, resulting in an average 30 per cent reduction in household energy use, reducing household energy utility bills and improving the comfort, livability and safety of the homes. The program is delivered by Alberta Ecotrust Foundation with the support of several funding partners; the City of Edmonton is proud to be the majority funder for Edmonton homes. In 2023-2024, a total of 110 Edmonton homes have benefitted from the program, including this participant:

"I would like to send my heartfelt thank you for what you all have done. It has been such a benefit and honour to be accepted into the [Home Upgrades] program... it has truly been a life changer for me... the biggest difference is the attic insulation! I knew it needed to be done but couldn't afford it. My bedroom was like an ice room in the winter and a sauna in the summer." - HUP Participant

Transit Service

From January to September 2024, ETS ridership grew by 14 per cent compared to 2023, exceeding pre-pandemic ridership and outpacing population growth. This continues to be one of the strongest post-pandemic transit ridership recoveries in the country. Transit ridership is influenced by several levers, with investments in transit service having a significant impact on rider demand.

The Valley Line Southeast LRT opened in November 2023, providing a low carbon public transportation option from Mill Woods to Downtown Edmonton. The LRT line was designed using Sustainable Urban Integration guidelines - a new low-floor transit system designed to fit into neighbourhoods. This includes using enhanced landscaping and streetscaping along the length of the corridor to create a more natural environment and incorporating organic materials such as stone and wood throughout the line's amenities.

The opening of Valley Line Southeast added 13 kilometres of street-level track, expanding the track length of the LRT network in Edmonton to 40 kilometres. Valley Line Southeast LRT monthly ridership increased by 62 per cent since the opening of the LRT line, from 138,000 in November 2023 to nearly 258,000 in August 2024.

In addition to the opening of Valley Line Southeast, there have been several other improvements to transit service during this period. In 2023, City Council invested in growing transit service, adding 26,000 off peak service hours to the transit network in 2023, 70,000 hours in 2024, and 50,000 hours to be added in 2025. ETS also had a 25% increase in On Demand Transit, starting in late 2023.

Neighbouring for Climate

The Neighbouring for Climate program encourages neighbours to identify community assets and climate risks, and act together to adapt their neighbourhoods to a changing climate, while also mitigating emissions. The program provides a toolkit of action cards to help make climate resilience action as easy as possible. Since the launch of the full program in April 2024, over 50 Climate Connectors have registered from over 45 neighbourhoods across the city. Already, the program has garnered international attention due to its unique, yet simple approach of combining the importance of community connections with climate action. Neighbouring for Climate provides Edmontonians with confidence that together, they can act on climate change.

Renewable Electricity for City of Edmonton Operations

The City of Edmonton has offset all greenhouse gas emissions related to corporate electricity use in 2023. Moving forward, the City of Edmonton is taking significant steps to reduce greenhouse gas emissions by entering into 20-year green energy contracts that will enable the City to utilize 100% renewable electricity. The contracts will source 80% of the power from wind energy and 20% from solar energy. The solar project began supplying power to the City in 2024, and the wind project is anticipated to begin supplying power in 2025.

City of Edmonton Solar Installations

As of the end of 2023, 4155 kilowatts (KW) of solar capacity was installed on City buildings and properties, which have reduced 2023 annual emissions by 348 tCO2e. This represents a growth in solar photovoltaic (PV) capacity of 580 per cent (over 3500 kW) compared to 2022.

Solar Rebate Program for Multi-unit Residential Properties

In 2023, Edmonton saw over 2000 new private solar installations, almost doubling the total number of community solar installations to date. There are now over 60 megawatts (MW) of solar capacity installed by Edmontonians. Open from 2019 to 2023, Edmonton's Solar Rebate Program has seen almost 2,000 homes receive $6 million in rebates, resulting in installation of over 16 megawatts (MW) of rooftop solar. To date, participants in the program have invested a combined total of nearly $50 million in solar energy systems which has resulted in nearly 300,000 tCO2e of modelled, lifetime greenhouse gas emissions reductions. On July 2, 2024, the City invested an additional $1.3 million to provide financial incentives to multi-unit residential properties that install rooftop solar PV systems. Re-opening the Solar Rebate Program to multi-unit residential properties makes solar energy more accessible to a greater diversity of Edmontonians, helping ensure that they can share in the environmental and financial benefits of solar energy. Available to properties with four or more permitted dwellings, making funding exclusively available to multi-family housing helps foster a more equitable energy transition by making rooftop solar more accessible to people historically underserved by renewable energy initiatives.

Zoning Bylaw and District Planning

Zoning Bylaw 20001 was adopted by City Council on October 23, 2023 and came into effect on January 1, 2024. The new bylaw helps to support the City's climate change goals by implementing regulatory changes that create more climate resilient development. The Zoning Bylaw introduces mixed use zones, expands neighbourhood business opportunities and enables a greater variety of housing forms to create a compact city that can help reduce carbon emissions from transportation. The new zoning bylaw also continues to preserve natural areas and parkland and increases landscaping requirements for some new large scale developments and provides an increased incentive to preserve mature trees on all sites.

On October 2, 2024, the District Policy and 14 district plans were adopted by City Council. The intent of District Planning is to ensure we are building a healthy, urban, climate-resilient city where everyone has access to more housing and can enjoy easy access to amenities and services close to home, as envisioned by The City Plan. The new district policy includes energy and climate policies to help Edmonton become more sustainable and will support reductions of carbon emissions by enabling more compact and complete communities, with mass transit and active mobility options.

ATTACHMENT 2
2023 GREENHOUSE GAS EMISSIONS UPDATE

Introduction

The Community Energy Transition Strategy outlines targets for a carbon neutral community by 2050 and a carbon neutral corporation by 2040. The target of becoming a carbon neutral corporation is a decade before the community's target, as a way for the City to demonstrate climate solution leadership.

How we Measure and Monitor our Emissions

A greenhouse gas (GHG) inventory provides a record of estimated total emissions that have occurred based on measured historical data, like fuel use or electricity consumption. The City prepares an annual GHG inventory to understand and track our climate mitigation progress and for assessing achievement of our emission reduction goals.

The City reports on two main sources of GHG emissions: community emissions and corporate emissions. Community emissions are broad and include all emissions produced within the city by the community at large: Edmontonians, businesses, organizations and the City. Corporate emissions are those produced only by the City operations and infrastructure.

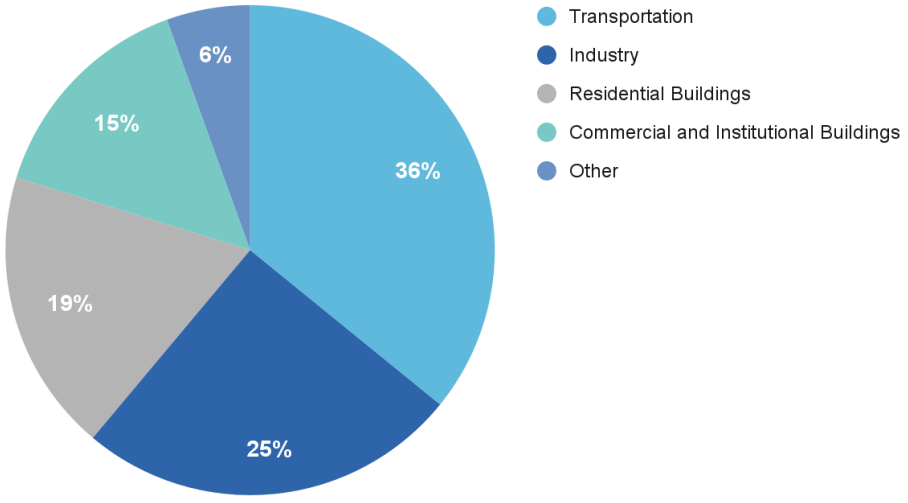
COMMUNITY GHG EMISSIONS

Edmonton has targets to become a carbon neutral community by 2050. To help get us there, interim targets have been set to reduce community emissions 35 per cent by 2025 and 50 per cent by 2030, relative to 2005 levels.

Community GHG Emission Sources In Edmonton

Edmonton's GHG emissions come from five main sectors including commercial and institutional buildings, residential buildings, manufacturing and construction, transportation and other minor sources.

Figure 2.1: Edmonton's 2023 Community GHG Emissions by Sector

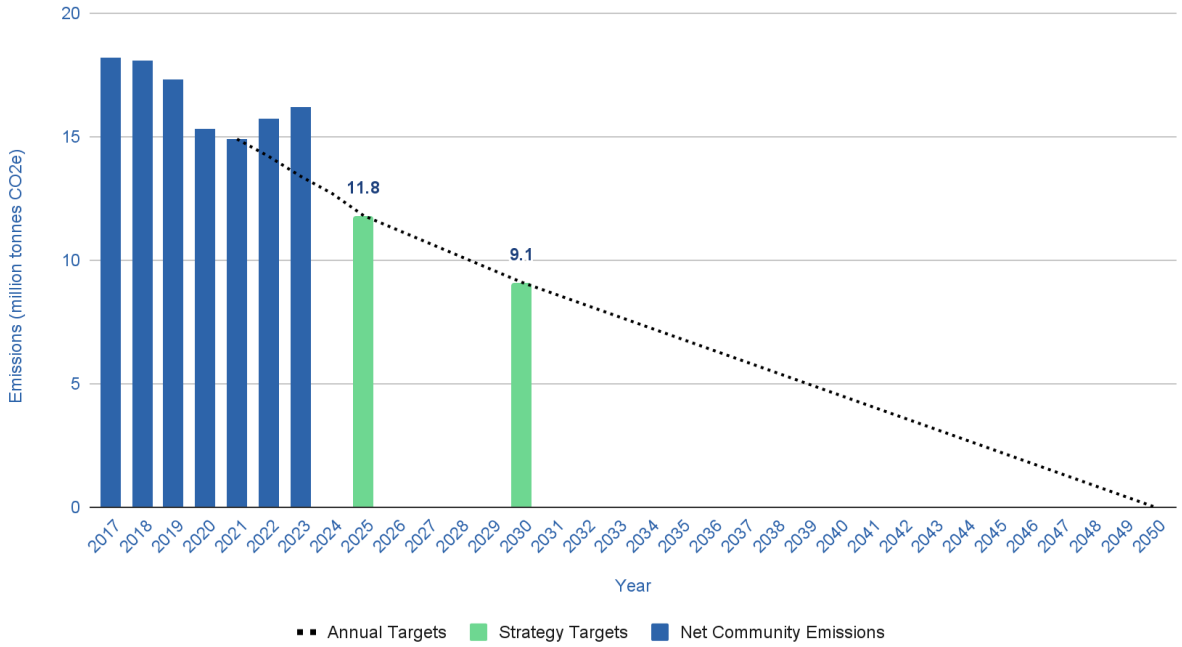


In 2023, the transportation sector was the largest single contributor to total community GHG emissions at 36 per cent. Industry came in second at 25 per cent , while residential buildings (19 per cent) and commercial and institutional buildings (15 per cent) came in third and fourth. The remaining emissions (6 per cent) came from other categories such as landfill emissions and other fugitive sources. The breakdown of community emissions can be seen in Figure 2.1.

2023 Community Emissions: Progress and Trends

Overall, Edmonton's total GHG emissions have reduced by 11 per cent from Edmonton's 2005 baseline year, and per capita emissions have decreased by 44 per cent from the 2005 baseline. Per capita emissions reflect the total community GHG emissions divided by the city's population.

Figure 2.2: Edmonton Community Net GHG Emissions and Targets



These reductions are a positive trend and are generally associated with the Province-wide phase out of coal-fired electricity and ongoing reductions in energy use per capita. Roughly one-third of the reductions in these areas can be attributed to electricity grid improvements, while the remaining two-thirds can be attributed to lower energy use per capita. Preliminary data shows that energy use per capita in Edmonton has decreased by 40 per cent since 2005. Additional analysis is underway to better understand this data and identify any data limitations or uncertainties.

Edmonton is not on track to achieve the 2025 emissions reduction goal. Edmonton's community emissions were targeted to be 13.4 million tonnes of carbon dioxide equivalent (tCO2e) or less in 2023, so that it could remain on a trajectory to achieve the 2025 emissions target (see Figure 2.2). This target was not met, and 2023 community emissions in Edmonton were estimated to be 16.2 million tCO2e (14.2 tCO2e per person).

One way to compensate for remaining GHG emissions is to purchase carbon offsets. Purchasing offsets for the residual 2023 emissions to remain on track to reach the 2025 target would cost Edmonton over an estimated $150 million. To meet the 2025 target, Edmonton's emissions must be reduced to 12.7 million tonnes or less in 2024. This represents a 30% decrease from 2005 levels, or a 23% decrease from 2023 levels.

While continued and accelerated action will be required to establish an ongoing emissions reduction trend, current City of Edmonton programs and actions are providing the public with options to reduce emissions.

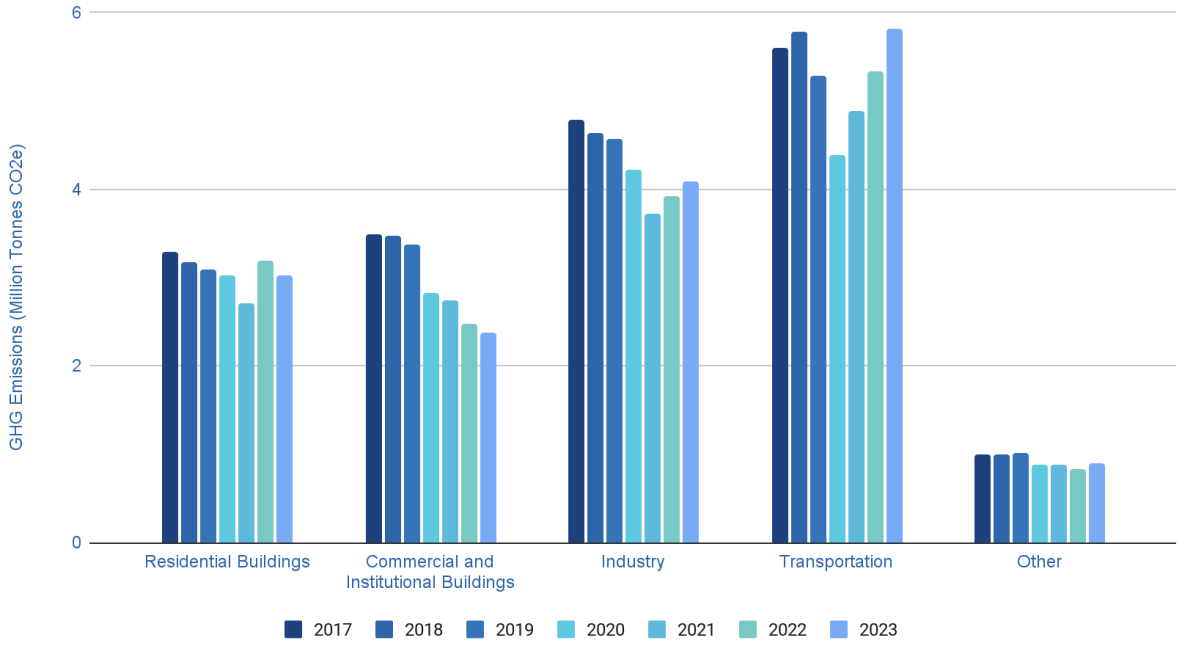
Impacts of COVID-19

The COVID-19 pandemic saw significant reduction in economic activity related to pandemic responses; therefore, emissions estimated in 2020 and 2021 are not reflective of an emission reduction trend.

Edmonton's 2023 emissions were 9 per cent above the lowest annual emissions reported for the City in 2021. It is important to note that the increases observed in 2023 emissions are primarily due to increases in energy use in sectors that were impacted by the pandemic; specifically buildings, industrial, and transportation sectors (see Figure 2.3).

Although emissions have been increasing due to recovery from the pandemic, 2023 emissions remain 7 per cent below pre-pandemic levels in 2019.

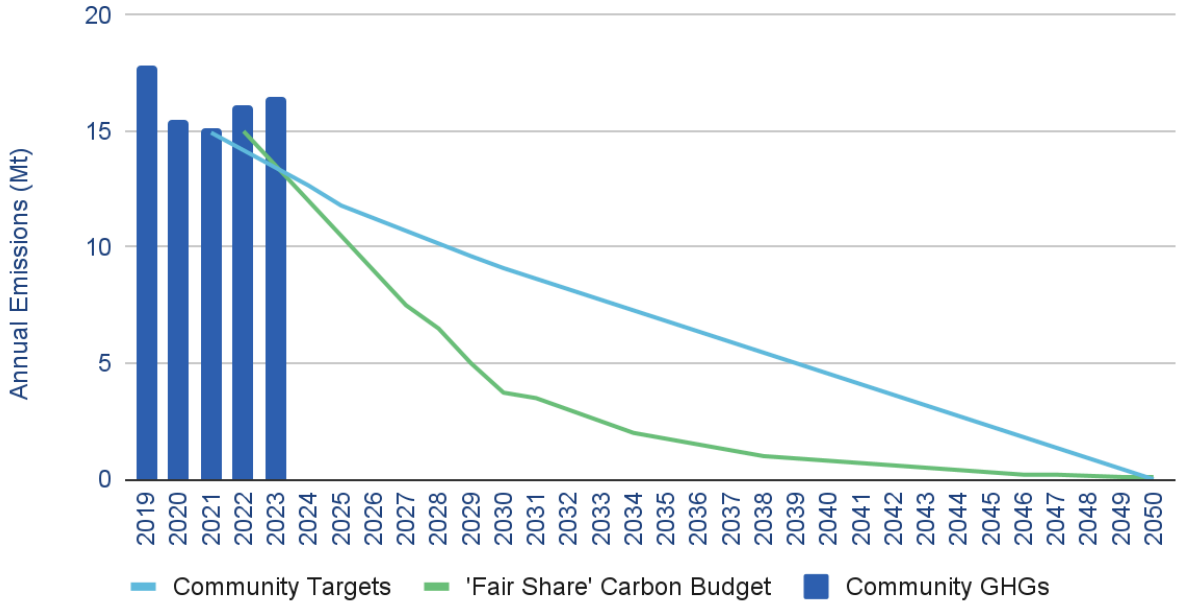
Figure 2.3: Edmonton Community GHG Emissions by Reporting Sector



Residual Emissions

Administration has also identified the "residual emissions" that would need to be reduced or offset to stay within the community "fair share" carbon budget (see Figure 2.4). Achieving Edmonton's "fair share" (i.e. going further due to Edmonton's relatively high per capita gross domestic product (GDP) and high emissions levels) local carbon budget requires going further than the reduction targets and finding ways to also remove emissions from the atmosphere (i.e. negative emissions). Emission reduction targets were established to align with the Paris Agreement, whereas the fair share Carbon Budget is aligned with achieving a fair share of global climate action. The fair share carbon budget was based on the theory that cities with above average GHG emissions and with high per capita GDP need to reduce emissions on a steep decline. Figure 2.4 highlights the additional reductions required to achieve the "fair share" carbon budget, relative to the current emission targets outlined in the Community Energy Transition Strategy. In order to stay within the local fair share carbon budget the City must meet the Community emissions target trajectory and gain an additional 25.2 megatonnes (Mt) of negative emissions between 2024-2030.

Figure 2.4: Community Targets and achieving a 'Fair Share' of global emissions reductions



CORPORATE GHG EMISSIONS

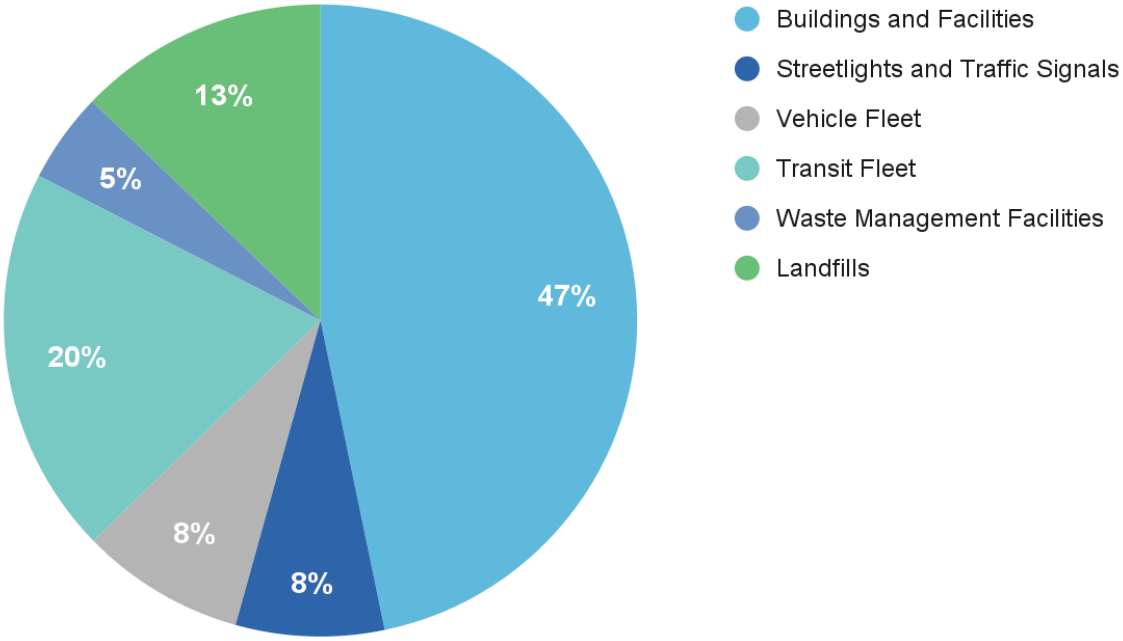
The City has a goal of becoming a **carbon neutral corporation by 2040**. The corporate target is set a decade earlier than the community target to demonstrate Edmonton's commitment to climate leadership.

Corporate GHG Emission Sources In Edmonton

Edmonton's Corporate GHG emissions are the amount of GHG emissions from the services provided and infrastructure maintained by the City. Corporate emissions are categorized into six main sectors: buildings and facilities, streetlights and traffic signals, vehicle fleet, transit fleet, waste management facilities, and landfills.

In 2023, the buildings and facilities sector was the largest contributor to gross corporate GHGs at 47 per cent[20]. Transit fleet came in second at 20 per cent, while waste management facilities and landfills (18 per cent) came in third. The remaining emissions came from streetlights and traffic signals and the City's non-transit vehicle fleet (both at 8 per cent). The breakdown of corporate emissions can be seen in Figure 2.5 below.

Figure 2.5: Edmonton's 2023 Corporate GHG Emissions by Sector



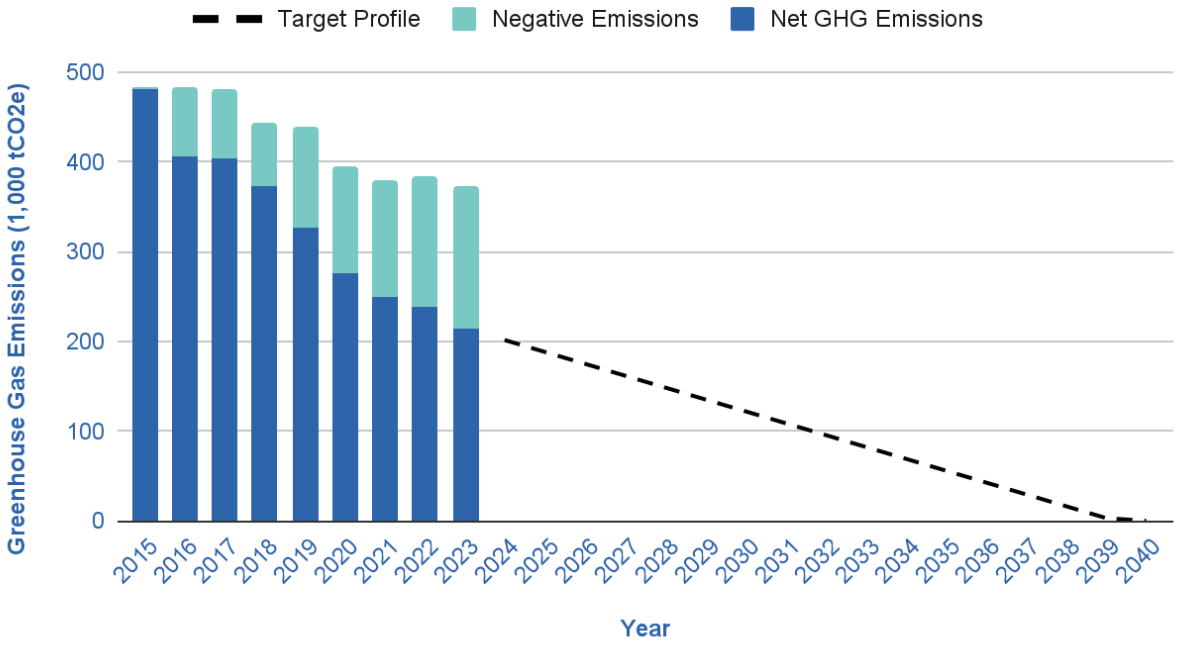
[20] While buildings made up 47 per cent of gross corporate emissions, roughly 55 per cent of building emissions were from electricity usage, which were offset through the purchase of renewable energy certificates, as described in the section below.

2023 Corporate Emissions: Progress and Trends

In 2023, the City's net corporate GHG emissions were 49 per cent below Edmonton's 2005 baseline emissions. The City also saw a 10 per cent reduction from 2022 net emissions levels. Figure 2.6 illustrates the corporate net emissions trends since 2015. The City of Edmonton's corporate emissions make up approximately two per cent of the total emissions within the community.

Net GHG emissions represents the overall balance of emissions produced and emissions removed from the atmosphere (through carbon storage from the urban forest) or emissions avoided by purchasing renewable energy certificates. These reductions are both included in the 'Negative Emissions' illustrated in Figure 2.6.

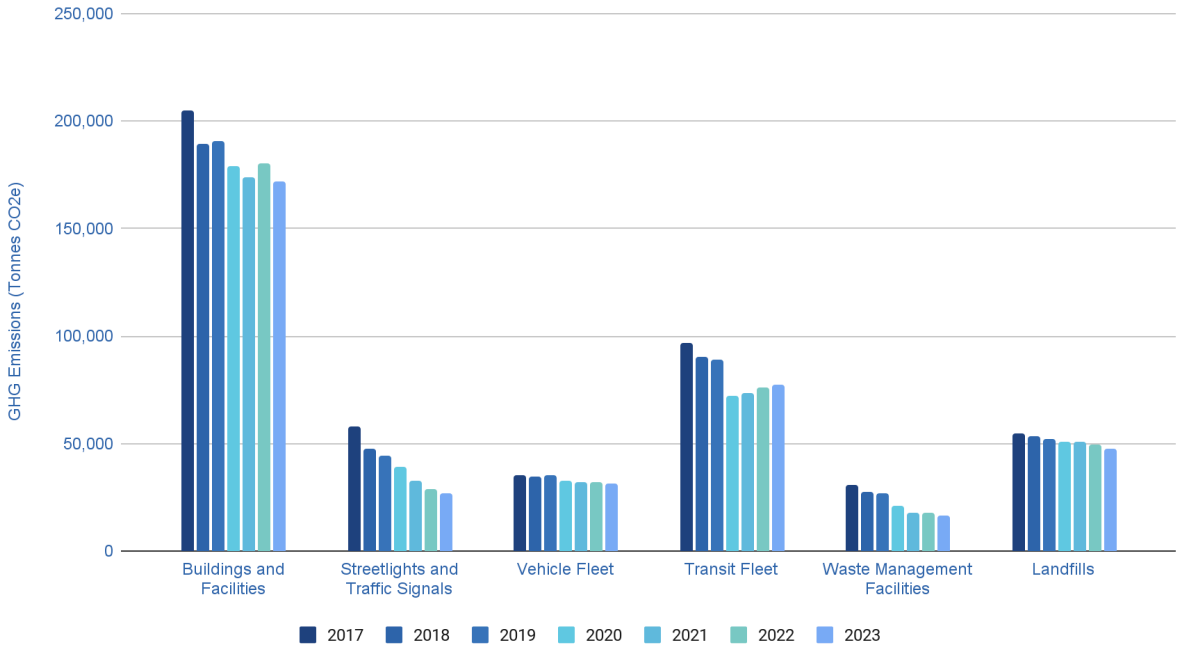
Figure 2.6: Annual Corporate Emissions



The City's net GHG emissions have been decreasing over the last five years (see Figure 2.6). These reductions have come from various sectors. Emissions from City buildings, transit fleet and streetlights have decreased, while emissions from the light duty fleet have remained relatively unchanged (see Figure 2.7).

Additionally, corporate emissions have been offset by the purchase of renewable energy certificates, resulting in the offset of all corporate electricity use emissions in 2023 and equating to a reduction of 41 per cent of the 2023 emissions. Further emissions offsetting from corporate trees reduced another one per cent of 2023 emissions. To reach the 2040 target for carbon neutral corporate operations requires another 215,000 tonnes of annual emissions reductions, which equates to 51 per cent of the 2005 emissions baseline.

Figure 2.7: Edmonton Corporate GHG Emissions by Reporting Sector



Conclusion

In 2023, community emissions increased by 3 per cent compared to 2022 emissions, while corporate emissions decreased by 5 per cent. If Edmonton's 2023 emission trajectory continues, Edmonton's GHG reduction targets will not be achieved. Significant reductions will be needed to reach the community and corporate GHG targets laid out in the Community Energy Transition Strategy.

It is challenging to evaluate discernible GHG emissions trends on an annual basis, as some actions take several years for emission reductions to be realized. As the City continues to improve assessment of local GHG emissions, deeper assessment of the overall and sectoral GHG emissions trends will provide a more detailed picture of Edmonton's climate actions and help to inform the City's climate policy and actions.

ATTACHMENT 3
2023 Climate Resilience Policy C627 Annual Report

Climate Resilience Policy C627

The City's Climate Resilience Policy (C627) was approved on April 19, 2021 and replaces the previous Sustainable Building Policy (C532) and Energy Transition Strategy (C585). Policy C627 includes three commitments:

- to reduce greenhouse gas (GHG) emissions to specified targets,
- to adapt to climate change, and
- for the City to lead climate solutions in service delivery and corporate management.

There are six administrative procedures[21] under policy C627 which focus on City buildings. They include a requirement for annual progress reporting to City Council and the City Manager.

The six procedures are:

1. Climate Resilient Design and Construction of City Buildings
2. Climate Resilient Existing City Buildings
3. Climate Resilient Acquisition of City Buildings
4. Climate Resilient City Building Leasing - City as Landlord
5. Climate Resilient City Building Leasing - City as Tenant
6. Climate Resilient City-Funded, Non-City Owned Buildings

These procedures aim to reduce emissions, lower operating costs, and ensure City buildings are prepared for a changing climate. An update of the conformance status of each procedure can be found below. The policy and its procedures are scheduled to be reviewed by May 2026.

Procedure 1: Climate Resilient Design and Construction of City Buildings

This procedure sets out various requirements for the design and construction of new City owned buildings, such as:

- Designing buildings to be emissions neutral and meet specified energy efficiency targets
- Dedicating a minimum of 1 per cent of total capital project budget to incorporating on-site renewable or alternative energy generation systems
- Including an embodied carbon assessment, and considering use of materials with the lowest embodied carbon
- Attaining a minimum of Leadership in Energy and Environmental Design (LEED) Silver certification
- Designing to mitigate the risk and impacts of climate change, including the completion of a climate risk assessment

New building projects currently underway under this Administrative Procedure, and their conformance status are found in Table 1 below.

[21] The administrative procedures are approved by the City Manager and are intended to provide direction on how Administration is expected to activate Policy C627. At this time, the procedures focus on City buildings.

TABLE 1. CLIMATE RESILIENT DESIGN AND CONSTRUCTION OF CITY BUILDINGS CONFORMANCE STATUS 2023

Project Name	Conformance Status	Notes
Blatchford Fire Station No. 8	Conforms	Construction started
Riverbend Library	Conforms	Schematic Design is complete and conforms (project is on hold)
Rollie Miles Recreation Centre	Partially conforms *with approved exception*	An exception was provided as it was not feasible for the natatorium to meet the energy demand target (project is on hold)
Walker Fire Station	Conforms	In schematic design
Wellington Fire Station	Conforms	In schematic design
Police Seized Vehicle Lot Administrative Building	Under Review	Project has moved to modular build, conformance requirements are under review
Southeast Transit Garage	Conforms	In pre-design
Garneau and Canora Affordable Housing	Partially Conforms	Affordable housing projects funded by the City are required to meet a target for consuming 20 per cent less energy and producing 20 per cent less GHG than the 2017 code reference building, as we][=ll as incorporate the future installation of renewable energy systems in their design. These projects intend to meet the C627 energy reduction and GHG reduction targets.

Full conformance with the Climate Resilience Policy C627 requirements has been a challenge for many projects. Project budgets have been impacted by inflation and supply chain issues related to pandemic recovery, while the City faces budget constraints due to limited debt space. Despite this, these projects will still be designed and constructed to achieve energy and GHG savings above the required code performance standard. Projects can be exempted from the C627 requirements if they can demonstrate there is no lifecycle cost benefit to the requirement.

Procedure 2: Climate Resilient Existing Buildings

This Administrative Procedure requires existing City buildings to reduce energy use and GHG emissions. Programs have been established for the majority of requirements, and implementation is ongoing. A summary of requirements and current implementation status are found in Table 2 below.

TABLE 2. CLIMATE RESILIENT EXISTING BUILDINGS IMPLEMENTATION STATUS 2023

Requirement	Implementation Status	Notes
Building Energy Benchmarking Program Participation in the Building Energy Benchmarking Program	Ongoing	The 2021 Building Energy Benchmarking program results were published in 2023. 160 properties including 165 City-owned buildings are participating. Those remaining City buildings without complete, verifiable energy use data were not included in the program, but will be once their energy use data can be collected and verified.
BOMA BEST Obtaining BOMA BEST certification	Ongoing	Thirty City-owned buildings have been BOMA BEST certified since 2019, including 15 in 2021 and 10 in 2022. No buildings were certified in 2023. Additional certifications are planned for 2024-2026.
Corporate GHG Inventory Participation in the corporate GHG inventory	Ongoing	The corporate GHG inventory includes all City-owned buildings.
Renewable Energy Plan The development of a renewable energy plan outlining proposed renewables installations within the Corporate Climate Management Plan	Not yet actioned	
Carbon Accounting A carbon accounting process is to be established for any energy retrofit project, routine lifecycle replacement, and capital rehabilitation processes that claim energy savings	Ongoing	The City released its first carbon budget in 2022, which included quantification of GHG emissions impacts of building rehabilitation projects when information was available. The carbon accounting process will continue to be developed and refined. Carbon budget updates have accompanied every budget update since 2022.
Measurement and Verification Measurement and Verification is to be completed on specific projects to help verify persistence of energy savings and inform the implementation of an energy savings reserve fund at the City.	Ongoing	A Measurement and Verification program has been established, and to-date, the required analysis has been completed for seven projects in total, with an estimated annual savings of over $500,000 in 2023 for these projects.
Communications Public communications are to be developed to communicate climate resilient features of buildings, including signage, online information, and public engagement through the Change for Climate program.	Ongoing	Public communications efforts have included sharing stories about BOMA BEST certifications and Building Energy Benchmarking program on the Change for Climate website, and installing signage for LEED certifications.

TABLE 2. CLIMATE RESILIENT EXISTING BUILDINGS IMPLEMENTATION STATUS 2023

Requirement	Implementation Status	Notes
Emissions Neutral Portfolio Plan Develop an Emissions Neutral portfolio plan and decision making framework, including a Recommissioning and Continuous Optimization program.	In Progress	
Energy Audits Conduct energy audits to identify opportunities for improvement when new buildings are acquired, to select eligible buildings for energy retrofits, and to complete BOMA BEST certifications.	Ongoing	Energy audits were completed as required in support of these three programs. Energy audits help Administration to identify opportunities for improving energy performance and reducing operating costs.
Climate Risk Assessment Develop a climate and risk assessment guidance process and use to identify a method for building climate resilience into facility assets	Ongoing	A climate risk assessment of city buildings was conducted in 2023. The information was used to prioritize buildings based on their condition, for the City's building retrofit program. Future retrofits will ensure the buildings maintain a high level of functionality, safety, and efficiency during climate-related challenges in the future, while supporting the City's broader climate action objectives.

A $53 million capital profile was approved for climate resilient City facility upgrades as part of the 2023-26 budget. Planning and design for the following projects is progressing using this capital profile:

- Heat recovery at Mitchell and Ferrier Transit Garages
- Fuel switching at Mitchell Transit Garage, O'Leary Pool, SE Division Police Station, and Castle Downs Arena
- Air handling unit replacements and upgrades at various locations
- Solar PV installations at Expo Centre, Kathleen Andrews Transit Garage and other locations
- LED lighting at Edmonton Police Service Headquarters, Commonwealth Stadium and other locations.

These projects will reduce GHG emissions and lower operating costs.

Procedure 3: Climate Resilient Acquisition of City Buildings

This procedure sets out requirements for the acquisition of City buildings. There were no acquisitions which fell under the Procedure in 2023.

Procedure 4: Climate Resilient City Building Leasing (City as Landlord)

This procedure sets out requirements for leased buildings, where the City is the Landlord. The current state for leasing has a number of agreements that reference the previous Sustainable Building Policy (C532). However, leasing has received feedback from tenants that adhering to City Policies as part of lease requirements could prove difficult due to the operation-ownership models

specific to those leases. An assessment of how the lease must be changed to incorporate policy C627 requirements is under way and will be addressed in the next revision of the policy.

Procedure 5: Climate Resilient City Building Leasing (City as Tenant)

This procedure sets out requirements for leased buildings, where the City is the tenant. Administration has initiated, for the leasing process, a program to screen potential buildings and facilities based on the requirements of the previous Policy (C532). A process for application of the new C627 policy to lease renewal is currently under revision.

Procedure 6: Climate Resilient City-funded non-City owned Buildings

This procedure sets out requirements for new, non-City owned buildings that are more than 33 per cent funded by the City. The requirements are generally the same as those for new City-owned buildings. Applicable projects are reported in Table 1.

Previous Sustainability Policies

Several City projects fall under previous policies and will be reported on until they are complete. Policy C532 was approved in 2007, and amended in 2017. This policy was replaced by Policy C627 in 2021.

Policy C532 - Sustainable Building Policy (2017 - 2021) - Report 2023

There are several ongoing projects which were initiated under the previous sustainable building policy (C532). This procedure set out various requirements for the design and construction of new City owned buildings, such as:

- Attaining a minimum of LEED Silver certification
- Designing to meet specified energy efficiency and GHG reduction targets
- Dedicating 1 per cent of total capital project budget to incorporating on-site renewable or alternative energy generation systems

The conformance status for buildings applicable to policy C532 are found in Table 3 below:

TABLE 3. POLICY C532 CONFORMANCE STATUS 2023

Project Name	Conformance Status	Notes
Capital Line Operations and Maintenance Facility (OMF)	Does not currently conform	This building is intended to meet requirements of the previous policy (C532). Installation of a solar PV system will be deferred to Stage 2 of the project, with provisions for its future installation in Stage 1. Stage 1 will require the design to be conformant with C532, with the exception of renewable energy installation and LEED Silver accreditation.
Ambleside Integrated Site	Conforms	This project was re-initiated in December 2022 and plans to meet the requirements of C532 and some aspects of C627.
Lewis Farms Recreation Centre	Conforms	The annual heating demand target was met when excluding the ice rink from the energy model analysis, as approved by the Climate Resilient Building Team.

Policy C532 - Sustainable Building Policy (2007 - 2017) - 2023 Report

Projects initiated between 2007 and 2017 fall under the previous C532 sustainable building policy, which required LEED certification. 35 projects achieved LEED certification, with 9 achieving Gold, 23 achieving Silver and 3 achieving Certified. Projects which have not yet achieved certification, or have achieved certification in the past year are found in Table 4 below.

TABLE 4. CONFORMANCE STATUS FOR PROJECTS UNDER POLICY C532 (2007-2017)

Project Name	Conformance Status[22]
Edmonton South Soccer Centre	2nd submission required
Whitemud Park Amenity Buildings	2nd submission required
South Haven Cemetery Service Building	Achieved "LEED Certified" in 2024
Fire Station No. 29 Lewis Farms	2nd submission required
Fire Station No. 30 Pilot Sound	Submitted for final review
Jasper Place Bowl Grandstand Replacement	Submitted for final review
Fire Station No. 28 Heritage Valley	Submitted for review
Borden Park: Natural Swim Experience	Submitted for review
Edmonton Valley Zoo: Nature's Wild Backyard, Phase 1	Submitted for review

[22] In Table 4, "Submission" refers to the project being submitted to the Canada Green Building Council (CaGBC) for LEED certification.